Changes to the National Geodetic Survey Datasheets (datasheet95 program)

Version 8.12.5.20 updated on 06/10/2025

Datasheets for NOAA CORS Network (NCN) stations now incorporate IGS20/ITRF20 reference frame at epoch 2020.00, replacing the previous IGS14/ITRF14 frame. Datasheet for the ARP and MON (when available) of each NCN station will show this message:

```
<PID>.NGS completed the third reprocessing of daily RINEX data from 1996 to 2022
<PID>.for all stations in the NOAA CORS Network (NCN).  The reprocessed solution,
<PID>.known as the Multi-Year CORS Solution 3 (MYCS3), is aligned with the
<PID>.ITFR2020 global frame, epoch 2020.00.  The resulting MYCS3 coordinates
<PID>.were then transformed to NAD83(2011/MA11/PA11), maintaining the currently
<PID>.published epoch of 2010.00.
<PID>
<PID>.Additional information on MYCS is available at:
<PID>.https://geodesy.noaa.gov/CORS/index.shtml
```

Prior to this it was:

```
<PID>.Due to the release of the International GNSS Service (IGS) 2014
<PID>.realization of the International Terrestrial Reference Frame of 2014
<PID>.(ITRF2014), NGS reprocessed all NOAA CORS Network and some IGS stations
<PID>.using data collected between 1/1/1996 and 1/30/2017. The resulting ITRF2014
<PID>.epoch 2010.00 coordinates, referred to as Multi-Year CORS Solution 2
<PID>.(MYCS2), were transformed to NAD 83 (2011/PA11/MA11) maintaining the
<PID>.currently published epoch of 2010.00.
<PID>
<PID>.Additional information on MYCS2 is available at
<PID>.https://geodesy.noaa.gov/CORS/coords.shtml
```

Datasheets for the ARP of an NCN station will display this message:

```
<PID>'THIS STATION IS PART OF THE NOAA CORS NETWORK (NCN).  LATEST INFORMATION
<PID>'INCLUDING POSITIONS AND VELOCITIES ARE AVAILABLE IN THE COORDINATE
<PID>'AND LOG FILES ACCESSIBLE AT:
<PID>'https://geodesy.noaa.gov/CORS/index.shtml
```

and datasheet for the monument (MON) of an NCN station will display this message:

```
AF9647'THIS MONUMENT IS ASSOCIATED WITH STATION 'GODE'
AF9647'AND IS A PART OF THE NOAA CORS NETWORK (NCN). LATEST INFORMATION
AF9647'INCLUDING POSITIONS AND VEOCITIES ARE AVAILABLE IN THE COORDINATE
AF9647'AND LOG FILES ACCESSIBLE AT:
AF9647'https://geodesy.noaa.gov/CORS/index.shtml
```

Additionally, datasheets for NCN stations with less than 2.5 years of data will now display the following paragraph:

```
<PID>.Formal positional accuracy estimates are not available for this CORS
<PID>.because its coordinates were determined in part using modeled velocities.
<PID>.A time-series residual plot is available that shows daily coordinate
<PID>.variations relative to the published coordinates and modeled velocities.
<PID>.Large residuals may indicate a potential error in the modeled velocities.
<PID>
<PID>.Residual plot at:
```

<PID>.https://geodesy.noaa.gov/CORS/ncn_station_pages/index.html?stationID=<CORS site>.

Prior to this it was:

```
<PID>.Formal positional accuracy estimates are not available for this CORS
<PID>.because its coordinates were determined in part using modeled
<PID>.velocities. Approximate one-sigma accuracies for latitude, longitude,
<PID>.and ellipsoid height can be obtained from the short-term time series.
<PID>.Additional information regarding modeled velocities is available on
<PID>.the CORS Coordinates for MYCS2 web page: https://www.ngs.noaa.gov/CORS/coords.shtml.
```

Finally, the link to photographs for CORS:

<PID>.Click photographs - Photos may exist for this station.

has been updated.

Three datasheets displaying all of the above changes are shown below with the changed text and links highlighted in green.

```
1    National Geodetic Survey, Retrieval Date = APRIL 14, 2025 14:38:20 EDT
 DF5754 ***********************************************************************
 DF5754  HT_MOD      -  This is a Height Modernization Survey Station.
 DF5754  CORS        -  This is a GPS Continuously Operating Reference Station.
 DF5754  DESIGNATION -  LOUISIANA STATE U CORS ARP
 DF5754  CORS_ID     -  1LSU
 DF5754  PID         -  DF5754
 DF5754  STATE/COUNTY-  LA/EAST BATON ROUGE
 DF5754  COUNTRY     -  US
 DF5754  USGS QUAD   -  BATON ROUGE WEST (2018)
 DF5754
 DF5754                      *CURRENT SURVEY CONTROL
 DF5754  ______________________________________________________________________
 DF5754* NAD 83(2011) POSITION- 30 24 26.70942(N) 091 10 48.91510(W)   ADJUSTED
 DF5754* NAD 83(2011) ELLIP HT-    -5.204 (meters)        (03/??/25)   ADJUSTED
 DF5754* NAD 83(2011) EPOCH    -  2010.00
 DF5754* NAVD 88 ORTHO HEIGHT -    21.87  (meters)       71.75   (ift) GPS OBS
 DF5754* NAVD 88 EPOCH        -  2009.55
 DF5754  **This station is located in a suspected subsidence area (see below).
 DF5754  ______________________________________________________________________
 DF5754  GEOID HEIGHT    -        -27.070 (meters)                    GEOID18
 DF5754  NAD 83(2011) X  -   -113,402.181 (meters)                    COMP
 DF5754  NAD 83(2011) Y  - -5,504,362.817 (meters)                    COMP
 DF5754  NAD 83(2011) Z  -  3,209,404.368 (meters)                    COMP
 DF5754
 DF5754  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DF5754  Standards:
 DF5754         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DF5754            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DF5754  ------------------------------------------------------------------
 DF5754  NETWORK    0.54   0.36           0.14   0.26   0.18     -0.27182200
 DF5754  ------------------------------------------------------------------
 DF5754
 DF5754.The coordinates were established by GPS observations
 DF5754.and adjusted by the National Geodetic Survey in March 2025.
 DF5754
 DF5754.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DF5754.been affixed to the stable North American Tectonic Plate.
 DF5754
 DF5754.The coordinates are valid at the epoch date displayed above
 DF5754.which is a decimal equivalence of Year/Month/Day.
 DF5754
 DF5754.NGS completed the third reprocessing of daily RINEX data from 1996 to 2022
 DF5754.for all stations in the NOAA CORS Network (NCN).  The reprocessed solution,
 DF5754.known as the Multi-Year CORS Solution 3 (MYCS3), is aligned with the
 DF5754.ITFR2020 global frame, epoch 2020.00.  The resulting MYCS3 coordinates
```

```
DF5754.were then transformed to NAD83(2011/MA11/PA11), maintaining the currently
DF5754.published epoch of 2010.00.
DF5754
DF5754.Additional information on MYCS is available at:
DF5754.https://geodesy.noaa.gov/CORS/index.shtml
DF5754
DF5754.** This station is in an area of known vertical motion.  Due to the
DF5754.** variability of land subsidence, uplift, and crustal motion, NGS has,
DF5754.** determined the orthometric heights for marks in these suspect
DF5754.** subsidence areas should be considered valid only at the epoch date
DF5754.** associated with the orthometric height.  These heights must always
DF5754.** be validated when used as control.  All previously superseded
DF5754.** orthometric heights are now considered suspect and are available
DF5754.** in the superseded section.  NGS does not recommend using suspect
DF5754.** or superseded heights as control.
DF5754
DF5754.The orthometric height was determined by GPS observations and a
DF5754.high-resolution geoid model using precise GPS observation and
DF5754.processing techniques.
DF5754
DF5754.Significant digits in the geoid height do not necessarily reflect accuracy.
DF5754.GEOID18 height accuracy estimate available here.
DF5754
DF5754.The PID for the CORS L1 Phase Center is DQ9070.
DF5754
DF5754.Click photographs - Photos may exist for this station.
DF5754
DF5754.The XYZ, and position/ellipsoidal ht. are equivalent.
DF5754
DF5754.The ellipsoidal height was determined by GPS observations
DF5754.and is referenced to NAD 83.
DF5754
DF5754. The following values were computed from the NAD 83(2011) position.
DF5754
DF5754;                     Northing        Easting    Units Scale Factor  Convergence
DF5754;SPCS LA S-1702 -     211,438.086  1,014,708.604     m   0.99995083 +00 04 35.55
DF5754;SPCS LA S-1702 -     693,693.119  3,329,089.811   sft   0.99995083 +00 04 35.55
DF5754;SPCS LA S-1702 -     693,694.506  3,329,096.469   ift   0.99995083 +00 04 35.55
DF5754;UTM Zone 15N   -   3,365,337.431    674,803.358     m   0.99997697 +00 55 16.64
DF5754
DF5754!                 Height Factor x Scale Factor = Combined Factor
DF5754!SPCS LA S-1702 -     1.00000082 x   0.99995083 = 0.99995165
DF5754!UTM Zone 15N   -     1.00000082 x   0.99997697 = 0.99997779
DF5754
DF5754_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RXP7480365337(NAD 83(2011))
DF5754
DF5754                           SUPERSEDED SURVEY CONTROL
DF5754
DF5754  NAD 83(2011)-  30 24 26.70948(N)    091 10 48.91478(W)   AD(2010.00) c
DF5754  ELLIP H (06/??/19)   -5.208  (m)                         GP(2010.00) c c
DF5754  ELLIP H (06/27/12)   -5.202  (m)                         GP(2010.00) 0 0
DF5754  NAD 83(2011)-  30 24 26.70939(N)    091 10 48.91483(W)   AD(2010.00) c
DF5754  NAD 83(2011)-  30 24 26.70946(N)    091 10 48.91474(W)   AD(2010.00) c
DF5754  ELLIP H (08/??/11)   -5.211  (m)                         GP(2010.00) c c
DF5754  NAD 83(CORS)-  30 24 26.70936(N)    091 10 48.91529(W)   AD(2002.00) c
DF5754  ELLIP H (05/??/03)   -5.179  (m)                         GP(2002.00) c c
DF5754  NAVD 88 (03/01/07)   22.01   (m)  GEOID03  model used    GP(2004.65)
DF5754
DF5754.Superseded values are not recommended for survey control.
DF5754
DF5754.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DF5754.See file dsdata.pdf to determine how the superseded data were derived.
DF5754
DF5754_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DF5754
DF5754                           STATION DESCRIPTION
DF5754
DF5754'DESCRIBED BY NATIONAL GEODETIC SURVEY 2025
DF5754'THIS STATION IS PART OF THE NOAA CORS NETWORK (NCN).  LATEST INFORMATION
DF5754'INCLUDING POSITIONS AND VELOCITIES ARE AVAILABLE IN THE COORDINATE
DF5754'AND LOG FILES ACCESSIBLE AT:
```

```
 DF5754'https://geodesy.noaa.gov/CORS/index.shtml
1    National Geodetic Survey, Retrieval Date = APRIL 14, 2025 14:38:20 EDT
 AF9647 ***********************************************************************
 AF9647  HT_MOD      -  This is a Height Modernization Survey Station.
 AF9647  CORS        -  This is a GPS Continuously Operating Reference Station.
 AF9647  DESIGNATION -  GODDARD SFC CORS MONUMENT
 AF9647  CORS_ID     -  GODE
 AF9647  PID         -  AF9647
 AF9647  STATE/COUNTY-  MD/PRINCE GEORGES
 AF9647  COUNTRY     -  US
 AF9647  USGS QUAD   -  LAUREL (2016)
 AF9647
 AF9647                        *CURRENT SURVEY CONTROL
 AF9647  ______________________________________________________________________
 AF9647* NAD 83(2011) POSITION- 39 01 18.18970(N) 076 49 36.57471(W)   ADJUSTED
 AF9647* NAD 83(2011) ELLIP HT-    15.781 (meters)        (03/??/25)   ADJUSTED
 AF9647* NAD 83(2011) EPOCH    -  2010.00
 AF9647* NAVD 88 ORTHO HEIGHT -    48.20  (meters)      158.14   (ift) GPS OBS
 AF9647  ______________________________________________________________________
 AF9647  GEOID HEIGHT    -        -32.380 (meters)                     GEOID18
 AF9647  NAD 83(2011) X  -  1,130,774.428 (meters)                     COMP
 AF9647  NAD 83(2011) Y  - -4,831,255.023 (meters)                     COMP
 AF9647  NAD 83(2011) Z  -  3,994,200.517 (meters)                     COMP
 AF9647  LAPLACE CORR    -         -5.26  (seconds)                    DEFLEC18
 AF9647
 AF9647  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AF9647  Standards:
 AF9647         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AF9647            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
 AF9647  ------------------------------------------------------------------
 AF9647  NETWORK    0.04   0.08          0.01   0.02   0.04      0.02708000
 AF9647  ------------------------------------------------------------------
 AF9647
 AF9647.The horizontal coordinates were established by GPS observations
 AF9647.and adjusted by the National Geodetic Survey in March 2025.
 AF9647
 AF9647.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AF9647.been affixed to the stable North American Tectonic Plate.
 AF9647
 AF9647.The horizontal coordinates are valid at the epoch date displayed above
 AF9647.which is a decimal equivalence of Year/Month/Day.
 AF9647
 AF9647.NGS completed the third reprocessing of daily RINEX data from 1996 to 2022
 AF9647.for all stations in the NOAA CORS Network (NCN).  The reprocessed solution,
 AF9647.known as the Multi-Year CORS Solution 3 (MYCS3), is aligned with the
 AF9647.ITFR2020 global frame, epoch 2020.00.  The resulting MYCS3 coordinates
 AF9647.were then transformed to NAD83(2011/MA11/PA11), maintaining the currently
 AF9647.published epoch of 2010.00.
 AF9647
 AF9647.Additional information on MYCS is available at:
 AF9647.https://geodesy.noaa.gov/CORS/index.shtml
 AF9647
 AF9647.The orthometric height was determined by GPS observations and a
 AF9647.high-resolution geoid model using precise GPS observation and
 AF9647.processing techniques.
 AF9647
 AF9647.Significant digits in the geoid height do not necessarily reflect accuracy.
 AF9647.GEOID18 height accuracy estimate available here.
 AF9647
 AF9647.Click photographs - Photos may exist for this station.
 AF9647
 AF9647.The XYZ, and position/ellipsoidal ht. are equivalent.
 AF9647
 AF9647.The Laplace correction was computed from DEFLEC18 derived deflections.
 AF9647
 AF9647.The ellipsoidal height was determined by GPS observations
 AF9647.and is referenced to NAD 83.
 AF9647
 AF9647. The following values were computed from the NAD 83(2011) position.
 AF9647
 AF9647;                   Northing        Easting    Units Scale Factor  Convergence
```

```
AF9647;SPCS MD-1900   -    150,431.507    414,996.114     m   0.99995308 +00 06 31.28
AF9647;SPCS MD-1900   -    493,540.704  1,361,533.085   sft   0.99995308 +00 06 31.28
AF9647;SPCS MD-1900   -    493,541.691  1,361,535.808   ift   0.99995308 +00 06 31.28
AF9647;UTM Zone 18N   -  4,320,774.470    341,854.667     m   0.99990796 -01 09 01.57
AF9647
AF9647!                 Height Factor x Scale Factor = Combined Factor
AF9647!SPCS MD-1900   -    0.99999752 x   0.99995308 = 0.99995060
AF9647!UTM Zone 18N   -    0.99999752 x   0.99990796 = 0.99990548
AF9647
AF9647_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SUJ4185520774(NAD 83(2011))
AF9647
AF9647                           SUPERSEDED SURVEY CONTROL
AF9647
AF9647  NAD 83(2011)-  39 01 18.18970(N)    076 49 36.57472(W)   AD(2010.00) A
AF9647  ELLIP H (05/??/20)   15.784  (m)                          GP(2010.00) 4 1
AF9647  NAD 83(2011)-  39 01 18.18973(N)    076 49 36.57472(W)   AD(2010.00) A
AF9647  ELLIP H (06/??/19)   15.784  (m)                          GP(2010.00) 4 1
AF9647  NAD 83(2011)-  39 01 18.18974(N)    076 49 36.57468(W)   AD(2010.00) A
AF9647  ELLIP H (08/??/11)   15.784  (m)                          GP(2010.00) 4 1
AF9647  ELLIP H (02/10/07)   15.806  (m)                          GP(2002.00)
AF9647  NAD 83(2007)-  39 01 18.18995(N)    076 49 36.57530(W)   AD(2002.00) 0
AF9647  NAD 83(CORS)-  39 01 18.18995(N)    076 49 36.57530(W)   AD(2002.00) A
AF9647  ELLIP H (03/??/02)   15.806  (m)                          GP(2002.00) 4 1
AF9647  NAD 83(CORS)-  39 01 18.18994(N)    076 49 36.57545(W)   AD(1997.00) A
AF9647  ELLIP H (07/??/96)   15.805  (m)                          GP(1997.00) 4 1
AF9647  NAD 83(CORS)-  39 01 18.18999(N)    076 49 36.57543(W)   AD(1996.00) A
AF9647  ELLIP H (07/??/96)   15.806  (m)                          GP(1996.00) 4 1
AF9647  NAD 83(CORS)-  39 01 18.18994(N)    076 49 36.57545(W)   AD(1997.00) A
AF9647  ELLIP H (07/??/95)   15.805  (m)                          GP(1997.00) 4 1
AF9647  NAVD 88 (06/21/22)   48.1    (m)  UNKNOWN  model used    GPS OBS
AF9647  NAVD 88 (02/12/02)   48.17   (m)  GEOID99  model used    GPS OBS
AF9647  NAVD 88 (08/03/00)   48.2    (m)  GEOID99  model used    GPS OBS
AF9647
AF9647.Superseded values are not recommended for survey control.
AF9647
AF9647.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AF9647.See file dsdata.pdf to determine how the superseded data were derived.
AF9647
AF9647_STAMPING: UNKNOWN
AF9647
AF9647  HISTORY     - Date     Condition        Report By
AF9647  HISTORY     - UNK      MONUMENTED       JPL
AF9647
AF9647                           STATION DESCRIPTION
AF9647
AF9647'THIS MONUMENT IS ASSOCIATED WITH STATION 'GODE'
AF9647'AND IS A PART OF THE NOAA CORS NETWORK (NCN). LATEST INFORMATION
AF9647'INCLUDING POSITIONS AND VEOCITIES ARE AVAILABLE IN THE COORDINATE
AF9647'AND LOG FILES ACCESSIBLE AT:
AF9647'https://geodesy.noaa.gov/CORS/index.shtml
AF9647'RECOVERED AS DESCRIBED.
1    National Geodetic Survey, Retrieval Date = APRIL 14, 2025 14:38:20 EDT
AF9497 ***********************************************************************
AF9497  CORS        -  This is a GPS Continuously Operating Reference Station.
AF9497  DESIGNATION -  ST. LOUIS 2 CORS ARP
AF9497  CORS_ID     -  STL2
AF9497  PID         -  AF9497
AF9497  STATE/COUNTY-  IL/ST CLAIR
AF9497  COUNTRY     -  US
AF9497  USGS QUAD   -  LEBANON (2018)
AF9497
AF9497                          *CURRENT SURVEY CONTROL
AF9497 ______________________________________________________________________
AF9497* NAD 83(2011) POSITION- 38 36 40.70867(N) 089 45 32.02537(W)   ADJUSTED
AF9497* NAD 83(2011) ELLIP HT-   166.657 (meters)        (06/??/19)   ADJUSTED
AF9497* NAD 83(2011) EPOCH    -  2010.00
AF9497 ______________________________________________________________________
AF9497  GEOID HEIGHT    -        -30.687 (meters)                    GEOID18
AF9497  NAD 83(2011) X  -     21,000.254 (meters)                    COMP
AF9497  NAD 83(2011) Y  - -4,990,454.221 (meters)                    COMP
AF9497  NAD 83(2011) Z  -  3,958,795.796 (meters)                    COMP
```

```
AF9497
AF9497.Formal positional accuracy estimates are not available for this CORS
AF9497.because its coordinates were determined in part using modeled velocities.
AF9497.A time-series residual plot is available that shows daily coordinate
AF9497.variations relative to the published coordinates and modeled velocities.
AF9497.Large residuals may indicate a potential error in the modeled velocities.
AF9497
AF9497.Residual plot at:
AF9497.https://geodesy.noaa.gov/CORS/ncn station pages/index.html?stationID=STL2.
AF9497
AF9497.The coordinates were established by GPS observations
AF9497.and adjusted by the National Geodetic Survey in June 2019.
AF9497
AF9497.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AF9497.been affixed to the stable North American Tectonic Plate.
AF9497
AF9497.The coordinates are valid at the epoch date displayed above
AF9497.which is a decimal equivalence of Year/Month/Day.
AF9497
AF9497.NGS completed the third reprocessing of daily RINEX data from 1996 to 2022
AF9497.for all stations in the NOAA CORS Network (NCN).  The reprocessed solution,
AF9497.known as the Multi-Year CORS Solution 3 (MYCS3), is aligned with the
AF9497.ITFR2020 global frame, epoch 2020.00.  The resulting MYCS3 coordinates
AF9497.were then transformed to NAD83(2011/MA11/PA11), maintaining the currently
AF9497.published epoch of 2010.00.
AF9497
AF9497.Additional information on MYCS is available at:
AF9497.https://geodesy.noaa.gov/CORS/index.shtml
AF9497
AF9497.Significant digits in the geoid height do not necessarily reflect accuracy.
AF9497.GEOID18 height accuracy estimate available here.
AF9497
AF9497.The PID for the CORS L1 Phase Center is DH9199.
AF9497
AF9497.Click photographs - Photos may exist for this station.
AF9497
AF9497.The XYZ, and position/ellipsoidal ht. are equivalent.
AF9497
AF9497.The ellipsoidal height was determined by GPS observations
AF9497.and is referenced to NAD 83.
AF9497
AF9497. The following values were computed from the NAD 83(2011) position.
AF9497
AF9497;                     Northing         Easting     Units Scale Factor  Convergence
AF9497;SPCS IL W-1202 -     215,901.291     735,514.138      m   0.99995670 +00 15 16.08
AF9497;SPCS IL W-1202 -     708,336.154   2,413,099.301    sft   0.99995670 +00 15 16.08
AF9497;SPCS IL W-1202 -     708,337.570   2,413,104.127    ift   0.99995670 +00 15 16.08
AF9497;UTM Zone 16N   -   4,277,255.119     259,780.082      m   1.00031068 -01 43 20.88
AF9497
AF9497!                 Height Factor x Scale Factor = Combined Factor
AF9497!SPCS IL W-1202 -     0.99997385 x   0.99995670 = 0.99993055
AF9497!UTM Zone 16N   -     0.99997385 x   1.00031068 = 1.00028452
AF9497
AF9497_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBH5978077255(NAD 83(2011))
AF9497
AF9497                            SUPERSEDED SURVEY CONTROL
AF9497
AF9497  NAD 83(2011)-  38 36 40.70862(N)     089 45 32.02548(W)    AD(2010.00) c
AF9497  ELLIP H (08/??/11)  166.670  (m)                           GP(2010.00) c c
AF9497  NAD 83(CORS)-  38 36 40.71097(N)     089 45 32.02271(W)    AD(2002.00) c
AF9497  ELLIP H (03/??/02)  166.506  (m)                           GP(2002.00) c c
AF9497  NAD 83(CORS)-  38 36 40.70829(N)     089 45 32.02619(W)    AD(1996.00) c
AF9497  ELLIP H (04/??/96)  166.685  (m)                           GP(1996.00) c c
AF9497
AF9497.Superseded values are not recommended for survey control.
AF9497
AF9497.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AF9497.See file dsdata.pdf to determine how the superseded data were derived.
AF9497
AF9497_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
AF9497
```

```
AF9497                          STATION DESCRIPTION
AF9497
AF9497'DESCRIBED BY NATIONAL GEODETIC SURVEY 2019
AF9497'THIS STATION IS PART OF THE NOAA CORS NETWORK (NCN).  LATEST INFORMATION
AF9497'INCLUDING POSITIONS AND VELOCITIES ARE AVAILABLE IN THE COORDINATE
AF9497'AND LOG FILES ACCESSIBLE AT:
AF9497'https://geodesy.noaa.gov/CORS/index.shtml
```

Version 8.12.5.19 updated on 07/03/2024

In this version there are 3 changes to datasheets,

Change #1:

The messages displayed on datasheets for the datum origin points of:

DG3988
DK3427
DK7165
DL3636
DL3908
DL6026
DL6323
DN8535
DN8596
DN8624
HT2113
JU0313
KV0008
SY1559
TU0291
TV1513
TW0041

were updated. Their old datum origin point messages are shown in yellow and their new ones in gree below:

```
DG3988.This bench mark was chosen by the National Geodetic Survey (NGS) to
DG3988.serve as the datum origin point for the Northern Marianas Vertical
DG3988.Datum of 2003 (NMVD03). The NMVD03 height for thispoint was adopted by
DG3988.NGS to be exactly 1.657 meters which is identical to the LMSL height of
DG3988.this bench mark for National Tidal Datum 1983-2001 as determined by
DG3988.Center for Operational Oceanographics Products and Services (CO-OPS) in
DG3988.April 2003.

DG3988.The datum origin mark is the primary tidal bench mark designated '163
DG3988.3227 TIDAL UH-2C' that is identified by 'VM# 16316' by the NOS Center
DG3988.for Operational Oceanographic Products and Services (CO-OPS). The mark
DG3988.is found along Tanapag Harbor on Saipan, Northern Marianas as part of
DG3988.the National Water Levels Observation Network (NWLON) designated
DG3988.1633227. Its Local Mean Sea Level (LMSL) height of 2.170 meters
DG3988.originated from the 1983-2001 National Tidal Datum Epoch (NTDE) using
DG3988.control station 1630000 situated in Apra Harbor, Guam from October 2000
DG3988.to February 2001. The National Geodetic Survey (NGS) then adopted this
DG3988.primary tidal bench mark's datum point as the origin of the Northern
DG3988.Marianas Vertical Datum of 2003 (NMVD03) for the island Saipan, from
DG3988.which all heights on the island originate.

DK3427.This bench mark was chosen by the National Geodetic Survey (NGS) to
DK3427.serve as the datum origin point for the island of Maui leveling done
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DK3427.between October 2017 and January 2019. The height of this point was
DK3427.adopted by NGS to be exactly 1.461 meters which is identical to the
DK3427.LMSL height of this benchmark for the National Tidal Datum 1983-2001 as
DK3427.determined by the Center for Operational Oceanographics Products and
DK3427.Services (CO-OPS) in December 2017.

DK3427.The datum origin mark is the tidal bench mark designated '161 5680 C
DK3427.TIDAL' that is identified by 'VM# 1485' by NOS Center for Operational
DK3427.Oceanographic Products and Services (CO-OPS). The mark is found in
DK3427.Kahului near Kahului Harbor on the island of Maui, Hawaii as part of
DK3427.the National Water Levels Observation Network (NWLON) designated
DK3427.1615680. The Local Mean Sea Level (LMSL) height of 1.461 meters for
DK3427.this mark originated from the 1983-2001 National Tidal Datum Epoch
DK3427.(NTDE) in December 2017. NGS adopted the marks LMSL height as the datum
DK3427.origin point for the island of Maui, from which all LMSL heights on the
DK3427.island originate.

DK7165.This bench mark was chosen by the National Geodetic Survey (NGS) to
DK7165.serve as the datum origin point for the Virgin Island Vertical Datum of
DK7165.2009 (VIVD09) as realized on the island of St. Croix. The VIVD09 height
DK7165.for this point was adopted by NGS to be exactly 3.111 meters which is
DK7165.identical to the LMSL height of this bench mark for National Tidal
DK7165.Datum 1983-2001 as determined by Center for Operational Oceanographics
DK7165.Products and Services (CO-OPS) in April 2003.

DK3427.The datum origin mark is the tidal bench mark designated '161 5680 C
DK3427.TIDAL' that is identified by 'VM# 1485' by NOS Center for Operational
DK3427.Oceanographic Products and Services (CO-OPS). The mark is found in
DK3427.Kahului near Kahului Harbor on the island of Maui, Hawaii as part of
DK3427.the National Water Levels Observation Network (NWLON) designated
DK3427.1615680. The Local Mean Sea Level (LMSL) height of 1.461 meters for
DK3427.this mark originated from the 1983-2001 National Tidal Datum Epoch
DK3427.(NTDE) in December 2017. NGS adopted the marks LMSL height as the datum
DK3427.origin point for the island of Maui, from which all LMSL heights on the
DK3427.island originate.

DL3636.This bench mark was chosen by the National Geodetic Survey (NGS) to
DL3636.serve as the datum origin point for the Virgin Island Vertical Datum of
DL3636.2009 (VIVD09) as realized on the island of St. John. The VIVD09 height
DL3636.for this point was adopted by NGS to be exactly 1.079 meters which is
DL3636.identical to the LMSL height of this bench mark for National Tidal
DL3636.Datum 1983-2001 as determined by Center for Operational Oceanographics
DL3636.Products and Services (CO-OPS) in April 2003.

DL3636.The datum origin mark is the primary tidal bench mark designated '975
DL3636.1381 A' that is identified by 'VM# 18179' by NOS Center for Operational
DL3636.Oceanographic Products and Services (CO-OPS). The mark is found along
DL3636.Lameshur Bay on St. John Island in the U.S. Virgin Islands as part of
DL3636.the National Water Levels Observation Network (NWLON) designated
DL3636.9751381. The Local Mean Sea Level (LMSL) height of 1.079 meters for
DL3636.this mark originated from the 1983-2001 National Tidal Datum Epoch
DL3636.(NTDE) in April 2003. NGS adopted the mark's LMSL height as the datum
DL3636.origin point for the United States Virgin Islands Vertical Datum
DL3636.(VIVD09) on the island of St. John, from which all heights on the
DL3636.island originate.

DL3908.This bench mark was chosen by the National Geodetic Survey (NGS) to
DL3908.serve as the datum origin point for the Virgin Island Vertical Datum of
DL3908.2009 (VIVD09) as realized on the island of St. Thomas. The VIVD09
DL3908.height for this point was adopted by NGS to be exactly 1.552 meters
DL3908.which is identical to the LMSL height of this bench mark for National
DL3908.Tidal Datum 1983-2001 as determined by Center for Operational

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DL3908.Oceanographics Products and Services (CO-OPS) in April 2003.

DL3908.The datum origin mark is the primary tidal bench mark designated '975
DL3908.1639 F' that is identified by 'VM# 1372' by NOS Center for Operational
DL3908.Oceanographic Products and Services (CO-OPS). The mark is found along
DL3908.Long Bay, in Charlotte Amalie on St. Thomas in U.S. Virgin Islands as
DL3908.part of the National Water Levels Observation Network (NWLON)
DL3908.designated 9751639. The Local Mean Sea Level (LMSL) height of 1.552
DL3908.meters for this mark originated from the 1983-2001 National Tidal Datum
DL3908.Epoch (NTDE) in April 2003. NGS adopted the mark's LMSL height as the
DL3908.datum origin point for the United States Virgin Islands Vertical Datum
DL3908.(VIVD09) on the island of Thomas, from which all heights on the island
DL3908.originate.

TV1513.This bench mark was chosen by the National Geodetic Survey (NGS) to
TV1513.serve as the datum origin point for the Puerto Rico Vertical Datum of
TV1513.2002 (PRVD02). The PRVD02 height for this point was adopted by NGS to
TV1513.be exactly 1.334 meters which is identical to the LMSL height of this
TV1513.bench mark for National Tidal Datum 1960-1978 as determined by Center
TV1513.for Operational Oceanographics Products and Services (CO-OPS) in
TV1513.November 2002.

TV1513.The datum origin mark is the primary tidal bench mark designated '975
TV1513.5371 A TIDAL' that is identified by 'VM# 1386' by NOS Center for
TV1513.Operational Oceanographic Products and Services (CO-OPS). The mark is
TV1513.found in San Juan along Bahia de San Juan, Puerto Rico as part of the
TV1513.National Water Levels Observation Network (NWLON) designated 9755371.
TV1513.The Local Mean Sea Level (LMSL) height of 1.334 meters for this mark
TV1513.originated from the tidal epoch from 1/1/1990 to 12/31/2001. See USC+GS
TV1513.SPECIAL PUBLICATION 240. NGS adopted the mark's LMSL height as the
TV1513.datum origin point for the Puerto Rico Vertical Datum (PRVD02) on the
TV1513.island of Puerto Rico, from which all heights on the island originate.
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Change #2:

The following control points are now datum origin points:

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DG4014
DL6026
DN8535
DN8596
DN8624
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Previously, you would have seen the datasheets below (partial datasheets shown):

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:17 EDT
 DG4014 ***********************************************************************
 DG4014  DESIGNATION -  TIDAL 3
 DG4014  PID         -  DG4014
 DG4014  STATE/COUNTY-  CQ/ROTA
 DG4014  COUNTRY     -  US
 DG4014  USGS QUAD   -
 DG4014
 DG4014                         *CURRENT SURVEY CONTROL
 DG4014 ______________________________________________________________________
 DG4014* NAD 83(MA11) POSITION- 14 08 22.24743(N) 214 51 21.15125(W)   ADJUSTED
 DG4014* NAD 83(MA11) ELLIP HT-    56.274 (meters)        (06/27/12)   ADJUSTED
 DG4014* NAD 83(MA11) EPOCH    -  2010.00
 DG4014* NMVD03  ORTHO HEIGHT -     1.482 (meters)        4.86  (feet) ADJUSTED
 DG4014 ______________________________________________________________________
 DG4014  GEOID HEIGHT    -         54.777 (meters)                     GEOID12B
 DG4014  NAD 83(MA11) X  - -5,076,342.778 (meters)                     COMP
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 DG4014  NAD 83(MA11) Y  -  3,535,496.953 (meters)                    COMP
 DG4014  NAD 83(MA11) Z  -  1,547,968.236 (meters)                    COMP
 DG4014  LAPLACE CORR    -         -0.59  (seconds)                   DEFLEC12B
 DG4014  VERT ORDER      -  FIRST     CLASS II
 DG4014
 DG4014  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DG4014  Standards:
 DG4014         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DG4014            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DG4014  ------------------------------------------------------------------
 DG4014  NETWORK    0.94   1.90           0.37   0.40   0.97      0.01644652
 DG4014  ------------------------------------------------------------------
 DG4014  Click here for local accuracies and other accuracy information.
 DG4014
 DG4014.The horizontal coordinates were established by GPS observations
 DG4014.and adjusted by the National Geodetic Survey in June 2012.
 DG4014
 DG4014.NAD 83(MA11) refers to NAD 83 coordinates where the reference frame has
 DG4014.been affixed to the stable Mariana tectonic plate.
 DG4014
 DG4014.The horizontal coordinates are valid at the epoch date displayed above
 DG4014.which is a decimal equivalence of Year/Month/Day.
 DG4014
 DG4014.The orthometric height was determined by differential leveling and
 DG4014.adjusted by the CEN OPER OCEANOG PROD+SVCS
 DG4014.in March 2004.
 DG4014
 DG4014.Significant digits in the geoid height do not necessarily reflect accuracy.
 DG4014.GEOID12B height accuracy estimate available here.
 DG4014

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:17 EDT
 DL6026 ***********************************************************************
 DL6026  TIDAL BM    -  This is a Tidal Bench Mark.
 DL6026  DESIGNATION -  161 1400 F
 DL6026  PID         -  DL6026
 DL6026  STATE/COUNTY-  HI/KAUAI
 DL6026  COUNTRY     -  US
 DL6026  USGS QUAD   -  LIHUE (2017)
 DL6026
 DL6026                        *CURRENT SURVEY CONTROL
 DL6026 _______________________________________________________________________
 DL6026* NAD 83(PA11) POSITION- 21 57 10.98953(N) 159 21 10.42506(W)   ADJUSTED
 DL6026* NAD 83(PA11) ELLIP HT-    18.081 (meters)        (06/27/12)   ADJUSTED
 DL6026* NAD 83(PA11) EPOCH   -  2010.00
 DL6026* LMSL    ORTHO HEIGHT -     2.31  (meters)        7.6   (feet) LEVELING
 DL6026 _______________________________________________________________________
 DL6026  GEOID HEIGHT    -         14.943 (meters)                    GEOID12B
 DL6026  NAD 83(PA11) X  - -5,538,305.416 (meters)                    COMP
 DL6026  NAD 83(PA11) Y  - -2,086,910.202 (meters)                    COMP
 DL6026  NAD 83(PA11) Z  -  2,369,598.912 (meters)                    COMP
 DL6026  LAPLACE CORR    -        -13.28  (seconds)                   DEFLEC12B
 DL6026  VERT ORDER      -  THIRD
 DL6026
 DL6026  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DL6026  Standards:
 DL6026         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DL6026            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DL6026  ------------------------------------------------------------------
 DL6026  NETWORK    1.81   2.12           0.68   0.79   1.08     -0.00619990
 DL6026  ------------------------------------------------------------------
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 DL6026  Click here for local accuracies and other accuracy information.
 DL6026
 DL6026.The horizontal coordinates were established by GPS observations
 DL6026.and adjusted by the National Geodetic Survey in June 2012.
 DL6026
 DL6026.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
 DL6026.been affixed to the stable Pacific tectonic plate.
 DL6026
 DL6026.The horizontal coordinates are valid at the epoch date displayed above
 DL6026.which is a decimal equivalence of Year/Month/Day.
 DL6026
 DL6026.The orthometric height was determined by differential leveling.
 DL6026.The vertical network tie was performed by a horz. field party for horz.
 DL6026.obs reductions. Reset procedures were used to establish the elevation.
 DL6026
 DL6026.Significant digits in the geoid height do not necessarily reflect accuracy.
 DL6026.GEOID12B height accuracy estimate available here.
 DL6026
 DL6026.This Tidal Bench Mark is designated as VM 20
 DL6026.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:17 EDT
 DN8535 ***********************************************************************
 DN8535  TIDAL BM    -  This is a Tidal Bench Mark.
 DN8535  DESIGNATION -  975 2695 A
 DN8535  PID         -  DN8535
 DN8535  STATE/COUNTY-  PR/VIEQUES
 DN8535  COUNTRY     -  US
 DN8535  USGS QUAD   -  ISLA DE VIEQUES CENTRAL OE S (2018)
 DN8535
 DN8535                        *CURRENT SURVEY CONTROL
 DN8535 ______________________________________________________________________
 DN8535* NAD 83(1986) POSITION- 18 05 37.87   (N) 065 28 16.89   (W)   HD_HELD1
 DN8535* PRVD02  ORTHO HEIGHT -     1.962 (meters)        6.44  (feet) ADJUSTED
 DN8535 ______________________________________________________________________
 DN8535  GEOID HEIGHT    -        -41.764 (meters)                     GEOID18
 DN8535  VERT ORDER      -  FIRST     CLASS II
 DN8535
 DN8535.The horizontal coordinates were determined by differentially corrected
 DN8535.hand held GPS observations or other comparable positioning techniques
 DN8535.and have an estimated accuracy of +/- 3 meters.
 DN8535
 DN8535.The orthometric height was determined by differential leveling and
 DN8535.adjusted by the NATIONAL GEODETIC SURVEY
 DN8535.in September 2013.
 DN8535
 DN8535.No vertical observational check was made to the station.
 DN8535
 DN8535.Significant digits in the geoid height do not necessarily reflect accuracy.
 DN8535.GEOID18 height accuracy estimate available here.
 DN8535
 DN8535.This Tidal Bench Mark is designated as VM 17949
 DN8535.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:17 EDT
 DN8596 ***********************************************************************
 DN8596  TIDAL BM    -  This is a Tidal Bench Mark.
 DN8596  DESIGNATION -  975 9938 A
 DN8596  PID         -  DN8596
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 DN8596  STATE/COUNTY-  PR/MAYAGUEZ
 DN8596  COUNTRY     -  US
 DN8596  USGS QUAD   -  ISLA DE MONA (2018)
 DN8596
 DN8596                        *CURRENT SURVEY CONTROL
 DN8596 ______________________________________________________________________
 DN8596* NAD 83(1986) POSITION- 18 05 21.73   (N) 067 56 18.04   (W)   HD_HELD1
 DN8596* PRVD02  ORTHO HEIGHT -     1.158 (meters)        3.80  (feet) ADJUSTED
 DN8596 ______________________________________________________________________
 DN8596  GEOID HEIGHT    -        -41.866 (meters)                     GEOID18
 DN8596  VERT ORDER      -  FIRST     CLASS II
 DN8596
 DN8596.The horizontal coordinates were determined by differentially corrected
 DN8596.hand held GPS observations or other comparable positioning techniques
 DN8596.and have an estimated accuracy of +/- 3 meters.
 DN8596
 DN8596.The orthometric height was determined by differential leveling and
 DN8596.adjusted by the NATIONAL GEODETIC SURVEY
 DN8596.in September 2013.
 DN8596
 DN8596.No vertical observational check was made to the station.
 DN8596
 DN8596.Significant digits in the geoid height do not necessarily reflect accuracy.
 DN8596.GEOID18 height accuracy estimate available here.
 DN8596
 DN8596.This Tidal Bench Mark is designated as VM 18192
 DN8596.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:17 EDT
 DN8624 ***********************************************************************
 DN8624  TIDAL BM    -  This is a Tidal Bench Mark.
 DN8624  DESIGNATION -  975 2235 D
 DN8624  PID         -  DN8624
 DN8624  STATE/COUNTY-  PR/CULEBRA
 DN8624  COUNTRY     -  US
 DN8624  USGS QUAD   -  CULEBRA (2018)
 DN8624
 DN8624                        *CURRENT SURVEY CONTROL
 DN8624 ______________________________________________________________________
 DN8624* NAD 83(1986) POSITION- 18 18 03.92   (N) 065 18 08.81   (W)   HD_HELD1
 DN8624* PRVD02  ORTHO HEIGHT -     0.973 (meters)        3.19  (feet) ADJUSTED
 DN8624 ______________________________________________________________________
 DN8624  GEOID HEIGHT    -        -41.867 (meters)                     GEOID18
 DN8624  VERT ORDER      -  FIRST     CLASS II
 DN8624
 DN8624.The horizontal coordinates were determined by differentially corrected
 DN8624.hand held GPS observations or other comparable positioning techniques
 DN8624.and have an estimated accuracy of +/- 3 meters.
 DN8624
 DN8624.The orthometric height was determined by differential leveling and
 DN8624.adjusted by the NATIONAL GEODETIC SURVEY
 DN8624.in September 2013.
 DN8624
 DN8624.No vertical observational check was made to the station.
 DN8624
 DN8624.Significant digits in the geoid height do not necessarily reflect accuracy.
 DN8624.GEOID18 height accuracy estimate available here.
 DN8624
 DN8624.This Tidal Bench Mark is designated as VM 17958
 DN8624.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
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Now you will see the datasheets below (partial datasheets shown):

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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:00 EDT
 DG4014 ***********************************************************************
 DG4014  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 DG4014  DESIGNATION -  TIDAL 3
 DG4014  PID         -  DG4014
 DG4014  STATE/COUNTY-  CQ/ROTA
 DG4014  COUNTRY     -  US
 DG4014  USGS QUAD   -
 DG4014
 DG4014                         *CURRENT SURVEY CONTROL
 DG4014 ______________________________________________________________________
 DG4014* NAD 83(MA11) POSITION- 14 08 22.24743(N) 214 51 21.15125(W)   ADJUSTED
 DG4014* NAD 83(MA11) ELLIP HT-    56.274 (meters)        (06/27/12)   ADJUSTED
 DG4014* NAD 83(MA11) EPOCH   -  2010.00
 DG4014* NMVD03  ORTHO HEIGHT -     1.482 (meters)        4.86  (feet) ADJUSTED
 DG4014 ______________________________________________________________________
 DG4014  GEOID HEIGHT    -         54.777 (meters)                     GEOID12B
 DG4014  NAD 83(MA11) X  - -5,076,342.778 (meters)                     COMP
 DG4014  NAD 83(MA11) Y  -  3,535,496.953 (meters)                     COMP
 DG4014  NAD 83(MA11) Z  -  1,547,968.236 (meters)                     COMP
 DG4014  LAPLACE CORR    -         -0.59  (seconds)                    DEFLEC12B
 DG4014  VERT ORDER      -  FIRST     CLASS II
 DG4014
 DG4014  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DG4014  Standards:
 DG4014         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 DG4014            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DG4014  ------------------------------------------------------------------
 DG4014  NETWORK    0.94   1.90           0.37   0.40   0.97      0.01644652
 DG4014  ------------------------------------------------------------------
 DG4014  Click here for local accuracies and other accuracy information.
 DG4014
 DG4014.The horizontal coordinates were established by GPS observations
 DG4014.and adjusted by the National Geodetic Survey in June 2012.
 DG4014
 DG4014.NAD 83(MA11) refers to NAD 83 coordinates where the reference frame has
 DG4014.been affixed to the stable Mariana tectonic plate.
 DG4014
 DG4014.The horizontal coordinates are valid at the epoch date displayed above
 DG4014.which is a decimal equivalence of Year/Month/Day.
 DG4014
 DG4014.The orthometric height was determined by differential leveling and
 DG4014.adjusted by the CEN OPER OCEANOG PROD+SVCS
 DG4014.in March 2004.
 DG4014
 DG4014.Significant digits in the geoid height do not necessarily reflect accuracy.
 DG4014.GEOID12B height accuracy estimate available here.
 DG4014
 DG4014.The datum origin mark is the tidal bench mark stamped 'TIDAL MK 3 1969'
 DG4014.that is identified by the NOS Center for Operational Oceanographic
 DG4014.Products and Services (CO-OPS). The mark is found on Rota Island,
 DG4014.Northern Marianas as part of the National Water Levels Observation
 DG4014.Network (NWLON) designated TPT2627. The Local Mean Sea Level (LMSL)
 DG4014.height of 1.482 meters for this mark originated from tidal observation
 DG4014.from February to April of 1969, plus a sea level rise correction from
 DG4014.1969 to 2004. The National Geodetic Survey (NGS) designates this mark
 DG4014.as 'TIDAL 3' and adopted its corrected LMSL height as the datum origin
 DG4014.point for the Northern Marianas Vertical Datum (NMVD03) for Rota
 DG4014.Island, from which all heights on the island originate.
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1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:00 EDT
 DL6026 ***********************************************************************
 DL6026  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 DL6026  TIDAL BM    -  This is a Tidal Bench Mark.
 DL6026  DESIGNATION -  161 1400 F
 DL6026  PID         -  DL6026
 DL6026  STATE/COUNTY-  HI/KAUAI
 DL6026  COUNTRY     -  US
 DL6026  USGS QUAD   -  LIHUE (2017)
 DL6026
 DL6026                         *CURRENT SURVEY CONTROL
 DL6026 ______________________________________________________________________
 DL6026* NAD 83(PA11) POSITION- 21 57 10.98953(N) 159 21 10.42506(W)   ADJUSTED
 DL6026* NAD 83(PA11) ELLIP HT-    18.081 (meters)        (06/27/12)   ADJUSTED
 DL6026* NAD 83(PA11) EPOCH    -  2010.00
 DL6026* LMSL    ORTHO HEIGHT -     2.311 (meters)        7.58  (feet) ADJUSTED
 DL6026 ______________________________________________________________________
 DL6026  GEOID HEIGHT    -         14.943 (meters)                     GEOID12B
 DL6026  NAD 83(PA11) X  - -5,538,305.416 (meters)                     COMP
 DL6026  NAD 83(PA11) Y  - -2,086,910.202 (meters)                     COMP
 DL6026  NAD 83(PA11) Z  -  2,369,598.912 (meters)                     COMP
 DL6026  LAPLACE CORR    -        -13.28  (seconds)                    DEFLEC12B
 DL6026  VERT ORDER      -  SECOND    CLASS I
 DL6026
 DL6026  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DL6026  Standards:
 DL6026         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 DL6026            Horiz  Ellip          SD_N   SD_E   SD_h       (unitless)
 DL6026  ------------------------------------------------------------------
 DL6026  NETWORK    1.81   2.12          0.68   0.79   1.08     -0.00619990
 DL6026  ------------------------------------------------------------------
 DL6026  Click here for local accuracies and other accuracy information.
 DL6026
 DL6026.The horizontal coordinates were established by GPS observations
 DL6026.and adjusted by the National Geodetic Survey in June 2012.
 DL6026
 DL6026.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
 DL6026.been affixed to the stable Pacific tectonic plate.
 DL6026
 DL6026.The horizontal coordinates are valid at the epoch date displayed above
 DL6026.which is a decimal equivalence of Year/Month/Day.
 DL6026
 DL6026.The elevation of 161 1400 F was held fixed to the tidal elevation
 DL6026.of 2.311 meters computed from NOAA's for Operational Oceanographic
 DL6026.Products and Services (CO-OPS) bench mark sheet for current tidal
 DL6026.epoch (January 1983 - December 2001)
 DL6026
 DL6026.Significant digits in the geoid height do not necessarily reflect accuracy.
 DL6026.GEOID12B height accuracy estimate available here.
 DL6026
 DL6026.This bench mark was chosen by the National Geodetic Survey (NGS) to
 DL6026.serve as the datum origin point for the island of Kauai leveling done
 DL6026.between June 2022 and July 2023. The height of this point was adopted
 DL6026.by NGS to be exactly 2.311 meters which is identical to the LMSL height
 DL6026.of this benchmark for the National Tidal Datum 1983-2001 as determined
 DL6026.by the Center for Operational Oceanographic Products and Services
 DL6026.(CO-OPS) in September 2023.
 DL6026
 DL6026.Information on the Tidal Bench Mark designated as VM 20 and its datum origin
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DL6026.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.

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1 National Geodetic Survey, Retrieval Date = JUNE 6, 2024 10:52:00 EDT
DN8535 **
DN8535 DATUM ORIG - This is a Vertical Datum Origin Point.
DN8535 TIDAL BM - This is a Tidal Bench Mark.
DN8535 DESIGNATION - 975 2695 A
DN8535 PID - DN8535
DN8535 STATE/COUNTY- PR/VIEQUES
DN8535 COUNTRY - US
DN8535 USGS QUAD - ISLA DE VIEQUES CENTRAL OE S (2018)
DN8535
DN8535 *CURRENT SURVEY CONTROL
DN8535 ____
DN8535* NAD 83(1986) POSITION- 18 05 37.87 (N) 065 28 16.89 (W) HD_HELD1
DN8535* PRVD02 ORTHO HEIGHT - 1.962 (meters) 6.44 (feet) ADJUSTED
DN8535 ____
DN8535 GEOID HEIGHT - -41.764 (meters) GEOID18
DN8535 VERT ORDER - FIRST CLASS II
DN8535
DN8535.The horizontal coordinates were determined by differentially corrected
DN8535.hand held GPS observations or other comparable positioning techniques
DN8535.and have an estimated accuracy of +/- 3 meters.
DN8535
DN8535.The orthometric height was determined by differential leveling and
DN8535.adjusted by the NATIONAL GEODETIC SURVEY
DN8535.in September 2013.
DN8535
DN8535.No vertical observational check was made to the station.
DN8535
DN8535.Significant digits in the geoid height do not necessarily reflect accuracy.
DN8535.GEOID18 height accuracy estimate available here.
DN8535
DN8535.The datum origin mark is the primary tidal bench mark designated '975
DN8535.2695 A' that is identified by 'VM# 17949' by NOS Center for Operational
DN8535.Oceanographic Products and Services (CO-OPS). The mark is found in
DN8535.Esperanza on Isla de Vieques, Puerto Rico as part of the National Water
DN8535.Levels Observation Network (NWLON) designated 9752695. The Local Mean
DN8535.Sea Level (LMSL) height of 1.962 meters for this mark originated from
DN8535.the 1983-2001 National Tidal Datum Epoch (NTDE). NGS adopted the mark's
DN8535.LMSL height as the datum origin point for the Puerto Rico Vertical
DN8535.Datum (PRVD02) on Isla de Vieques, from which all heights on the island
DN8535.originate.

. . .

1 National Geodetic Survey, Retrieval Date = JUNE 6, 2024 10:52:00 EDT
DN8596 **
DN8596 DATUM ORIG - This is a Vertical Datum Origin Point.
DN8596 TIDAL BM - This is a Tidal Bench Mark.
DN8596 DESIGNATION - 975 9938 A
DN8596 PID - DN8596
DN8596 STATE/COUNTY- PR/MAYAGUEZ
DN8596 COUNTRY - US
DN8596 USGS QUAD - ISLA DE MONA (2018)
DN8596
DN8596 *CURRENT SURVEY CONTROL
DN8596 ____
DN8596* NAD 83(1986) POSITION- 18 05 21.73 (N) 067 56 18.04 (W) HD_HELD1
DN8596* PRVD02 ORTHO HEIGHT - 1.158 (meters) 3.80 (feet) ADJUSTED

```
 DN8596  _____________________________________________________________________
 DN8596  GEOID HEIGHT    -        -41.866 (meters)                      GEOID18
 DN8596  VERT ORDER      -  FIRST     CLASS II
 DN8596
 DN8596.The horizontal coordinates were determined by differentially corrected
 DN8596.hand held GPS observations or other comparable positioning techniques
 DN8596.and have an estimated accuracy of +/- 3 meters.
 DN8596
 DN8596.The orthometric height was determined by differential leveling and
 DN8596.adjusted by the NATIONAL GEODETIC SURVEY
 DN8596.in September 2013.
 DN8596
 DN8596.No vertical observational check was made to the station.
 DN8596
 DN8596.Significant digits in the geoid height do not necessarily reflect accuracy.
 DN8596.GEOID18 height accuracy estimate available here.
 DN8596
 DN8596.The datum origin mark is the primary tidal bench mark designated '975
 DN8596.9938 A' that is identified by 'VM# 18192' by NOS Center for Operational
 DN8596.Oceanographic Products and Services (CO-OPS). The mark is found
 DN8596.northeast of Punta Arenas on Isla de Mona, Puerto Rico as part of the
 DN8596.National Water Levels Observation Network (NWLON) designated 9759938.
 DN8596.The Local Mean Sea Level (LMSL) height of 1.158 meters for this mark
 DN8596.originated from the 1983-2001 National Tidal Datum Epoch (NTDE). NGS
 DN8596.adopted the mark's LMSL height as the datum origin point for the Puerto
 DN8596.Rico Vertical Datum (PRVD02) on Isla de Mona, from which all heights on
 DN8596.the island originate.
 DN8596
 DN8596.Information on the Tidal Bench Mark designated as VM 18192 and its datum
origin
 DN8596.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND
SERVICES.

. . .

1    National Geodetic Survey, Retrieval Date = JUNE  6, 2024 10:52:00 EDT
 DN8624 ***********************************************************************
 DN8624  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 DN8624  TIDAL BM    -  This is a Tidal Bench Mark.
 DN8624  DESIGNATION -  975 2235 D
 DN8624  PID         -  DN8624
 DN8624  STATE/COUNTY-  PR/CULEBRA
 DN8624  COUNTRY     -  US
 DN8624  USGS QUAD   -  CULEBRA (2018)
 DN8624
 DN8624                        *CURRENT SURVEY CONTROL
 DN8624  _____________________________________________________________________
 DN8624* NAD 83(1986) POSITION- 18 18 03.92   (N) 065 18 08.81   (W)    HD_HELD1
 DN8624* PRVD02  ORTHO HEIGHT -     0.973 (meters)        3.19  (feet) ADJUSTED
 DN8624  _____________________________________________________________________
 DN8624  GEOID HEIGHT    -        -41.867 (meters)                      GEOID18
 DN8624  VERT ORDER      -  FIRST     CLASS II
 DN8624
 DN8624.The horizontal coordinates were determined by differentially corrected
 DN8624.hand held GPS observations or other comparable positioning techniques
 DN8624.and have an estimated accuracy of +/- 3 meters.
 DN8624
 DN8624.The orthometric height was determined by differential leveling and
 DN8624.adjusted by the NATIONAL GEODETIC SURVEY
 DN8624.in September 2013.
 DN8624
 DN8624.No vertical observational check was made to the station.
 DN8624
```

```
 DN8624.Significant digits in the geoid height do not necessarily reflect accuracy.
 DN8624.GEOID18 height accuracy estimate available here.
 DN8624
 DN8624.The datum origin mark is the primary tidal bench mark designated '975
 DN8624.2235 D' that is identified by 'VM# 17958' by NOS Center for Operational
 DN8624.Oceanographic Products and Services (CO-OPS). The mark is found in
 DN8624.Culebra on the Island of Culebra, Puerto Rico as part of the National
 DN8624.Water Levels Observation Network (NWLON) designated 9752235. The Local
 DN8624.Mean Sea Level (LMSL) height of 0.973 meters for this mark originated
 DN8624.from the 1983-2001 National Tidal Datum Epoch (NTDE). NGS adopted the
 DN8624.mark's LMSL height as the datum origin point for the Puerto Rico
 DN8624.Vertical Datum (PRVD02) on the Island of Culebra, from which all
 DN8624.heights on the island originate.
 DN8624
 DN8624.Information on the Tidal Bench Mark designated as VM 17958 and its datum
origin
 DN8624.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND
SERVICES.

. . .
```

Change #3:

Prior to June 2024, a continental United States Datasheet95 control point, with an adjusted NGVD 29 best height, was transformed to an NAVD 88 height using VERTCON 2.1. Within limited areas of Canada having NADCON 5.0 transformation coverage, NGVD 29 and NAVD 88 adjusted heights, VERTCON 2.1 will be continuing to be displayed after June 2024 where VERTCON 3.0 does not exists. As of June 2024, all areas covered by VERTCON 3.0 are preferentially superseding VERTCON 2.1 transformations. Furthermore, VERTCON 3.0 coverage is expanding into territorial areas of the United States such as Puerto Rico, the U.S. Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands and American Samoa. The State of Hawaii and other outlying territories are not now covered by any version of VERTCON. VERTCON 3.0 coverage in Canada is reduced and Mexico is excluded. Areas within Canada and Mexico not covered by VERTCON 3.0, but covered by Version 2.1, NGVD 29 heights will continue to be transformed to NAVD 88 by VERTCON 2.1 and displayed on datasheets.

The following partial datasheets below demonstrate the VERTCON changes:

```
Starting Datasheet Retrieval...
1    National Geodetic Survey, Retrieval Date = JUNE  7, 2024 14:40:14 EDT
 DB0483 ***********************************************************************
 DB0483  DESIGNATION -  CO A 9 I CO
 DB0483  PID         -  DB0483
 DB0483  STATE/COUNTY-  CA/IMPERIAL
 DB0483  COUNTRY     -  US
 DB0483  USGS QUAD   -  MOUNT SIGNAL (2018)
 DB0483
 DB0483                        *CURRENT SURVEY CONTROL
 DB0483  ______________________________________________________________________
 DB0483* NAD 83(1986) POSITION- 32 43 58.     (N) 115 41 16.     (W)    SCALED
 DB0483* NAVD 88 ORTHO HEIGHT -    -7.33  (+/-2cm)      -24.0    (feet) VERTCON3
 DB0483  ______________________________________________________________________

. . .

1    National Geodetic Survey, Retrieval Date = JUNE  7, 2024 14:40:14 EDT
 RJ0978 ***********************************************************************
 RJ0978  DESIGNATION -  74
 RJ0978  PID         -  RJ0978
 RJ0978  STATE/COUNTY-  ON/ALGOMA
 RJ0978  COUNTRY     -  CANADA
 RJ0978  NTS MAPSHEET-  MUNUSCONG LAKE (2020)
 RJ0978
 RJ0978                        *CURRENT SURVEY CONTROL
```

```
 RJ0978  _____________________________________________________________________
 RJ0978* NAD 83(1994) POSITION- 46 14 17.06816(N) 084 06 12.95255(W)   ADJUSTED
 RJ0978* NAVD 88 ORTHO HEIGHT -   178.0   (meters)      584.    (feet) VERTCON2
 RJ0978  _____________________________________________________________________

. . .

1    National Geodetic Survey, Retrieval Date = JUNE  7, 2024 14:40:14 EDT
 SZ0057 ***********************************************************************
 SZ0057  DESIGNATION -  MACGREGOR
 SZ0057  PID         -  SZ0057
 SZ0057  STATE/COUNTY-  ON/THUNDER BAY
 SZ0057  COUNTRY     -  CANADA
 SZ0057  NTS MAPSHEET-  ONION LAKE (2020)
 SZ0057
 SZ0057                      *CURRENT SURVEY CONTROL
 SZ0057  _____________________________________________________________________
 SZ0057* NAD 83(1996) POSITION- 48 34 18.03833(N) 089 03 56.11903(W)   ADJUSTED
 SZ0057* NAVD 88 ORTHO HEIGHT -   564.65  (+/-2cm)     1852.5   (feet) VERTCON2
 SZ0057  _____________________________________________________________________

. . .

1    National Geodetic Survey, Retrieval Date = JUNE  7, 2024 14:40:14 EDT
 TO1170 ***********************************************************************
 TO1170  CBN         -  This is a Cooperative Base Network Control Station.
 TO1170  DESIGNATION -  LOON LAKE
 TO1170  PID         -  TO1170
 TO1170  STATE/COUNTY-  WA/STEVENS
 TO1170  COUNTRY     -  US
 TO1170  USGS QUAD   -  SPRINGDALE (2017)
 TO1170
 TO1170                      *CURRENT SURVEY CONTROL
 TO1170  _____________________________________________________________________
 TO1170* NAD 83(2011) POSITION- 48 04 50.69210(N) 117 37 51.53769(W)   ADJUSTED
 TO1170* NAD 83(2011) ELLIP HT-   732.014 (meters)        (06/27/12)   ADJUSTED
 TO1170* NAD 83(2011) EPOCH   -  2010.00
 TO1170* NAVD 88 ORTHO HEIGHT -   750.02  (+/-2cm)     2460.7   (feet) VERTCON3
 TO1170  _____________________________________________________________________

. . .

*** retrieval complete.
 Elapsed Time = 00:00:32
```

Important Announcement 04/19/2024

Over the 04/19/2024 to 04/21/2024 weekend, NGS will be transitioning shapefiles from the regular shapefiles (a.k.a. shapefile 1.0) to beta shapefiles (a.k.a. shapefile 2.0). You will notice this change in the shapefile directory https://geodesy.noaa.gov/pub/DS_ARCHIVE/ShapeFiles/.

Shapefile 1.0 files contained 34 fields. The example below is for the state of Wake Island (WQ):

```
#FeatureId,DATA_DATE,DATA_SRCE,DEC_LONG,DEC_LAT,PID,NAME,STATE,COUNTY,QUAD,LATITUDE,LO
NGITUDE,POS_DATUM,DATUM_TAG,POS_SRCE,ELEVATION,ELEV_DATUM,ELEV_SRCE,ELLIP_HT,ELLIP_SRC
E,POS_ORDER,POS_CHECK,ELEV_ORDER,ELEV_CLASS,ELEV_CHECK,ELLP_ORDER,ELLP_CLASS,FIRST_REC
V,LAST_RECV,LAST_COND,LAST_RECBY,SAT_USE,SAT_DATE,STABILITY
         1,20240418,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=DM7505,-
193.38048, 19.28707,DM7505,189 0000 L,WQ,,,19 17 13.45345(N),193 22 49.72584(W),NAD
83,(2007),ADJUSTED,3.74,LMSL    ,LEVELING,21.515,ADJUSTED,B,Y,3,,Y,1980
,20101109,GOOD,NOS,Y,20101109,D
         2,20240418,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=AE4328,-
193.34639, 19.27889,AE4328,AP STA B 1964,WQ,,,19 16 44.     (N),193 20 47.     (W),NAD
83,(1986),SCALED,3.28,LMSL    ,LEVELING,,,,,3,,Y,1964    ,19730519,GOOD,NGS,,,D
```

```
        3,20240418,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=AE4227,-
193.36056, 19.28278,AE4227,ARP,WQ,,,19 16 58.     (N),193 21 38.     (W),NAD
83,(1986),SCALED,2.58,LMSL    ,LEVELING,,,,,3,,Y,1964    ,19730519,GOOD,NGS,,,D
        4,20240418,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=DQ3059,-
193.38257, 19.29053,DQ3059,WAKE TG CORS ARP,WQ,,,19 17 25.91432(N),193 22
57.24706(W),NAD 83,(PA11),ADJUSTED,,,,22.869,ADJUSTED,,,,,,,,,,,
```

Shapefile 2.0 contains 59 fields. The example below is for the state of Wake Island (WQ):

```
#FeatureId,DATA_DATE,DATA_SRCE,PID,NAME,HT_MOD,CORS_ID,PACS_SACS,STATE,COUNTY,QUAD,LAT
ITUDE,LONGITUDE,DEC_LAT,DEC_LON,ELLIP_HT,POS_DATUM,DATUM_TAG,POS_EPOCH,POS_SRCE,ORTHO_
HT,VERT_DATUM,VERT_EPOCH,VERT_SRCE,GEOID_HT,GEOID_MOD,DYNAMIC_HT,MODEL_GRAV,N_ACC_HZ,N
_ACC_EH,N_ACC_STDN,N_ACC_STDE,N_ACC_STDH,N_ACC_CORR,POS_ORDER,VERT_ORDER,VERT_CLASS,EC
EF_X,ECEF_Y,ECEF_Z,SPC_ZONE,SPC_NORTH,SPC_EAST,SPC_CONV,SPC_CSF,UTM_ZONE,UTM_NORTH,UTM
_EAST,UTM_CONV,UTM_CSF,STABILITY,FIRST_RECV,LAST_RECV,LAST_COND,LAST_RECBY,SAT_USE,MAR
KER,SETTING,STAMPING
        1,20240418,http://www.ngs.noaa.gov/cgi-
bin/ds_mark.prl?PidBox=DM7505,DM7505,189 0000 L,,,,WQ,,,19 17 13.45345(N),193 22
49.72584(W), 19.2870704028,-193.3804794000,21.515,NAD
83,(2007),2002.00,ADJUSTED,3.74,LMSL    ,,LEVELING,17.627,EGM08,,,,,,,,,B,3,,-
5858908.220,1393679.580,2093376.187,,,,,,58,2133386.216,670177.771,+0 32
06.2,0.99995799,D,1980    ,20101109,GOOD,NOS,Y,DD = SURVEY DISK,4 = OBJECT SURROUNDED
BY MASS OF CONCRETE,0000 L 1980
        2,20240418,http://www.ngs.noaa.gov/cgi-
bin/ds_mark.prl?PidBox=AE4328,AE4328,AP STA B 1964,,,,WQ,,,19 16 44.     (N),193 20
47.     (W), 19.2788888889,-193.3463888889,,NAD 83,(1986),,SCALED,3.28,LMSL
,,LEVELING,17.729,EGM08,,,,,,,,,3,,,,,,,,,,,,,,D,1964    ,19730519,GOOD,NGS,,DT =
TOPOGRAPHIC STATION DISK,9 = SET IN PREFABRICATED CONCRETE POST IMBEDDED IN,AP 1964
STA B
        3,20240418,http://www.ngs.noaa.gov/cgi-
bin/ds_mark.prl?PidBox=AE4227,AE4227,ARP,,,,WQ,,,19 16 58.     (N),193 21 38.     (W),
19.2827777778,-193.3605555556,,NAD 83,(1986),,SCALED,2.58,LMSL
,,LEVELING,17.696,EGM08,,,,,,,,,3,,,,,,,,,,,,,,D,1964    ,19730519,GOOD,NGS,,DT =
TOPOGRAPHIC STATION DISK,9 = SET IN PREFABRICATED CONCRETE POST IMBEDDED IN,ARP 1964
        4,20240418,http://www.ngs.noaa.gov/cgi-
bin/ds_mark.prl?PidBox=DQ3059,DQ3059,WAKE TG CORS ARP,,WQSL,,WQ,,,19 17
25.91432(N),193 22 57.24706(W), 19.2905317556,-193.3825686278,22.869,NAD
83,(PA11),2010.00,ADJUSTED,,,,,17.620,EGM08,,,,,,,,,,,,-
5858735.509,1393864.219,2093738.283,,,,,,58,2133767.290,669954.617,+0 32
04.1,0.99995705,,,,,,,STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA,,
```

Please make a note of this when you use NGS shapefiles in your GIS software.

Version 8.12.5.18 updated on 04/18/2024

In this version there are 3 changes to datasheets,

Change #1:

The default CORS Station Description was updated from:

. . .

```
 DQ7572'DESCRIBED BY NATIONAL GEODETIC SURVEY 2019
 DQ7572'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DQ7572'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DQ7572'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DQ7572'   https://geodesy.noaa.gov/corsdata/coord/coord_14
```

```
DQ7572'   https://geodesy.noaa.gov/corsdata/station_log
DQ7572'   https://geodesy.noaa.gov/CORS
```

to:

….

```
DQ7572                          STATION DESCRIPTION
DQ7572
DQ7572'DESCRIBED BY NATIONAL GEODETIC SURVEY 2019
DQ7572'STATION IS PART OF THE NOAA CORS NETWORK.  LATEST INFORMATION INCLUDING
DQ7572'POSITIONS AND VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES
DQ7572'ACCESSIBLE AT THE WORLDWIDE WEB.
DQ7572'https://geodesy.noaa.gov/CORS/data.shtml
DQ7572'https://geodesy.noaa.gov/CORS
```

Prior to this, you would have seen the below text and links:

. . .

```
DQ7572'DESCRIBED BY NATIONAL GEODETIC SURVEY 2019
DQ7572'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DQ7572'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DQ7572'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DQ7572'   https://geodesy.noaa.gov/corsdata/coord/coord_14
DQ7572'   https://geodesy.noaa.gov/corsdata/station_log
DQ7572'   https://geodesy.noaa.gov/CORS
```

Change #2:

State Advisor, Brian Shaw, requested that the retrieval time be added to the end of the retrieval date on a datasheet. This date is in military time and also includes the zone (e.g., GMT, EST, EDT, CST, CDT, PST, PDT, etc.). You should see the date and time near the top of a datasheet like the partial datasheet shown below:

```
Starting Datasheet Retrieval...
1    National Geodetic Survey, Retrieval Date = MARCH 22, 2024 12:14:17 EDT
 AC6803 ***********************************************************************
 AC6803  HT_MOD      -  This is a Height Modernization Survey Station.
 AC6803  PACS        -  This is a Primary Airport Control Station.
 AC6803  DESIGNATION -  AZC A
 AC6803  PID         -  AC6803
 AC6803  STATE/COUNTY-  AZ/MOHAVE
 AC6803  COUNTRY     -  US
 AC6803  USGS QUAD   -  LOST SPRING MOUNTAIN EAST (2018)
```

Change #3:

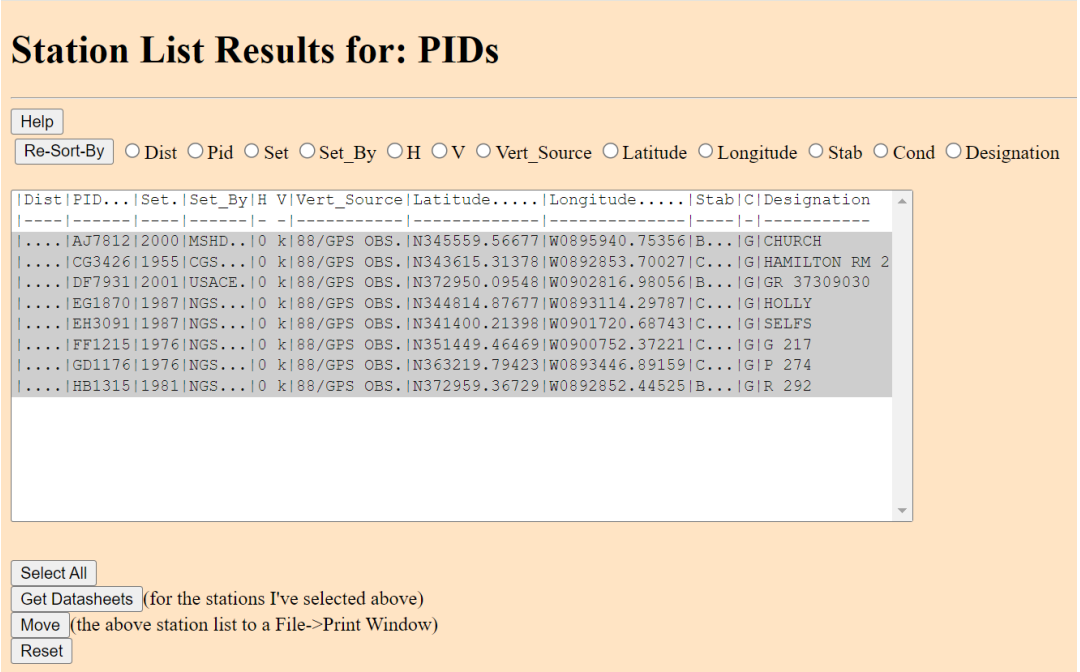
Former NGS employee, Jeff Olsen requested that when one loads a file of PIDs using the https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl webpage, that the marks in the mark listing *not* be sorted and displayed by the default sort order of designation, but rather be displayed in the order in which they appear in the input file.

Example: An input file called pids.in, contains the following PIDs:

```
AJ7812
CG3426
DF7931
EG1870
EH3091
FF1215
GD1176
HB1315
```

Do the following steps:

1. In your favorite browser, enter the URL: *https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl*.
2. Press the *[Choose file]* button and select the pids.in file, and then press the *[Load PIDs from file=]* button. The PIDs from the *pids.in* file will be loaded into the PID Box.
3. Press the *[Submit]* button. You should see the PIDs in the mark listing in the order shown below and the (default) Designation radio button should *not* be turned on.



4. On the next page, if one presses the *[Select All]* button, followed by the *[Get Datasheets]* button, the datasheets will appear in same order as they did in the mark listing.

Version 8.12.5.17 updated on 02/13/2024

In this version there are 3 changes to datasheets,

Change #1:

NGS has updated the best height algorithm to take care of an exception where no observation date existed on some height records. This exception was found when GPS1862/A was loaded into our database. GPS1862/A spans the following states: AR, IL, KY, MO, MS, and TN.

The following PIDs are in GPS1862/A:

```
AJ7812
CG3426
DF7931
DF7932
DF7933
DF7934
DF7935
DF7936
DF7937
DF7938
DF7939
DF7940
DF7941
DF7942
DF7943
DF7944
DF7945
DF7946
```

DF7947
DF7948
DF7949
DF7950
DF7951
DF7952
DF7953
DF7954
DF7955
DF7956
DF7957
DF7958
DF7959
DF7960
DF7961
DF7962
DF7963
DF7964
DF7965
DF7966
DF7967
DF7968
DF7969
DF7970
DF7971
DF7972
EG1870
EG1874
EH3091
EH3099
FE1881
FE2743
FE2751
FE2754
FF1215
GD1176
GD1874
GE1193
GE1210
HB1301
HB1315

Their ORTHO HEIGHT line will display the following data:

```
AJ7812* NAVD 88 ORTHO HEIGHT -    98.90  (meters)      324.5   (feet) GPS OBS
CG3426* NAVD 88 ORTHO HEIGHT -   115.33  (meters)      378.4   (feet) GPS OBS
DF7931* NAVD 88 ORTHO HEIGHT -   180.27  (meters)      591.4   (feet) GPS OBS
DF7932* NAVD 88 ORTHO HEIGHT -   226.74  (meters)      743.9   (feet) GPS OBS
DF7933* NAVD 88 ORTHO HEIGHT -   121.98  (meters)      400.2   (feet) GPS OBS
DF7934* NAVD 88 ORTHO HEIGHT -   131.62  (meters)      431.8   (feet) GPS OBS
DF7935* NAVD 88 ORTHO HEIGHT -   121.30  (meters)      398.0   (feet) GPS OBS
DF7936* NAVD 88 ORTHO HEIGHT -    97.91  (meters)      321.2   (feet) GPS OBS
DF7937* NAVD 88 ORTHO HEIGHT -   141.55  (meters)      464.4   (feet) GPS OBS
DF7938* NAVD 88 ORTHO HEIGHT -   142.64  (meters)      468.0   (feet) GPS OBS
DF7939* NAVD 88 ORTHO HEIGHT -    89.53  (meters)      293.7   (feet) GPS OBS
DF7940* NAVD 88 ORTHO HEIGHT -    86.62  (meters)      284.2   (feet) GPS OBS
DF7941* NAVD 88 ORTHO HEIGHT -    95.64  (meters)      313.8   (feet) GPS OBS
DF7942* NAVD 88 ORTHO HEIGHT -   146.60  (meters)      481.0   (feet) GPS OBS
DF7943* NAVD 88 ORTHO HEIGHT -   122.70  (meters)      402.6   (feet) GPS OBS
DF7944* NAVD 88 ORTHO HEIGHT -   139.87  (meters)      458.9   (feet) GPS OBS
DF7945* NAVD 88 ORTHO HEIGHT -    80.88  (meters)      265.4   (feet) GPS OBS
DF7946* NAVD 88 ORTHO HEIGHT -    75.79  (meters)      248.7   (feet) GPS OBS
```

```
DF7947* NAVD 88 ORTHO HEIGHT -    80.11   (meters)      262.8   (feet) GPS OBS
DF7948* NAVD 88 ORTHO HEIGHT -    68.42   (meters)      224.5   (feet) GPS OBS
DF7949* NAVD 88 ORTHO HEIGHT -    73.14   (meters)      240.0   (feet) GPS OBS
DF7950* NAVD 88 ORTHO HEIGHT -   111.75   (meters)      366.6   (feet) GPS OBS
DF7951* NAVD 88 ORTHO HEIGHT -   125.80   (meters)      412.7   (feet) GPS OBS
DF7952* NAVD 88 ORTHO HEIGHT -   177.73   (meters)      583.1   (feet) GPS OBS
DF7953* NAVD 88 ORTHO HEIGHT -    74.68   (meters)      245.0   (feet) GPS OBS
DF7954* NAVD 88 ORTHO HEIGHT -    63.37   (meters)      207.9   (feet) GPS OBS
DF7955* NAVD 88 ORTHO HEIGHT -    62.77   (meters)      205.9   (feet) GPS OBS
DF7956* NAVD 88 ORTHO HEIGHT -    62.06   (meters)      203.6   (feet) GPS OBS
DF7957* NAVD 88 ORTHO HEIGHT -   127.39   (meters)      417.9   (feet) GPS OBS
DF7958* NAVD 88 ORTHO HEIGHT -   189.49   (meters)      621.7   (feet) GPS OBS
DF7959* NAVD 88 ORTHO HEIGHT -   162.89   (meters)      534.4   (feet) GPS OBS
DF7960* NAVD 88 ORTHO HEIGHT -    67.00   (meters)      219.8   (feet) GPS OBS
DF7961* NAVD 88 ORTHO HEIGHT -    64.10   (meters)      210.3   (feet) GPS OBS
DF7962* NAVD 88 ORTHO HEIGHT -    53.54   (meters)      175.7   (feet) GPS OBS
DF7963* NAVD 88 ORTHO HEIGHT -   102.29   (meters)      335.6   (feet) GPS OBS
DF7964* NAVD 88 ORTHO HEIGHT -   114.89   (meters)      376.9   (feet) GPS OBS
DF7965* NAVD 88 ORTHO HEIGHT -   106.17   (meters)      348.3   (feet) GPS OBS
DF7966* NAVD 88 ORTHO HEIGHT -    51.00   (meters)      167.3   (feet) GPS OBS
DF7967* NAVD 88 ORTHO HEIGHT -    47.31   (meters)      155.2   (feet) GPS OBS
DF7968* NAVD 88 ORTHO HEIGHT -    51.59   (meters)      169.3   (feet) GPS OBS
DF7969* NAVD 88 ORTHO HEIGHT -   104.28   (meters)      342.1   (feet) GPS OBS
DF7970* NAVD 88 ORTHO HEIGHT -   146.32   (meters)      480.1   (feet) GPS OBS
DF7971* NAVD 88 ORTHO HEIGHT -    68.05   (meters)      223.3   (feet) GPS OBS
DF7972* NAVD 88 ORTHO HEIGHT -    72.88   (meters)      239.1   (feet) GPS OBS
EG1870* NAVD 88 ORTHO HEIGHT -   160.30   (meters)      525.9   (feet) GPS OBS
EG1874* NAVD 88 ORTHO HEIGHT -   137.09   (meters)      449.8   (feet) GPS OBS
EH3091* NAVD 88 ORTHO HEIGHT -    49.08   (meters)      161.0   (feet) GPS OBS
EH3099* NAVD 88 ORTHO HEIGHT -    63.25   (meters)      207.5   (feet) GPS OBS
FE1881* NAVD 88 ORTHO HEIGHT -    79.24   (meters)      260.0   (feet) GPS OBS
FE2743* NAVD 88 ORTHO HEIGHT -   160.12   (meters)      525.3   (feet) GPS OBS
FE2751* NAVD 88 ORTHO HEIGHT -   184.20   (meters)      604.3   (feet) GPS OBS
FE2754* NAVD 88 ORTHO HEIGHT -    84.02   (meters)      275.7   (feet) GPS OBS
FF1215* NAVD 88 ORTHO HEIGHT -    74.45   (meters)      244.3   (feet) GPS OBS
GD1176* NAVD 88 ORTHO HEIGHT -    93.69   (meters)      307.4   (feet) GPS OBS
GD1874* NAVD 88 ORTHO HEIGHT -   158.36   (meters)      519.6   (feet) GPS OBS
GE1193* NAVD 88 ORTHO HEIGHT -    82.87   (meters)      271.9   (feet) GPS OBS
GE1210* NAVD 88 ORTHO HEIGHT -    80.47   (meters)      264.0   (feet) GPS OBS
HB1301* NAVD 88 ORTHO HEIGHT -   109.93   (meters)      360.7   (feet) GPS OBS
HB1315* NAVD 88 ORTHO HEIGHT -   112.57   (meters)      369.3   (feet) GPS OBS
```

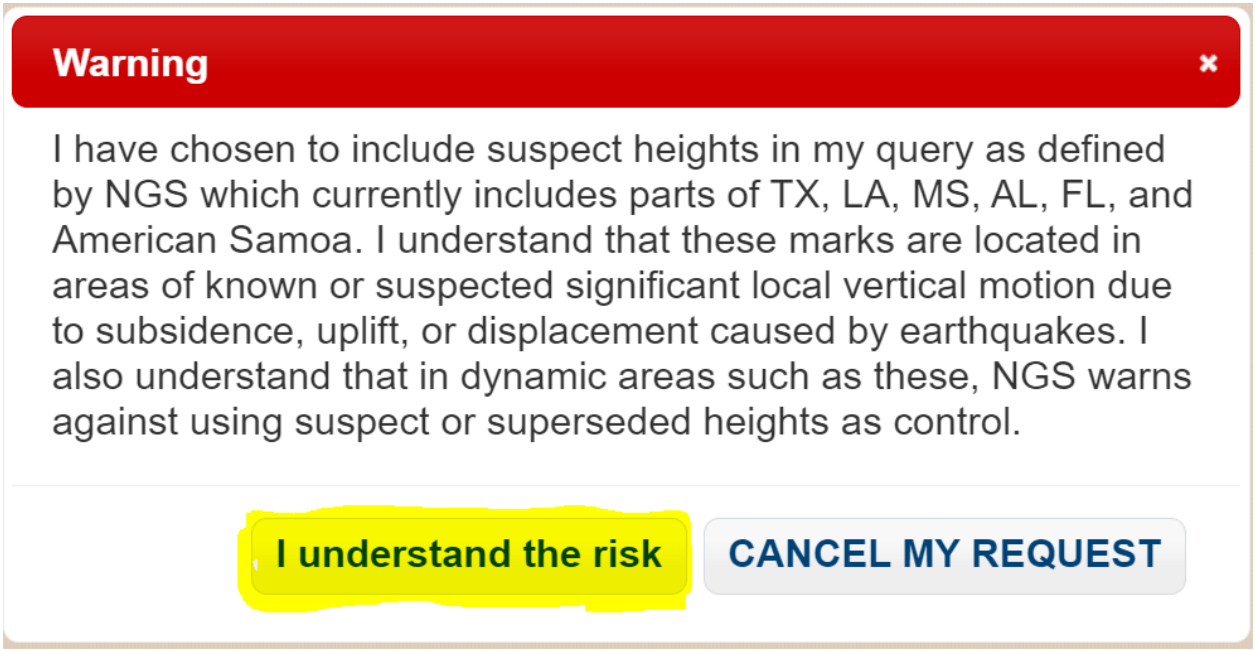
Change #2:

Whenever a control points in the subsidence area has "NOT PUB" on their datasheet's ORTHO HEIGHT line, the VERT ORDER line and any ortho height messages will no longer be displayed on the datasheets.

To see these changes:
1. Go to https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl.
2. Enter the following PIDs into the PID Box:

```
AJ5822
AU0254
AU3359
BJ1449
```

Check the include suspect heights in vertical motion areas checkbox, and then press the *[Submit]* button. When the warnings message pops up as shown below:



press the [I understand the risk] button. On the next page, select the PID radio button, press the [Re-Sort-By] button to sort the marks by PID. Next, press the *[Select All]* button followed by the *[Get Datasheets]* button. You should see the below datasheets without the VERT ORDER or orthometric height messages on them. The ORTHO HEIGHT line is highlighted in green. Other differences on the datasheets are displayed in yellow.

```
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
 AJ5822 ***********************************************************************
 AJ5822  TIDAL BM    -  This is a Tidal Bench Mark.
 AJ5822  DESIGNATION -  874 7766 D TIDAL
 AJ5822  PID         -  AJ5822
 AJ5822  STATE/COUNTY-  MS/HANCOCK
 AJ5822  COUNTRY     -  US
 AJ5822  USGS QUAD   -  BAY SAINT LOUIS (2018)
 AJ5822
 AJ5822                        *CURRENT SURVEY CONTROL
 AJ5822  ______________________________________________________________________
 AJ5822* NAD 83(2011) POSITION- 30 17 06.34303(N) 089 21 58.60155(W)   ADJUSTED
 AJ5822* NAD 83(2011) ELLIP HT-   -25.540 (meters)        (06/27/12)   ADJUSTED
 AJ5822* NAD 83(2011) EPOCH    -  2010.00
 AJ5822* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AJ5822  **This station is located in a suspected subsidence area (see below).
 AJ5822  ______________________________________________________________________
 AJ5822  GEOID HEIGHT    -        -27.281 (meters)                    GEOID18
 AJ5822  NAD 83(2011) X  -     60,968.439 (meters)                    COMP
 AJ5822  NAD 83(2011) Y  - -5,512,027.282 (meters)                    COMP
 AJ5822  NAD 83(2011) Z  -  3,197,691.464 (meters)                    COMP
 AJ5822  LAPLACE CORR    -         -2.17  (seconds)                   DEFLEC18
 AJ5822  DYNAMIC HEIGHT  -          1.888 (meters)        6.19  (feet) COMP
 AJ5822  MODELED GRAVITY -    979,326.3   (mgal)                      NAVD 88
 AJ5822
 AJ5822  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AJ5822  Standards:
```

```
AJ5822         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AJ5822            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AJ5822  ------------------------------------------------------------------
AJ5822  NETWORK    1.92   5.47           0.80   0.75   2.79     -0.28271968
AJ5822  ------------------------------------------------------------------
AJ5822  Click here for local accuracies and other accuracy information.
AJ5822
AJ5822.The horizontal coordinates were established by GPS observations
AJ5822.and adjusted by the National Geodetic Survey in June 2012.
AJ5822
AJ5822.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AJ5822.been affixed to the stable North American tectonic plate. See
AJ5822.NA2011 for more information.
AJ5822
AJ5822.The horizontal coordinates are valid at the epoch date displayed above
AJ5822.which is a decimal equivalence of Year/Month/Day.
AJ5822
AJ5822.** This station is in an area of known vertical motion. If an
AJ5822.** orthometric height was ever established but is not available
AJ5822.** in the current survey control section, the orthometric height
AJ5822.** is considered suspect.  Suspect heights are available in the
AJ5822.** superseded section only if requested.
AJ5822
AJ5822.Significant digits in the geoid height do not necessarily reflect accuracy.
AJ5822.GEOID18 height accuracy estimate available here.
AJ5822
AJ5822.This Tidal Bench Mark is designated as VM 13300
AJ5822.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
AJ5822
AJ5822.Click photographs - Photos may exist for this station.
AJ5822
AJ5822.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AJ5822
AJ5822.The Laplace correction was computed from DEFLEC18 derived deflections.
AJ5822
AJ5822.The ellipsoidal height was determined by GPS observations
AJ5822.and is referenced to NAD 83.
AJ5822
AJ5822.The dynamic height is computed by dividing the NAVD 88
AJ5822.geopotential number by the normal gravity value computed on the
AJ5822.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AJ5822.degrees latitude (g = 980.6199 gals.).
AJ5822
AJ5822.The modeled gravity was interpolated from observed gravity values.
AJ5822
AJ5822. The following values were computed from the NAD 83(2011) position.
AJ5822
AJ5822;                    North         East     Units Scale Factor Converg.
AJ5822;SPC MS E     -    87,144.222   248,727.947   MT  0.99998242   -0 16 07.6
AJ5822;SPC MS E     -   285,905.67    816,034.94   sFT  0.99998242   -0 16 07.6
AJ5822;UTM  16      - 3,352,747.899   272,401.081   MT  1.00023911   -1 11 37.8
AJ5822
AJ5822!             -  Elev Factor  x  Scale Factor =   Combined Factor
AJ5822!SPC MS E     -   1.00000401  x   0.99998242  =   0.99998643
AJ5822!UTM  16      -   1.00000401  x   1.00023911  =   1.00024312
AJ5822
AJ5822_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU7240152747(NAD 83)
AJ5822
AJ5822|----------------------------------------------------------------------|
AJ5822| PID    Reference Object                    Distance      Geod. Az  |
AJ5822|                                                          dddmmss.s |
AJ5822| AJ5823 874 7766 C TIDAL                  161.881 METERS 22548     |
AJ5822|----------------------------------------------------------------------|
AJ5822
AJ5822                         SUPERSEDED SURVEY CONTROL
AJ5822
AJ5822  NAD 83(2007)-  30 17 06.34304(N)    089 21 58.60212(W) AD(       ) 0
AJ5822  ELLIP H (02/10/07)  -25.507  (m)                       GP(       )
AJ5822  ELLIP H (03/26/02)  -25.500  (m)                       GP(       ) 4 2
AJ5822  NAD 83(1993)-  30 17 06.34316(N)    089 21 58.60211(W) AD(       ) A
AJ5822  ELLIP H (09/10/01)  -25.500  (m)                       GP(       ) 4 2
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AJ5822  NAVD 88 (07/15/08)    1.890   (m)            6.20    (f) ADJUSTED    2 1
AJ5822  NAVD 88               1.89    (m)            6.2     (f) LEVELING    3
AJ5822
AJ5822.Superseded values are not recommended for survey control.
AJ5822
AJ5822.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ5822.See file dsdata.pdf to determine how the superseded data were derived.
AJ5822
AJ5822_MARKER: DJ = TIDAL STATION DISK
AJ5822_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AJ5822_STAMPING: 7766 D 1996
AJ5822_MARK LOGO: NOS
AJ5822_PROJECTION: RECESSED 3 CENTIMETERS
AJ5822_MAGNETIC: N = NO MAGNETIC MATERIAL
AJ5822_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AJ5822_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ5822+SATELLITE: SATELLITE OBSERVATIONS - August 08, 2018
AJ5822_ROD/PIPE-DEPTH: 11 meters
AJ5822
AJ5822  HISTORY     - Date     Condition        Report By
AJ5822  HISTORY     - 1996     MONUMENTED       NOS
AJ5822  HISTORY     - 19960220 GOOD             NOS
AJ5822  HISTORY     - 20010710 GOOD             NGS
AJ5822  HISTORY     - 20100708 POOR             PICINC
AJ5822  HISTORY     - 20180808 POOR             MSDOT
AJ5822
AJ5822                          STATION DESCRIPTION
AJ5822
AJ5822'DESCRIBED BY NATIONAL OCEAN SERVICE 1996 (RJG)
AJ5822'RECOVERED AS DESCRIBED.
AJ5822
AJ5822                          STATION RECOVERY (2001)
AJ5822
AJ5822'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2001
AJ5822'STATION 874 7766 C IS LOCATED ON THE MISSISSIPPI GULF COAST AT
AJ5822'WAVELAND.  TO REACH THE STATION FROM THE INTERSECTION OF US 90,
AJ5822'ROUTE 43, AND NICHOLSON AVE. IN WAVELAND, DRIVE SOUTHEAST ON
AJ5822'NICHOLSON AVE. FOR 1.3 MI TO A RAILROAD CROSSING.  CONTINUE ON
AJ5822'NICHOLSON AVE. FOR 0.4 MI TO THE T INTERSECTION WITH N. BEACH BLVD.
AJ5822'TURN RIGHT AND PROCEED SOUTHWEST ON N. BEACH BLVD. FOR 0.5 MI TO
AJ5822'STATION 7766 D ON THE RIGHT, LANDWARD, SIDE OF N. BEACH BLVD.  THE
AJ5822'STATION IS IN THE FRONT YARD OF A HOUSE AT 231 BEACH BLVD..  IT IS
AJ5822'29.45 M SW OF THE CENTERLINE OF LAFITTE DR., 8.8 M NW OF THE
AJ5822'CENTERLINE OF BEACH BLVD., 14.65 M NE OF THE DRIVEWAY, AND 1.2 M SE
AJ5822'OF A POWER POLE WITH 2 TRANSFORMERS.  THE ACCESS COVER MAY BE
AJ5822'BURIED A FEW CENTIMETERS.
AJ5822'
AJ5822
AJ5822                          STATION RECOVERY (2010)
AJ5822
AJ5822'RECOVERY NOTE BY PICKERING INCORPORATED 2010
AJ5822'MARK WAS FOUND DISTURBED.  THE CAP ON TOP OF THE ROD MARKER WAS BENT.
AJ5822'
AJ5822'ALSO, ANY REFERENCES TO HOUSES OR ADDRESSES IN THE DESCRIPTION ARE NO
AJ5822'
AJ5822'LONGER HELPFUL BECAUSE ALL HOUSES IN THE VICINITY OF THE MARK HAVE
AJ5822'BEEN
AJ5822'DESTROYED SINCE THE 2001 UPDATE.
AJ5822
AJ5822                          STATION RECOVERY (2018)
AJ5822
AJ5822'RECOVERY NOTE BY MS DEPT TRANS 2018 (TPO)
AJ5822'MARK RECOVERED IN POOR CONDITION.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
AU0254 ***********************************************************************
AU0254  DESIGNATION -  GIBSON
AU0254  PID         -  AU0254
AU0254  STATE/COUNTY-  LA/TERREBONNE
AU0254  COUNTRY     -  US
AU0254  USGS QUAD   -  GIBSON (2018)
AU0254
```

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AU0254                         *CURRENT SURVEY CONTROL
AU0254
AU0254* NAD 83(2011) POSITION- 29 42 20.07088(N) 090 59 30.64198(W)   ADJUSTED
AU0254* NAD 83(2011) ELLIP HT-   -24.933 (meters)        (06/27/12)   ADJUSTED
AU0254* NAD 83(2011) EPOCH    -  2010.00
AU0254* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AU0254  **This station is located in a suspected subsidence area (see below).
AU0254
AU0254  GEOID HEIGHT    -        -25.507 (meters)                     GEOID18
AU0254  NAD 83(2011) X  -    -95,975.496 (meters)                     COMP
AU0254  NAD 83(2011) Y  - -5,543,650.043 (meters)                     COMP
AU0254  NAD 83(2011) Z  -  3,142,055.128 (meters)                     COMP
AU0254  LAPLACE CORR    -          0.15  (seconds)                    DEFLEC18
AU0254  DYNAMIC HEIGHT  -         0.834 (meters)        2.74  (feet) COMP
AU0254  MODELED GRAVITY -    979,304.3   (mgal)                       NAVD 88
AU0254
AU0254  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AU0254  Standards:
AU0254         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AU0254            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AU0254  ------------------------------------------------------------------
AU0254  NETWORK    3.56  20.83           1.16   1.64  10.63      0.26121615
AU0254  ------------------------------------------------------------------
AU0254  Click here for local accuracies and other accuracy information.
AU0254
AU0254.The horizontal coordinates were established by GPS observations
AU0254.and adjusted by the National Geodetic Survey in June 2012.
AU0254
AU0254.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AU0254.been affixed to the stable North American tectonic plate. See
AU0254.NA2011 for more information.
AU0254
AU0254.The horizontal coordinates are valid at the epoch date displayed above
AU0254.which is a decimal equivalence of Year/Month/Day.
AU0254
AU0254.** This station is in an area of known vertical motion. If an
AU0254.** orthometric height was ever established but is not available
AU0254.** in the current survey control section, the orthometric height
AU0254.** is considered suspect.  Suspect heights are available in the
AU0254.** superseded section only if requested.
AU0254
AU0254.Significant digits in the geoid height do not necessarily reflect accuracy.
AU0254.GEOID18 height accuracy estimate available here.
AU0254
AU0254.Click photographs - Photos may exist for this station.
AU0254
AU0254.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AU0254
AU0254.The Laplace correction was computed from DEFLEC18 derived deflections.
AU0254
AU0254.The ellipsoidal height was determined by GPS observations
AU0254.and is referenced to NAD 83.
AU0254
AU0254.The dynamic height is computed by dividing the NAVD 88
AU0254.geopotential number by the normal gravity value computed on the
AU0254.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AU0254.degrees latitude (g = 980.6199 gals.).
AU0254
AU0254.The modeled gravity was interpolated from observed gravity values.
AU0254
AU0254. The following values were computed from the NAD 83(2011) position.
AU0254
AU0254;                    North         East     Units Scale Factor Converg.
AU0254;SPC LA S     -   133,680.955 1,033,043.699   MT  0.99993894   +0 10 14.7
AU0254;SPC LA S     -   438,584.93  3,389,244.20   sFT  0.99993894   +0 10 14.7
AU0254;UTM  15      - 3,287,848.949   694,271.462   MT  1.00006569   +0 59 43.6
AU0254
AU0254!             -  Elev Factor  x  Scale Factor =   Combined Factor
AU0254!SPC LA S     -   1.00000392  x   0.99993894  =   0.99994286
AU0254!UTM  15      -   1.00000392  x   1.00006569  =   1.00006961
AU0254
```

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AU0254:                Primary Azimuth Mark                    Grid Az
AU0254:SPC LA S     -  DONNER SAWMILL WATER TANK               125 28 19.9
AU0254:UTM  15      -  DONNER SAWMILL WATER TANK               124 38 51.0
AU0254
AU0254_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RXN9427187848(NAD 83)
AU0254
AU0254|----------------------------------------------------------------------|
AU0254| PID    Reference Object                    Distance      Geod. Az  |
AU0254|                                                          dddmmss.s |
AU0254| AU1326 GIBSON RM 1                                       08552     |
AU0254| AH6177 GIBSON AZ MK                       234.268 METERS 09138     |
AU0254| AU3188 DONNER SAWMILL WATER TANK          APPROX. 3.2 KM 1253834.6 |
AU0254| AU0255 GIBSON RM 2                         33.245 METERS 16805     |
AU0254|----------------------------------------------------------------------|
AU0254
AU0254                          SUPERSEDED SURVEY CONTROL
AU0254
AU0254  NAD 83(2007)-  29 42 20.07102(N)    090 59 30.64263(W) AD(       ) 0
AU0254  ELLIP H (02/10/07)  -24.891  (m)                       GP(       )
AU0254  ELLIP H (02/21/02)  -24.900  (m)                       GP(       ) 5 1
AU0254  NAD 83(1992)-  29 42 20.07033(N)    090 59 30.64115(W) AD(       ) 1
AU0254  ELLIP H (12/17/98)  -24.857  (m)                       GP(       ) 4 2
AU0254  NAD 83(1992)-  29 42 20.06582(N)    090 59 30.63432(W) AD(       ) 1
AU0254  NAD 83(1986)-  29 42 20.08904(N)    090 59 30.63651(W) AD(       ) 1
AU0254  NAD 27      -  29 42 19.34000(N)    090 59 30.28500(W) AD(       ) 1
AU0254  NAVD 88              0.84   (m)           2.8    (f) LEVELING    3
AU0254  NAVD 88 (02/14/94)   0.835  (m)           2.74   (f) ADJUSTED    1 1
AU0254  NAVD 88 (06/15/91)   0.877  (m)           2.88   (f) SUPERSEDED  1 1
AU0254  NGVD 29              0.97   (m)           3.2    (f) LEVELING    3
AU0254  NGVD 29 (11/26/84)   0.922  (m)           3.02   (f) ADJUSTED    1 1
AU0254
AU0254.Superseded values are not recommended for survey control.
AU0254
AU0254.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU0254.See file dsdata.pdf to determine how the superseded data were derived.
AU0254
AU0254_MARKER: DS = TRIANGULATION STATION DISK
AU0254_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AU0254_STAMPING: GIBSON 1931
AU0254_MARK LOGO: CGS
AU0254_PROJECTION: FLUSH
AU0254_MAGNETIC: O = OTHER; SEE DESCRIPTION
AU0254_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AU0254+STABILITY: SURFACE MOTION
AU0254_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AU0254+SATELLITE: SATELLITE OBSERVATIONS - January 03, 1995
AU0254
AU0254  HISTORY     - Date     Condition        Report By
AU0254  HISTORY     - 1931     MONUMENTED       CGS
AU0254  HISTORY     - 1938     GOOD             LAGS
AU0254  HISTORY     - 1948     GOOD             CGS
AU0254  HISTORY     - 1955     GOOD             CGS
AU0254  HISTORY     - 1969     GOOD             CGS
AU0254  HISTORY     - 1977     GOOD             NGS
AU0254  HISTORY     - 1982     GOOD             NGS
AU0254  HISTORY     - 19930223 GOOD             NGS
AU0254  HISTORY     - 19950103 GOOD             MPHI
AU0254
AU0254                           STATION DESCRIPTION
AU0254
AU0254'DESCRIBED BY COAST AND GEODETIC SURVEY 1931 (FLG)
AU0254'STATION IS ABOUT 12 MILES SW OF THIBODAUX, 2.2 MILES W OF THE
AU0254'VILLAGE OF DONNER, AND 1.4 MILES N OF GIBSON.
AU0254'
AU0254'SURFACE, UNDERGROUND, AND REFERENCE MARKS ARE STANDARD DISKS
AU0254'SET IN CONCRETE.
AU0254'
AU0254'SURFACE MARK PROJECTS 4 INCHES.
AU0254'
AU0254'REFERENCE MARK NO. 1 PROJECTS 7 INCHES AND IS ON INSIDE OF A
AU0254'BEND IN HIGHWAY 1/8 MILE E OF CHURCH, 25 FEET S OF CENTER LINE
```

AU0254'OF ROAD, 200 FEET E OF A WOODEN SHED AND APPROXIMATELY 1,000 FEET
AU0254'FROM STATION N 85 DEG 52 MIN E.
AU0254'
AU0254'REFERENCE MARK NO. 2, A FLUSH MARK, IS 144 FEET S (IN LINE WITH
AU0254'THE STATION) FROM CENTER LINE OF HIGHWAY, 20.7 FEET SW OF SW
AU0254'CORNER OF CHURCH, 25.2 FEET N OF S FENCE LINE OF CHURCHYARD,
AU0254'AND 109.07 FEET FROM STATION S 11 DEG 55 MIN E.
AU0254'
AU0254'REACHED FROM THIBODAUX BY ROUTE 28 WHICH IS THE MAIN GRAVEL
AU0254'ROAD TO MORGAN CITY, PASSING THROUGH CHACAHOULA AND DONNER.
AU0254'STATION IS ON S SIDE OF ROAD, 59.0 FEET NW OF NW CORNER OF ROSE
AU0254'HILL BAPTIST CHURCH, 35 FEET S OF CENTER LINE OF HIGHWAY, AND IN
AU0254'NORTH SIDE CENTER OF CHURCHYARD, 14.4 FEET S OF A WIRE FENCE.
AU0254
AU0254   STATION RECOVERY (1938)
AU0254
AU0254'RECOVERY NOTE BY LOUISIANA GEODETIC SURVEY 1938
AU0254'CHANGES AS FOLLOWS--ABOUT 12 MILES SW OF THIBODAUX. 23 MILES W
AU0254'OF HOUMA. 2.2 MILES W OF THE VILLAGE OF DONNER, AND 1.4 MILES N
AU0254'OF GIBSON, LOUISIANA. REACHED FROM THIBODAUX BY STATE HIGHWAY 28,
AU0254'FROM HOUMA BY U.S. HIGHWAY 90. TO REACH FROM INTERSECTION OF
AU0254'HIGHWAYS 28 AND 90, WHICH OCCURS 0.5 MILE N OF GIBSON, PROCEED
AU0254'0.2 MILE E ON HIGHWAY 28 TO GRAVEL ROAD WHICH PASSES BENEATH
AU0254'SOUTHERN PACIFIC RAILROAD GRADE, TURN N AND PROCEED FOR 1.2
AU0254'MILES TO ROSE HILL BAPTIST CHURCH. STATION IS ON S SIDE OF
AU0254'ROAD, 59.0 FEET NW OF NW CORNER OF CHURCH. 35 FEET S OF
AU0254'CENTER LINE OF ROAD. 14.4 FEET S OF A WIRE FENCE. (FROM THIS
AU0254'POINT ON THE ORIGINAL DESCRIPTION IS COMPETENT). THESE
AU0254'CHANGES ARE NECESSARY BECAUSE OF THE CONSTRUCTION OF A NEW
AU0254'CONCRETE HIGHWAY FROM THIBODAUX.
AU0254
AU0254   STATION RECOVERY (1948)
AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1948 (CWC)
AU0254'STATION AND R.M. 2 WERE RECOVERED IN GOOD CONDITION. THE 1938
AU0254'RECOVERY NOTE BY THE LOUISIANA GEODETIC SURVEY IS ADEQUATE
AU0254'FOR FUTURE RECOVERY, BUT THE FOLLOWING MINOR CHANGES AT THE
AU0254'STATION SITE WERE NOTED--
AU0254'
AU0254'THE STATION IS 31.8 FEET S OF THE CENTER LINE OF A SHELL ROAD
AU0254'AND 33.2 FEET SW OF THE GATE LEADING TO THE CHURCH.
AU0254'
AU0254'THE INTERSECTION OF HIGHWAYS 90 AND 28 IS 0.5 MILE W OF GIBSON,
AU0254'NOT N.
AU0254'
AU0254'R.M. 1 WAS SEARCHED FOR BUT NOT RECOVERED.
AU0254
AU0254   STATION RECOVERY (1955)
AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1955 (HDR)
AU0254'0.5 MI. W ALONG THE TEXAS AND NEW ORLEANS RAILROAD FROM THE
AU0254'STATION AT GIBSON, THENCE 1.4 MI. N ALONG A GRAVELED ROAD,
AU0254'31 FT. S OF THE CENTERLINE OF A ROAD, 59 FT. NW OF THE NW CORNER
AU0254'OF THE ROSE HILL BAPTIST CHURCH, 30 FT. W OF THE CENTERLINE
AU0254'OF A DRIVEWAY LEADING TO THE CHURCH, 2 FT. SW OF A WITNESS POST,
AU0254'A TRIANGULATION-STATION DISK, SET IN THE TOP OF A CONCRETE POST
AU0254'PROJECTING 0.4 FT. ABOVE THE GROUND, AND STAMPED GIBSON 1931.
AU0254'
AU0254'REFERENCE MARK 1 IS 0.1 MI. E OF THE TRIANGULATION STATION, 80
AU0254'FT. W OF A FOOTWALK, 127 FT. NW OF THE N CORNER OF AN OLD SHED,
AU0254'28 FT. SW OF THE CENTERLINE OF A ROAD, 17.6 FT. SW OF A WITNESS
AU0254'POST, A REFERENCE-MARK DISK, SET IN THE TOP OF A CONCRETE POST
AU0254'PROJECTING 0.4 FT. ABOVE THE GROUND, AND STAMPED GIBSON NO 1
AU0254'1931.
AU0254'
AU0254'REFERENCE MARK 2 IS 109 FT. S OF THE TRIANGULATIN STATION, 20.7
AU0254'FT. SW OF THE SW CORNER OF THE ROSE HILL BAPTIST CHURCH, A
AU0254'REFERENCE-MARK DISK, SET IN THE TOP OF A CONCRETE POST FLUSH WITH
AU0254'THE GROUND, AND STAMPED GIBSON NO 2 1931.
AU0254
AU0254   STATION RECOVERY (1969)

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AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1969
AU0254'1.4 MI NE FROM GIBSON.
AU0254'ABOUT 1.4 MILES NORTHEAST ALONG DEADWOOD ROAD FROM THE SOUTHERN
AU0254'PACIFIC COMPANY RAILROAD OVERPASS OVER THE ROAD AT GIBSON, IN THE LAWN
AU0254'OF THE ROSE HILL BAPTIST CHURCH AND CEMETERY, 59 FEET NORTHWEST OF THE
AU0254'NORTHWEST CORNER OF THE CHURCH BUILDING, 36 FEET SOUTH OF THE CENTER
AU0254'LINE OF THE ROAD, 29 FEET WEST OF THE CENTER LINE OF A DRIVEWAY TO
AU0254'CHURCH BUILDING, 11 FEET SOUTHEAST OF A POWER LINE POLE, ABOUT LEVEL
AU0254'WITH THE ROAD AND SET IN THE TOP OF A CONCRETE POST PROJECTING 3
AU0254'INCHES ABOVE THE LEVEL OF THE GROUND.
AU0254
AU0254                          STATION RECOVERY (1977)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1977
AU0254'RECOVERED IN GOOD CONDITION.
AU0254
AU0254                          STATION RECOVERY (1982)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1982
AU0254'THE MARK IS ABOVE LEVEL WITH ROAD.
AU0254'RECOVERED IN GOOD CONDITION, NEW DESCRIPTION FOLLOWS.  0.3 KILOMETER
AU0254'(0.2 MILE) NORTHWEST ALONG U.S. HIGHWAY 90 FROM THE SOUTHEAST END OF
AU0254'THE HIGHWAY BRIDGE OVER BAYOU BLACK IN GIBSON, THENCE 0.3 KILOMETER
AU0254'(0.2 MILE) NORTHEAST ALONG STATE HIGHWAY 20, THENCE 2.2 KILOMETERS
AU0254'(1.4 MILES) NORTH ALONG DEADWOOD ROAD (PARISH ROAD 30) TO THE ROSE
AU0254'HILL BAPTIST CHURCH AND THE MARK ON THE RIGHT, 10.97 METERS (36.0
AU0254'FEET) SOUTH OF THE CENTER OF DEADWOOD ROAD, 33.22 METERS (109.0 FEET)
AU0254'NORTH OF REFERENCE MARK GIBSON RM 2, 17.98 METERS (59.0 FEET)
AU0254'NORTHWEST OF THE NORTHWEST CORNER OF THE CHURCH, 8.83 METERS (29.0
AU0254'FEET) WEST OF THE CENTER OF THE SHELL ENTRANCE DRIVE OF THE CHURCH,
AU0254'3.35 METERS (11.0 FEET) SOUTHEAST OF A POWER POLE.
AU0254
AU0254                          STATION RECOVERY (1993)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993
AU0254'0.1 KM (0.05 MI) NORTHERLY ALONG CAROLL STREET FROM THE POST OFFICE
AU0254'IN GIBSON, THENCE 0.7 KM (0.45 MI) WESTERLY ALONG STATE HIGHWAY 20,
AU0254'THENCE 2.3 KM (1.40 MI) NORTHERLY ALONG DEADWOOD ROAD, 17.9 M (58.7
AU0254'FT) NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE ROSE HILL BAPTIST
AU0254'CHURCH, 10.9 M (35.8 FT) SOUTH OF AND LEVEL WITH THE CENTERLINE OF
AU0254'THE ROAD, 9.0 M (29.5 FT) WEST OF THE CENTER OF A ROAD LEADING TO THE
AU0254'CHURCH, 3.2 M (10.5 FT) SOUTHEAST OF A UTILITY LIGHT POLE WITH A
AU0254'TRANSFORMER ATTACHED, AND THE MONUMENT IS FLUSH WITH THE GROUND
AU0254'SURFACE.
AU0254
AU0254                          STATION RECOVERY (1995)
AU0254
AU0254'RECOVERY NOTE BY MORRIS P HEBERT INCORPORATED 1995 (CSD)
AU0254'RECOVERED AS DESCRIBED.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
AU3359 ***********************************************************************
AU3359  DESIGNATION -  R 156 RESET
AU3359  PID         -  AU3359
AU3359  STATE/COUNTY-  LA/ORLEANS
AU3359  COUNTRY     -  US
AU3359  USGS QUAD   -  NEW ORLEANS EAST (2018)
AU3359
AU3359                        *CURRENT SURVEY CONTROL
AU3359 ______________________________________________________________________
AU3359* NAD 83(1986) POSITION- 29 56 19.     (N) 090 03 45.     (W)    SCALED
AU3359* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AU3359  **This station is located in a suspected subsidence area (see below).
AU3359 ______________________________________________________________________
AU3359  GEOID HEIGHT    -        -25.936 (meters)                      GEOID18
AU3359  DYNAMIC HEIGHT  -          5.454 (meters)       17.89  (feet) COMP
AU3359  MODELED GRAVITY -    979,312.5   (mgal)                        NAVD 88
AU3359
AU3359.The horizontal coordinates were scaled from a map and have
AU3359.an estimated accuracy of +/- 6 seconds.
AU3359
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AU3359.** This station is in an area of known vertical motion. If an
AU3359.** orthometric height was ever established but is not available
AU3359.** in the current survey control section, the orthometric height
AU3359.** is considered suspect.  Suspect heights are available in the
AU3359.** superseded section only if requested.
AU3359
AU3359.Significant digits in the geoid height do not necessarily reflect accuracy.
AU3359.GEOID18 height accuracy estimate available here.
AU3359
AU3359.Click photographs - Photos may exist for this station.
AU3359
AU3359.The dynamic height is computed by dividing the NAVD 88
AU3359.geopotential number by the normal gravity value computed on the
AU3359.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AU3359.degrees latitude (g = 980.6199 gals.).
AU3359
AU3359.The modeled gravity was interpolated from observed gravity values.
AU3359
AU3359;                    North         East     Units  Estimated Accuracy
AU3359;SPC LA S     -   160,140.    1,122,680.      MT  (+/- 180 meters Scaled)
AU3359
AU3359_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP835156(NAD 83)
AU3359
AU3359                           SUPERSEDED SURVEY CONTROL
AU3359
AU3359  NAVD 88 (12/05/96)     5.461  (m)           17.92   (f) ADJUSTED    1 2
AU3359  NAVD 88 (02/14/94)     5.451  (m)           17.88   (f) SUPERSEDED  1 2
AU3359  NGVD 29 (05/21/91)     5.511  (m)           18.08   (f) ADJUSTED    1 2
AU3359
AU3359.Superseded values are not recommended for survey control.
AU3359
AU3359.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU3359.See file dsdata.pdf to determine how the superseded data were derived.
AU3359
AU3359_MARKER: DV = VERTICAL CONTROL DISK
AU3359_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
AU3359_SP_SET: CURB
AU3359_STAMPING: R 156 RESET 1988
AU3359_MARK LOGO: NGS
AU3359_MAGNETIC: N = NO MAGNETIC MATERIAL
AU3359_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AU3359_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
AU3359+SATELLITE: SATELLITE OBSERVATIONS - November 08, 1994
AU3359
AU3359  HISTORY     - Date     Condition        Report By
AU3359  HISTORY     - 1988     MONUMENTED       LADTD
AU3359  HISTORY     - 19901119 GOOD             NGS
AU3359  HISTORY     - 19941108 GOOD             NGS
AU3359
AU3359                           STATION DESCRIPTION
AU3359
AU3359'DESCRIBED BY LA TRANSP AND DEV 1988
AU3359'THE STATION IS LOCATED IN NEW ORLEANS NEAR THE NORTHWEST CORNER OF THE
AU3359'THALIA STREET WHARF ON THE MISSISSIPPI RIVER FRONT UNDER THE EAST
AU3359'BOUND LANES OF THE GREATER NEW ORLEANS BRIDGE IN THE FOOTING OF THE
AU3359'FIRST PIER FROM THE WATERS EDGE.  OWNERSHIP--LOUISIANA DEPARTMEANT OF
AU3359'TRANSPORTATION AND DEVELOPMENT.
AU3359'THE STATION IS 16.2 M (53.1 FT) NORTHWEST FROM THE NORTHWEST CORNER OF
AU3359'THE THALIA STREET WHARF, 15.2 M (49.9 FT) NORTHEAST FROM A FIRE
AU3359'HYDRANT, 4.9 M (16.1 FT) SOUTH FROM THE CENTER OF THE EAST SIDE OF THE
AU3359'SOUTH PIER AND 0.5 M (1.6 FT) NORTH-NORTHEAST FROM A RETAINING WALL
AU3359'FOR THE THALIA STREET DOCKS.  THE MARK IS ABOUT 0.30 M (1.0 FT) BELOW
AU3359'THE DOCKS.
AU3359
AU3359                           STATION RECOVERY (1990)
AU3359
AU3359'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
AU3359'IN NEW ORLEANS, AT THE INTERSECTION OF THALIA STREET AND THE NEW
AU3359'ORLEANS PUBLIC BELT RAILROAD, IN THE SOUTHEAST CORNER OF THE PILE CAP
AU3359'FOR THE 1ST PIER (WEST OF THE RIVER) OF THE WESTBOUND GREATER NEW
AU3359'ORLEANS BRIDGE SPANNING THE MISSISSIPPI RIVER, 21.0 M (68.9 FT) EAST
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 AU3359'OF THE NEAR RAIL, 4.1 M (13.5 FT) SOUTHEAST OF THE SOUTHEAST CORNER
 AU3359'OF THE PIER, 2.9 M (9.5 FT) NORTH OF THE EXTENDED CENTER OF THE
 AU3359'STREET, AND 0.5 M (1.6 FT) ABOVE THE LEVEL OF THE TRACK.
 AU3359
 AU3359                          STATION RECOVERY (1994)
 AU3359
 AU3359'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GAS)
 AU3359'IN NEW ORLEANS, AT THE INTERSECTION OF THALIA STREET AND THE NEW
 AU3359'ORLEANS PUBLIC BELT RAILROAD, IN THE SOUTHEAST CORNER OF A CONCRETE
 AU3359'CURB SURROUNDING THE PILE CAP FOR THE FIRST PIER WEST OF THE
 AU3359'MISSISSIPPI RIVER OF THE WESTBOUND GREATER NEW ORLEANS BRIDGE SPANNING
 AU3359'THE RIVER, 21.0 M (68.9 FT) EAST OF THE NEAR RAIL, 4.1 M (13.5 FT)
 AU3359'SOUTHEAST OF THE SOUTHEAST CORNER OF THE PIER, 2.9 M (9.5 FT) NORTH OF
 AU3359'THE EXTENDED CENTER OF THE STREET, AND 0.5 M (1.6 FT) ABOVE THE LEVEL
 AU3359'OF THE TRACK.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
 BJ1449 ***********************************************************************
 BJ1449  DESIGNATION -  B 157
 BJ1449  PID         -  BJ1449
 BJ1449  STATE/COUNTY-  LA/ORLEANS
 BJ1449  COUNTRY     -  US
 BJ1449  USGS QUAD   -  SPANISH FORT (2018)
 BJ1449
 BJ1449                        *CURRENT SURVEY CONTROL
 BJ1449  ______________________________________________________________________
 BJ1449* NAD 83(1986) POSITION- 30 00 36.     (N) 090 01 07.     (W)    SCALED
 BJ1449* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 BJ1449  **This station is located in a suspected subsidence area (see below).
 BJ1449  ______________________________________________________________________
 BJ1449  GEOID HEIGHT    -        -26.118 (meters)                      GEOID18
 BJ1449
 BJ1449.The horizontal coordinates were scaled from a map and have
 BJ1449.an estimated accuracy of +/- 6 seconds.
 BJ1449
 BJ1449.** This station is in an area of known vertical motion. If an
 BJ1449.** orthometric height was ever established but is not available
 BJ1449.** in the current survey control section, the orthometric height
 BJ1449.** is considered suspect.  Suspect heights are available in the
 BJ1449.** superseded section only if requested.
 BJ1449
 BJ1449.Significant digits in the geoid height do not necessarily reflect accuracy.
 BJ1449.GEOID18 height accuracy estimate available here.
 BJ1449
 BJ1449.Click photographs - Photos may exist for this station.
 BJ1449
 BJ1449;                    North         East     Units  Estimated Accuracy
 BJ1449;SPC LA S     -   168,100.    1,126,830.      MT  (+/- 180 meters Scaled)
 BJ1449
 BJ1449_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP875236(NAD 83)
 BJ1449
 BJ1449                          SUPERSEDED SURVEY CONTROL
 BJ1449
 BJ1449  NGVD 29 (11/26/84)    0.593  (m)            1.95   (f) ADJUSTED    1 2
 BJ1449
 BJ1449.Superseded values are not recommended for survey control.
 BJ1449
 BJ1449.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 BJ1449.See file dsdata.pdf to determine how the superseded data were derived.
 BJ1449
 BJ1449_MARKER: DB = BENCH MARK DISK
 BJ1449_SETTING: 30 = SET IN A LIGHT STRUCTURE
 BJ1449_SP_SET: CURBING
 BJ1449_STAMPING: B 157 1955
 BJ1449_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
 BJ1449
 BJ1449  HISTORY     - Date     Condition        Report By
 BJ1449  HISTORY     - 1955     MONUMENTED       CGS
 BJ1449  HISTORY     - 1985     MARK NOT FOUND   NGS
 BJ1449
 BJ1449                          STATION DESCRIPTION
 BJ1449
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 BJ1449'DESCRIBED BY COAST AND GEODETIC SURVEY 1955
 BJ1449'0.55 MI E FROM NEW ORLEANS.
 BJ1449'ABOUT 0.55 MILE EAST ALONG U.S. HIGHWAY 90 FROM BRIDGE OVER INNER
 BJ1449'HARBOR NAVIGATION CANAL AT NEW ORLEANS, ABOUT 0.15 MILE EAST OF
 BJ1449'INTERSECTION OF DOWNMAN ROAD, IN THE TOP OF THE CONCRETE CURBING OF
 BJ1449'CONCRETE FOUNDATION OF GIARDINAS SHELL SERVICE STATION WHICH IS ON
 BJ1449'SOUTH SIDE OF HIGHWAY, 1 FOOT NORTHEAST OF NORTHWEST CORNER OF
 BJ1449'BUILDING, 1/2 FOOT EAST OF WEST END OF CURBING AND ABOUT 1 FOOT ABOVE
 BJ1449'LEVEL OF HIGHWAY.
 BJ1449
 BJ1449                          STATION RECOVERY (1985)
 BJ1449
 BJ1449'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985
 BJ1449'NOT RECOVERED, THE CONCRETE FOUNDATION HAS BEEN RESURFACED AT THE
 BJ1449'NORTHWEST CORNER, CONSIDER DESTROYED.
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Prior to this change, you would have seen the below datasheets with the VERT ORDER and orthometric height messages highlighted in red. The ORTHO HEIGHT line is highlighted in green.

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Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
 AJ5822 ***********************************************************************
 AJ5822  TIDAL BM     -  This is a Tidal Bench Mark.
 AJ5822  DESIGNATION -  874 7766 D TIDAL
 AJ5822  PID          -  AJ5822
 AJ5822  STATE/COUNTY-  MS/HANCOCK
 AJ5822  COUNTRY      -  US
 AJ5822  USGS QUAD    -  BAY SAINT LOUIS (2018)
 AJ5822
 AJ5822                        *CURRENT SURVEY CONTROL
 AJ5822  ______________________________________________________________________
 AJ5822* NAD 83(2011) POSITION- 30 17 06.34303(N) 089 21 58.60155(W)   ADJUSTED
 AJ5822* NAD 83(2011) ELLIP HT-   -25.540 (meters)        (06/27/12)   ADJUSTED
 AJ5822* NAD 83(2011) EPOCH    -  2010.00
 AJ5822* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AJ5822  **This station is located in a suspected subsidence area (see below).
 AJ5822  ______________________________________________________________________
 AJ5822  GEOID HEIGHT    -        -27.281 (meters)                     GEOID18
 AJ5822  NAD 83(2011) X  -     60,968.439 (meters)                     COMP
 AJ5822  NAD 83(2011) Y  - -5,512,027.282 (meters)                     COMP
 AJ5822  NAD 83(2011) Z  -  3,197,691.464 (meters)                     COMP
 AJ5822  LAPLACE CORR    -         -2.17  (seconds)                    DEFLEC18
 AJ5822  VERT ORDER      -  THIRD
 AJ5822
 AJ5822  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AJ5822  Standards:
 AJ5822         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AJ5822            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
 AJ5822  ------------------------------------------------------------------
 AJ5822  NETWORK    1.92   5.47          0.80   0.75   2.79     -0.28271968
 AJ5822  ------------------------------------------------------------------
 AJ5822  Click here for local accuracies and other accuracy information.
 AJ5822
 AJ5822.The horizontal coordinates were established by GPS observations
 AJ5822.and adjusted by the National Geodetic Survey in June 2012.
 AJ5822
 AJ5822.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AJ5822.been affixed to the stable North American tectonic plate. See
 AJ5822.NA2011 for more information.
 AJ5822
 AJ5822.The horizontal coordinates are valid at the epoch date displayed above
 AJ5822.which is a decimal equivalence of Year/Month/Day.
 AJ5822
 AJ5822.** This station is in an area of known vertical motion. If an
 AJ5822.** orthometric height was ever established but is not available
 AJ5822.** in the current survey control section, the orthometric height
 AJ5822.** is considered suspect.  Suspect heights are available in the
 AJ5822.** superseded section only if requested.
 AJ5822
 AJ5822.The orthometric height was determined by differential leveling.
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AJ5822.The vertical network tie was performed by a horz. field party for horz.
AJ5822.obs reductions. Reset procedures were used to establish the elevation.
AJ5822
AJ5822.Significant digits in the geoid height do not necessarily reflect accuracy.
AJ5822.GEOID18 height accuracy estimate available here.
AJ5822
AJ5822.This Tidal Bench Mark is designated as VM 13300
AJ5822.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
AJ5822
AJ5822.Click photographs - Photos may exist for this station.
AJ5822
AJ5822.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AJ5822
AJ5822.The Laplace correction was computed from DEFLEC18 derived deflections.
AJ5822
AJ5822.The ellipsoidal height was determined by GPS observations
AJ5822.and is referenced to NAD 83.
AJ5822
AJ5822. The following values were computed from the NAD 83(2011) position.
AJ5822
AJ5822;                    North         East     Units Scale Factor Converg.
AJ5822;SPC MS E     -    87,144.222   248,727.947   MT  0.99998242   -0 16 07.6
AJ5822;SPC MS E     -   285,905.67    816,034.94   sFT  0.99998242   -0 16 07.6
AJ5822;UTM  16      - 3,352,747.899   272,401.081   MT  1.00023911   -1 11 37.8
AJ5822
AJ5822!             -  Elev Factor  x  Scale Factor =   Combined Factor
AJ5822!SPC MS E     -   1.00000401  x   0.99998242  =   0.99998643
AJ5822!UTM  16      -   1.00000401  x   1.00023911  =   1.00024312
AJ5822
AJ5822_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU7240152747(NAD 83)
AJ5822
AJ5822|----------------------------------------------------------------------|
AJ5822| PID    Reference Object                    Distance      Geod. Az   |
AJ5822|                                                          dddmmss.s |
AJ5822| AJ5823 874 7766 C TIDAL                  161.881 METERS 22548      |
AJ5822|----------------------------------------------------------------------|
AJ5822
AJ5822                          SUPERSEDED SURVEY CONTROL
AJ5822
AJ5822  NAD 83(2007)-  30 17 06.34304(N)    089 21 58.60212(W) AD(       ) 0
AJ5822  ELLIP H (02/10/07)  -25.507  (m)                       GP(       )
AJ5822  ELLIP H (03/26/02)  -25.500  (m)                       GP(       ) 4 2
AJ5822  NAD 83(1993)-  30 17 06.34316(N)    089 21 58.60211(W) AD(       ) A
AJ5822  ELLIP H (09/10/01)  -25.500  (m)                       GP(       ) 4 2
AJ5822  NAVD 88 (07/15/08)    1.890  (m)            6.20   (f) ADJUSTED    2 1
AJ5822  NAVD 88               1.89   (m)            6.2    (f) LEVELING    3
AJ5822
AJ5822.Superseded values are not recommended for survey control.
AJ5822
AJ5822.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ5822.See file dsdata.pdf to determine how the superseded data were derived.
AJ5822
AJ5822_MARKER: DJ = TIDAL STATION DISK
AJ5822_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AJ5822_STAMPING: 7766 D 1996
AJ5822_MARK LOGO: NOS
AJ5822_PROJECTION: RECESSED 3 CENTIMETERS
AJ5822_MAGNETIC: N = NO MAGNETIC MATERIAL
AJ5822_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AJ5822_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ5822+SATELLITE: SATELLITE OBSERVATIONS - August 08, 2018
AJ5822_ROD/PIPE-DEPTH: 11 meters
AJ5822
AJ5822  HISTORY     - Date     Condition        Report By
AJ5822  HISTORY     - 1996     MONUMENTED       NOS
AJ5822  HISTORY     - 19960220 GOOD             NOS
AJ5822  HISTORY     - 20010710 GOOD             NGS
AJ5822  HISTORY     - 20100708 POOR             PICINC
AJ5822  HISTORY     - 20180808 POOR             MSDOT
AJ5822
AJ5822                          STATION DESCRIPTION
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AJ5822
AJ5822'DESCRIBED BY NATIONAL OCEAN SERVICE 1996 (RJG)
AJ5822'RECOVERED AS DESCRIBED.
AJ5822
AJ5822                          STATION RECOVERY (2001)
AJ5822
AJ5822'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2001
AJ5822'STATION 874 7766 C IS LOCATED ON THE MISSISSIPPI GULF COAST AT
AJ5822'WAVELAND.  TO REACH THE STATION FROM THE INTERSECTION OF US 90,
AJ5822'ROUTE 43, AND NICHOLSON AVE. IN WAVELAND, DRIVE SOUTHEAST ON
AJ5822'NICHOLSON AVE. FOR 1.3 MI TO A RAILROAD CROSSING.  CONTINUE ON
AJ5822'NICHOLSON AVE. FOR 0.4 MI TO THE T INTERSECTION WITH N. BEACH BLVD.
AJ5822'TURN RIGHT AND PROCEED SOUTHWEST ON N. BEACH BLVD. FOR 0.5 MI TO
AJ5822'STATION 7766 D ON THE RIGHT, LANDWARD, SIDE OF N. BEACH BLVD.  THE
AJ5822'STATION IS IN THE FRONT YARD OF A HOUSE AT 231 BEACH BLVD..  IT IS
AJ5822'29.45 M SW OF THE CENTERLINE OF LAFITTE DR., 8.8 M NW OF THE
AJ5822'CENTERLINE OF BEACH BLVD., 14.65 M NE OF THE DRIVEWAY, AND 1.2 M SE
AJ5822'OF A POWER POLE WITH 2 TRANSFORMERS.  THE ACCESS COVER MAY BE
AJ5822'BURIED A FEW CENTIMETERS.
AJ5822'
AJ5822
AJ5822                          STATION RECOVERY (2010)
AJ5822
AJ5822'RECOVERY NOTE BY PICKERING INCORPORATED 2010
AJ5822'MARK WAS FOUND DISTURBED.  THE CAP ON TOP OF THE ROD MARKER WAS BENT.
AJ5822'
AJ5822'ALSO, ANY REFERENCES TO HOUSES OR ADDRESSES IN THE DESCRIPTION ARE NO
AJ5822'
AJ5822'LONGER HELPFUL BECAUSE ALL HOUSES IN THE VICINITY OF THE MARK HAVE
AJ5822'BEEN
AJ5822'DESTROYED SINCE THE 2001 UPDATE.
AJ5822
AJ5822                          STATION RECOVERY (2018)
AJ5822
AJ5822'RECOVERY NOTE BY MS DEPT TRANS 2018 (TPO)
AJ5822'MARK RECOVERED IN POOR CONDITION.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
AU0254 ***********************************************************************
AU0254  DESIGNATION -  GIBSON
AU0254  PID         -  AU0254
AU0254  STATE/COUNTY-  LA/TERREBONNE
AU0254  COUNTRY     -  US
AU0254  USGS QUAD   -  GIBSON (2018)
AU0254
AU0254                        *CURRENT SURVEY CONTROL
AU0254 ______________________________________________________________________
AU0254* NAD 83(2011) POSITION- 29 42 20.07088(N) 090 59 30.64198(W)   ADJUSTED
AU0254* NAD 83(2011) ELLIP HT-   -24.933 (meters)        (06/27/12)   ADJUSTED
AU0254* NAD 83(2011) EPOCH   -  2010.00
AU0254* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AU0254  **This station is located in a suspected subsidence area (see below).
AU0254 ______________________________________________________________________
AU0254  GEOID HEIGHT    -        -25.507 (meters)                     GEOID18
AU0254  NAD 83(2011) X  -    -95,975.496 (meters)                     COMP
AU0254  NAD 83(2011) Y  - -5,543,650.043 (meters)                     COMP
AU0254  NAD 83(2011) Z  -  3,142,055.128 (meters)                     COMP
AU0254  LAPLACE CORR    -          0.15  (seconds)                    DEFLEC18
AU0254  VERT ORDER      -  THIRD
AU0254
AU0254  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AU0254  Standards:
AU0254         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AU0254            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AU0254  ------------------------------------------------------------------
AU0254  NETWORK    3.56  20.83           1.16   1.64  10.63      0.26121615
AU0254  ------------------------------------------------------------------
AU0254  Click here for local accuracies and other accuracy information.
AU0254
AU0254.The horizontal coordinates were established by GPS observations
AU0254.and adjusted by the National Geodetic Survey in June 2012.
AU0254
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AU0254.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AU0254.been affixed to the stable North American tectonic plate. See
AU0254.NA2011 for more information.
AU0254
AU0254.The horizontal coordinates are valid at the epoch date displayed above
AU0254.which is a decimal equivalence of Year/Month/Day.
AU0254
AU0254.** This station is in an area of known vertical motion. If an
AU0254.** orthometric height was ever established but is not available
AU0254.** in the current survey control section, the orthometric height
AU0254.** is considered suspect.  Suspect heights are available in the
AU0254.** superseded section only if requested.
AU0254
AU0254.The orthometric height was determined by differential leveling.
AU0254.The vertical network tie was performed by a horz. field party for horz.
AU0254.obs reductions. Reset procedures were used to establish the elevation.
AU0254
AU0254.Significant digits in the geoid height do not necessarily reflect accuracy.
AU0254.GEOID18 height accuracy estimate available here.
AU0254
AU0254.Click photographs - Photos may exist for this station.
AU0254
AU0254.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AU0254
AU0254.The Laplace correction was computed from DEFLEC18 derived deflections.
AU0254
AU0254.The ellipsoidal height was determined by GPS observations
AU0254.and is referenced to NAD 83.
AU0254
AU0254. The following values were computed from the NAD 83(2011) position.
AU0254
AU0254;                    North         East     Units Scale Factor Converg.
AU0254;SPC LA S     -   133,680.955 1,033,043.699   MT  0.99993894   +0 10 14.7
AU0254;SPC LA S     -   438,584.93  3,389,244.20   sFT  0.99993894   +0 10 14.7
AU0254;UTM  15      - 3,287,848.949   694,271.462   MT  1.00006569   +0 59 43.6
AU0254
AU0254!             -  Elev Factor  x  Scale Factor =   Combined Factor
AU0254!SPC LA S     -   1.00000392  x   0.99993894  =   0.99994286
AU0254!UTM  15      -   1.00000392  x   1.00006569  =   1.00006961
AU0254
AU0254:                Primary Azimuth Mark                    Grid Az
AU0254:SPC LA S     -  DONNER SAWMILL WATER TANK               125 28 19.9
AU0254:UTM  15      -  DONNER SAWMILL WATER TANK               124 38 51.0
AU0254
AU0254_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RXN9427187848(NAD 83)
AU0254
AU0254|----------------------------------------------------------------------|
AU0254| PID    Reference Object                    Distance      Geod. Az   |
AU0254|                                                          dddmmss.s |
AU0254| AU1326 GIBSON RM 1                                       08552     |
AU0254| AH6177 GIBSON AZ MK                      234.268 METERS 09138     |
AU0254| AU3188 DONNER SAWMILL WATER TANK         APPROX. 3.2 KM 1253834.6 |
AU0254| AU0255 GIBSON RM 2                        33.245 METERS 16805     |
AU0254|----------------------------------------------------------------------|
AU0254
AU0254                          SUPERSEDED SURVEY CONTROL
AU0254
AU0254  NAD 83(2007)-  29 42 20.07102(N)    090 59 30.64263(W) AD(       ) 0
AU0254  ELLIP H (02/10/07)  -24.891  (m)                       GP(       )
AU0254  ELLIP H (02/21/02)  -24.900  (m)                       GP(       ) 5 1
AU0254  NAD 83(1992)-  29 42 20.07033(N)    090 59 30.64115(W) AD(       ) 1
AU0254  ELLIP H (12/17/98)  -24.857  (m)                       GP(       ) 4 2
AU0254  NAD 83(1992)-  29 42 20.06582(N)    090 59 30.63432(W) AD(       ) 1
AU0254  NAD 83(1986)-  29 42 20.08904(N)    090 59 30.63651(W) AD(       ) 1
AU0254  NAD 27      -  29 42 19.34000(N)    090 59 30.28500(W) AD(       ) 1
AU0254  NAVD 88              0.84   (m)           2.8    (f) LEVELING    3
AU0254  NAVD 88 (02/14/94)   0.835  (m)           2.74   (f) ADJUSTED    1 1
AU0254  NAVD 88 (06/15/91)   0.877  (m)           2.88   (f) SUPERSEDED  1 1
AU0254  NGVD 29              0.97   (m)           3.2    (f) LEVELING    3
AU0254  NGVD 29 (11/26/84)   0.922  (m)           3.02   (f) ADJUSTED    1 1
AU0254
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AU0254.Superseded values are not recommended for survey control.
AU0254
AU0254.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU0254.See file dsdata.pdf to determine how the superseded data were derived.
AU0254
AU0254_MARKER: DS = TRIANGULATION STATION DISK
AU0254_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AU0254_STAMPING: GIBSON 1931
AU0254_MARK LOGO: CGS
AU0254_PROJECTION: FLUSH
AU0254_MAGNETIC: O = OTHER; SEE DESCRIPTION
AU0254_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AU0254+STABILITY: SURFACE MOTION
AU0254_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AU0254+SATELLITE: SATELLITE OBSERVATIONS - January 03, 1995
AU0254
AU0254  HISTORY     - Date     Condition        Report By
AU0254  HISTORY     - 1931     MONUMENTED       CGS
AU0254  HISTORY     - 1938     GOOD             LAGS
AU0254  HISTORY     - 1948     GOOD             CGS
AU0254  HISTORY     - 1955     GOOD             CGS
AU0254  HISTORY     - 1969     GOOD             CGS
AU0254  HISTORY     - 1977     GOOD             NGS
AU0254  HISTORY     - 1982     GOOD             NGS
AU0254  HISTORY     - 19930223 GOOD             NGS
AU0254  HISTORY     - 19950103 GOOD             MPHI
AU0254
AU0254                          STATION DESCRIPTION
AU0254
AU0254'DESCRIBED BY COAST AND GEODETIC SURVEY 1931 (FLG)
AU0254'STATION IS ABOUT 12 MILES SW OF THIBODAUX, 2.2 MILES W OF THE
AU0254'VILLAGE OF DONNER, AND 1.4 MILES N OF GIBSON.
AU0254'
AU0254'SURFACE, UNDERGROUND, AND REFERENCE MARKS ARE STANDARD DISKS
AU0254'SET IN CONCRETE.
AU0254'
AU0254'SURFACE MARK PROJECTS 4 INCHES.
AU0254'
AU0254'REFERENCE MARK NO. 1 PROJECTS 7 INCHES AND IS ON INSIDE OF A
AU0254'BEND IN HIGHWAY 1/8 MILE E OF CHURCH, 25 FEET S OF CENTER LINE
AU0254'OF ROAD, 200 FEET E OF A WOODEN SHED AND APPROXIMATELY 1,000 FEET
AU0254'FROM STATION N 85 DEG 52 MIN E.
AU0254'
AU0254'REFERENCE MARK NO. 2, A FLUSH MARK, IS 144 FEET S (IN LINE WITH
AU0254'THE STATION) FROM CENTER LINE OF HIGHWAY, 20.7 FEET SW OF SW
AU0254'CORNER OF CHURCH, 25.2 FEET N OF S FENCE LINE OF CHURCHYARD,
AU0254'AND 109.07 FEET FROM STATION S 11 DEG 55 MIN E.
AU0254'
AU0254'REACHED FROM THIBODAUX BY ROUTE 28 WHICH IS THE MAIN GRAVEL
AU0254'ROAD TO MORGAN CITY, PASSING THROUGH CHACAHOULA AND DONNER.
AU0254'STATION IS ON S SIDE OF ROAD, 59.0 FEET NW OF NW CORNER OF ROSE
AU0254'HILL BAPTIST CHURCH, 35 FEET S OF CENTER LINE OF HIGHWAY, AND IN
AU0254'NORTH SIDE CENTER OF CHURCHYARD, 14.4 FEET S OF A WIRE FENCE.
AU0254
AU0254                          STATION RECOVERY (1938)
AU0254
AU0254'RECOVERY NOTE BY LOUISIANA GEODETIC SURVEY 1938
AU0254'CHANGES AS FOLLOWS--ABOUT 12 MILES SW OF THIBODAUX.  23 MILES W
AU0254'OF HOUMA.  2.2 MILES W OF THE VILLAGE OF DONNER, AND 1.4 MILES N
AU0254'OF GIBSON, LOUISIANA.  REACHED FROM THIBODAUX BY STATE HIGHWAY 28,
AU0254'FROM HOUMA BY U.S. HIGHWAY 90.  TO REACH FROM INTERSECTION OF
AU0254'HIGHWAYS 28 AND 90, WHICH OCCURS 0.5 MILE N OF GIBSON, PROCEED
AU0254'0.2 MILE E ON HIGHWAY 28 TO GRAVEL ROAD WHICH PASSES BENEATH
AU0254'SOUTHERN PACIFIC RAILROAD GRADE, TURN N AND PROCEED FOR 1.2
AU0254'MILES TO ROSE HILL BAPTIST CHURCH.  STATION IS ON S SIDE OF
AU0254'ROAD, 59.0 FEET NW OF NW CORNER OF CHURCH.  35 FEET S OF
AU0254'CENTER LINE OF ROAD.  14.4 FEET S OF A WIRE FENCE.  (FROM THIS
AU0254'POINT ON THE ORIGINAL DESCRIPTION IS COMPETENT).  THESE
AU0254'CHANGES ARE NECESSARY BECAUSE OF THE CONSTRUCTION OF A NEW
AU0254'CONCRETE HIGHWAY FROM THIBODAUX.
AU0254
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AU0254                          STATION RECOVERY (1948)
AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1948 (CWC)
AU0254'STATION AND R.M. 2 WERE RECOVERED IN GOOD CONDITION.  THE 1938
AU0254'RECOVERY NOTE BY THE LOUISIANA GEODETIC SURVEY IS ADEQUATE
AU0254'FOR FUTURE RECOVERY, BUT THE FOLLOWING MINOR CHANGES AT THE
AU0254'STATION SITE WERE NOTED--
AU0254'
AU0254'THE STATION IS 31.8 FEET S OF THE CENTER LINE OF A SHELL ROAD
AU0254'AND 33.2 FEET SW OF THE GATE LEADING TO THE CHURCH.
AU0254'
AU0254'THE INTERSECTION OF HIGHWAYS 90 AND 28 IS 0.5 MILE W OF GIBSON,
AU0254'NOT N.
AU0254'
AU0254'R.M. 1 WAS SEARCHED FOR BUT NOT RECOVERED.
AU0254
AU0254                          STATION RECOVERY (1955)
AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1955 (HDR)
AU0254'0.5 MI. W ALONG THE TEXAS AND NEW ORLEANS RAILROAD FROM THE
AU0254'STATION AT GIBSON, THENCE 1.4 MI. N ALONG A GRAVELED ROAD,
AU0254'31 FT. S OF THE CENTERLINE OF A ROAD, 59 FT. NW OF THE NW CORNER
AU0254'OF THE ROSE HILL BAPTIST CHURCH, 30 FT. W OF THE CENTERLINE
AU0254'OF A DRIVEWAY LEADING TO THE CHURCH, 2 FT. SW OF A WITNESS POST,
AU0254'A TRIANGULATION-STATION DISK, SET IN THE TOP OF A CONCRETE POST
AU0254'PROJECTING 0.4 FT. ABOVE THE GROUND, AND STAMPED GIBSON 1931.
AU0254'
AU0254'REFERENCE MARK 1 IS 0.1 MI. E OF THE TRIANGULATION STATION, 80
AU0254'FT. W OF A FOOTWALK, 127 FT. NW OF THE N CORNER OF AN OLD SHED,
AU0254'28 FT. SW OF THE CENTERLINE OF A ROAD, 17.6 FT. SW OF A WITNESS
AU0254'POST, A REFERENCE-MARK DISK, SET IN THE TOP OF A CONCRETE POST
AU0254'PROJECTING 0.4 FT. ABOVE THE GROUND, AND STAMPED GIBSON NO 1
AU0254'1931.
AU0254'
AU0254'REFERENCE MARK 2 IS 109 FT. S OF THE TRIANGULATIN STATION, 20.7
AU0254'FT. SW OF THE SW CORNER OF THE ROSE HILL BAPTIST CHURCH, A
AU0254'REFERENCE-MARK DISK, SET IN THE TOP OF A CONCRETE POST FLUSH WITH
AU0254'THE GROUND, AND STAMPED GIBSON NO 2 1931.
AU0254
AU0254                          STATION RECOVERY (1969)
AU0254
AU0254'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1969
AU0254'1.4 MI NE FROM GIBSON.
AU0254'ABOUT 1.4 MILES NORTHEAST ALONG DEADWOOD ROAD FROM THE SOUTHERN
AU0254'PACIFIC COMPANY RAILROAD OVERPASS OVER THE ROAD AT GIBSON, IN THE LAWN
AU0254'OF THE ROSE HILL BAPTIST CHURCH AND CEMETERY, 59 FEET NORTHWEST OF THE
AU0254'NORTHWEST CORNER OF THE CHURCH BUILDING, 36 FEET SOUTH OF THE CENTER
AU0254'LINE OF THE ROAD, 29 FEET WEST OF THE CENTER LINE OF A DRIVEWAY TO
AU0254'CHURCH BUILDING, 11 FEET SOUTHEAST OF A POWER LINE POLE, ABOUT LEVEL
AU0254'WITH THE ROAD AND SET IN THE TOP OF A CONCRETE POST PROJECTING 3
AU0254'INCHES ABOVE THE LEVEL OF THE GROUND.
AU0254
AU0254                          STATION RECOVERY (1977)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1977
AU0254'RECOVERED IN GOOD CONDITION.
AU0254
AU0254                          STATION RECOVERY (1982)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1982
AU0254'THE MARK IS ABOVE LEVEL WITH ROAD.
AU0254'RECOVERED IN GOOD CONDITION, NEW DESCRIPTION FOLLOWS.  0.3 KILOMETER
AU0254'(0.2 MILE) NORTHWEST ALONG U.S. HIGHWAY 90 FROM THE SOUTHEAST END OF
AU0254'THE HIGHWAY BRIDGE OVER BAYOU BLACK IN GIBSON, THENCE 0.3 KILOMETER
AU0254'(0.2 MILE) NORTHEAST ALONG STATE HIGHWAY 20, THENCE 2.2 KILOMETERS
AU0254'(1.4 MILES) NORTH ALONG DEADWOOD ROAD (PARISH ROAD 30) TO THE ROSE
AU0254'HILL BAPTIST CHURCH AND THE MARK ON THE RIGHT, 10.97 METERS (36.0
AU0254'FEET) SOUTH OF THE CENTER OF DEADWOOD ROAD, 33.22 METERS (109.0 FEET)
AU0254'NORTH OF REFERENCE MARK GIBSON RM 2, 17.98 METERS (59.0 FEET)
AU0254'NORTHWEST OF THE NORTHWEST CORNER OF THE CHURCH, 8.83 METERS (29.0
AU0254'FEET) WEST OF THE CENTER OF THE SHELL ENTRANCE DRIVE OF THE CHURCH,
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AU0254'3.35 METERS (11.0 FEET) SOUTHEAST OF A POWER POLE.
AU0254
AU0254                          STATION RECOVERY (1993)
AU0254
AU0254'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993
AU0254'0.1 KM (0.05 MI) NORTHERLY ALONG CAROLL STREET FROM THE POST OFFICE
AU0254'IN GIBSON, THENCE 0.7 KM (0.45 MI) WESTERLY ALONG STATE HIGHWAY 20,
AU0254'THENCE 2.3 KM (1.40 MI) NORTHERLY ALONG DEADWOOD ROAD, 17.9 M (58.7
AU0254'FT) NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE ROSE HILL BAPTIST
AU0254'CHURCH, 10.9 M (35.8 FT) SOUTH OF AND LEVEL WITH THE CENTERLINE OF
AU0254'THE ROAD, 9.0 M (29.5 FT) WEST OF THE CENTER OF A ROAD LEADING TO THE
AU0254'CHURCH, 3.2 M (10.5 FT) SOUTHEAST OF A UTILITY LIGHT POLE WITH A
AU0254'TRANSFORMER ATTACHED, AND THE MONUMENT IS FLUSH WITH THE GROUND
AU0254'SURFACE.
AU0254
AU0254                          STATION RECOVERY (1995)
AU0254
AU0254'RECOVERY NOTE BY MORRIS P HEBERT INCORPORATED 1995 (CSD)
AU0254'RECOVERED AS DESCRIBED.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
AU3359 ***********************************************************************
AU3359  DESIGNATION -  R 156 RESET
AU3359  PID         -  AU3359
AU3359  STATE/COUNTY-  LA/ORLEANS
AU3359  COUNTRY     -  US
AU3359  USGS QUAD   -  NEW ORLEANS EAST (2018)
AU3359
AU3359                        *CURRENT SURVEY CONTROL
AU3359  ______________________________________________________________________
AU3359* NAD 83(1986) POSITION- 29 56 19.     (N) 090 03 45.     (W)    SCALED
AU3359* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AU3359  **This station is located in a suspected subsidence area (see below).
AU3359  ______________________________________________________________________
AU3359  GEOID HEIGHT    -        -25.936 (meters)                      GEOID18
AU3359  DYNAMIC HEIGHT  -          5.454 (meters)       17.89  (feet) COMP
AU3359  MODELED GRAVITY -    979,312.5   (mgal)                        NAVD 88
AU3359
AU3359  VERT ORDER      -  FIRST     CLASS II
AU3359
AU3359.The horizontal coordinates were scaled from a map and have
AU3359.an estimated accuracy of +/- 6 seconds.
AU3359
AU3359.** This station is in an area of known vertical motion. If an
AU3359.** orthometric height was ever established but is not available
AU3359.** in the current survey control section, the orthometric height
AU3359.** is considered suspect.  Suspect heights are available in the
AU3359.** superseded section only if requested.
AU3359
AU3359.The orthometric height was determined by differential leveling and
AU3359.adjusted by the NATIONAL GEODETIC SURVEY
AU3359.in December 1996.
AU3359
AU3359.Significant digits in the geoid height do not necessarily reflect accuracy.
AU3359.GEOID18 height accuracy estimate available here.
AU3359
AU3359.Click photographs - Photos may exist for this station.
AU3359
AU3359.The dynamic height is computed by dividing the NAVD 88
AU3359.geopotential number by the normal gravity value computed on the
AU3359.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AU3359.degrees latitude (g = 980.6199 gals.).
AU3359
AU3359.The modeled gravity was interpolated from observed gravity values.
AU3359
AU3359;                    North         East     Units  Estimated Accuracy
AU3359;SPC LA S     -   160,140.    1,122,680.      MT  (+/- 180 meters Scaled)
AU3359
AU3359_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP835156(NAD 83)
AU3359
AU3359                          SUPERSEDED SURVEY CONTROL
AU3359
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 AU3359  NAVD 88 (12/05/96)     5.461  (m)           17.92   (f) ADJUSTED    1 2
 AU3359  NAVD 88 (02/14/94)     5.451  (m)           17.88   (f) SUPERSEDED  1 2
 AU3359  NGVD 29 (05/21/91)     5.511  (m)           18.08   (f) ADJUSTED    1 2
 AU3359
 AU3359.Superseded values are not recommended for survey control.
 AU3359
 AU3359.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AU3359.See file dsdata.pdf to determine how the superseded data were derived.
 AU3359
 AU3359_MARKER: DV = VERTICAL CONTROL DISK
 AU3359_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
 AU3359_SP_SET: CURB
 AU3359_STAMPING: R 156 RESET 1988
 AU3359_MARK LOGO: NGS
 AU3359_MAGNETIC: N = NO MAGNETIC MATERIAL
 AU3359_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
 AU3359_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
 AU3359+SATELLITE: SATELLITE OBSERVATIONS - November 08, 1994
 AU3359
 AU3359  HISTORY     - Date     Condition        Report By
 AU3359  HISTORY     - 1988     MONUMENTED       LADTD
 AU3359  HISTORY     - 19901119 GOOD             NGS
 AU3359  HISTORY     - 19941108 GOOD             NGS
 AU3359
 AU3359                          STATION DESCRIPTION
 AU3359
 AU3359'DESCRIBED BY LA TRANSP AND DEV 1988
 AU3359'THE STATION IS LOCATED IN NEW ORLEANS NEAR THE NORTHWEST CORNER OF THE
 AU3359'THALIA STREET WHARF ON THE MISSISSIPPI RIVER FRONT UNDER THE EAST
 AU3359'BOUND LANES OF THE GREATER NEW ORLEANS BRIDGE IN THE FOOTING OF THE
 AU3359'FIRST PIER FROM THE WATERS EDGE.  OWNERSHIP--LOUISIANA DEPARTMEANT OF
 AU3359'TRANSPORTATION AND DEVELOPMENT.
 AU3359'THE STATION IS 16.2 M (53.1 FT) NORTHWEST FROM THE NORTHWEST CORNER OF
 AU3359'THE THALIA STREET WHARF, 15.2 M (49.9 FT) NORTHEAST FROM A FIRE
 AU3359'HYDRANT, 4.9 M (16.1 FT) SOUTH FROM THE CENTER OF THE EAST SIDE OF THE
 AU3359'SOUTH PIER AND 0.5 M (1.6 FT) NORTH-NORTHEAST FROM A RETAINING WALL
 AU3359'FOR THE THALIA STREET DOCKS.  THE MARK IS ABOUT 0.30 M (1.0 FT) BELOW
 AU3359'THE DOCKS.
 AU3359
 AU3359                          STATION RECOVERY (1990)
 AU3359
 AU3359'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
 AU3359'IN NEW ORLEANS, AT THE INTERSECTION OF THALIA STREET AND THE NEW
 AU3359'ORLEANS PUBLIC BELT RAILROAD, IN THE SOUTHEAST CORNER OF THE PILE CAP
 AU3359'FOR THE 1ST PIER (WEST OF THE RIVER) OF THE WESTBOUND GREATER NEW
 AU3359'ORLEANS BRIDGE SPANNING THE MISSISSIPPI RIVER, 21.0 M (68.9 FT) EAST
 AU3359'OF THE NEAR RAIL, 4.1 M (13.5 FT) SOUTHEAST OF THE SOUTHEAST CORNER
 AU3359'OF THE PIER, 2.9 M (9.5 FT) NORTH OF THE EXTENDED CENTER OF THE
 AU3359'STREET, AND 0.5 M (1.6 FT) ABOVE THE LEVEL OF THE TRACK.
 AU3359
 AU3359                          STATION RECOVERY (1994)
 AU3359
 AU3359'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GAS)
 AU3359'IN NEW ORLEANS, AT THE INTERSECTION OF THALIA STREET AND THE NEW
 AU3359'ORLEANS PUBLIC BELT RAILROAD, IN THE SOUTHEAST CORNER OF A CONCRETE
 AU3359'CURB SURROUNDING THE PILE CAP FOR THE FIRST PIER WEST OF THE
 AU3359'MISSISSIPPI RIVER OF THE WESTBOUND GREATER NEW ORLEANS BRIDGE SPANNING
 AU3359'THE RIVER, 21.0 M (68.9 FT) EAST OF THE NEAR RAIL, 4.1 M (13.5 FT)
 AU3359'SOUTHEAST OF THE SOUTHEAST CORNER OF THE PIER, 2.9 M (9.5 FT) NORTH OF
 AU3359'THE EXTENDED CENTER OF THE STREET, AND 0.5 M (1.6 FT) ABOVE THE LEVEL
 AU3359'OF THE TRACK.
1        National Geodetic Survey,   Retrieval Date = JANUARY 29, 2024
 BJ1449 ***********************************************************************
 BJ1449  DESIGNATION -  B 157
 BJ1449  PID         -  BJ1449
 BJ1449  STATE/COUNTY-  LA/ORLEANS
 BJ1449  COUNTRY     -  US
 BJ1449  USGS QUAD   -  SPANISH FORT (2018)
 BJ1449
 BJ1449                         *CURRENT SURVEY CONTROL
 BJ1449  ______________________________________________________________________
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BJ1449* NAD 83(1986) POSITION- 30 00 36.     (N) 090 01 07.     (W)    SCALED
BJ1449* NAVD 88 ORTHO HEIGHT -          **(meters)          **(feet) NOT PUB
BJ1449  **This station is located in a suspected subsidence area (see below).
BJ1449  _____________________________________________________________________
BJ1449  GEOID HEIGHT    -        -26.118 (meters)                      GEOID18
BJ1449  VERT ORDER      -  FIRST     CLASS II (See Below)
BJ1449
BJ1449.The horizontal coordinates were scaled from a map and have
BJ1449.an estimated accuracy of +/- 6 seconds.
BJ1449
BJ1449.** This station is in an area of known vertical motion. If an
BJ1449.** orthometric height was ever established but is not available
BJ1449.** in the current survey control section, the orthometric height
BJ1449.** is considered suspect.  Suspect heights are available in the
BJ1449.** superseded section only if requested.
BJ1449
BJ1449.Significant digits in the geoid height do not necessarily reflect accuracy.
BJ1449.GEOID18 height accuracy estimate available here.
BJ1449
BJ1449.The vertical order pertains to the NGVD 29 superseded value.
BJ1449
BJ1449.Click photographs - Photos may exist for this station.
BJ1449
BJ1449;                    North         East     Units  Estimated Accuracy
BJ1449;SPC LA S     -   168,100.    1,126,830.      MT  (+/- 180 meters Scaled)
BJ1449
BJ1449_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP875236(NAD 83)
BJ1449
BJ1449                          SUPERSEDED SURVEY CONTROL
BJ1449
BJ1449  NGVD 29 (11/26/84)    0.593  (m)            1.95   (f) ADJUSTED    1 2
BJ1449
BJ1449.Superseded values are not recommended for survey control.
BJ1449
BJ1449.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BJ1449.See file dsdata.pdf to determine how the superseded data were derived.
BJ1449
BJ1449_MARKER: DB = BENCH MARK DISK
BJ1449_SETTING: 30 = SET IN A LIGHT STRUCTURE
BJ1449_SP_SET: CURBING
BJ1449_STAMPING: B 157 1955
BJ1449_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
BJ1449
BJ1449  HISTORY     - Date     Condition        Report By
BJ1449  HISTORY     - 1955     MONUMENTED       CGS
BJ1449  HISTORY     - 1985     MARK NOT FOUND   NGS
BJ1449
BJ1449                           STATION DESCRIPTION
BJ1449
BJ1449'DESCRIBED BY COAST AND GEODETIC SURVEY 1955
BJ1449'0.55 MI E FROM NEW ORLEANS.
BJ1449'ABOUT 0.55 MILE EAST ALONG U.S. HIGHWAY 90 FROM BRIDGE OVER INNER
BJ1449'HARBOR NAVIGATION CANAL AT NEW ORLEANS, ABOUT 0.15 MILE EAST OF
BJ1449'INTERSECTION OF DOWNMAN ROAD, IN THE TOP OF THE CONCRETE CURBING OF
BJ1449'CONCRETE FOUNDATION OF GIARDINAS SHELL SERVICE STATION WHICH IS ON
BJ1449'SOUTH SIDE OF HIGHWAY, 1 FOOT NORTHEAST OF NORTHWEST CORNER OF
BJ1449'BUILDING, 1/2 FOOT EAST OF WEST END OF CURBING AND ABOUT 1 FOOT ABOVE
BJ1449'LEVEL OF HIGHWAY.
BJ1449
BJ1449                           STATION RECOVERY (1985)
BJ1449
BJ1449'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985
BJ1449'NOT RECOVERED, THE CONCRETE FOUNDATION HAS BEEN RESURFACED AT THE
BJ1449'NORTHWEST CORNER, CONSIDER DESTROYED.
```

Change #3:

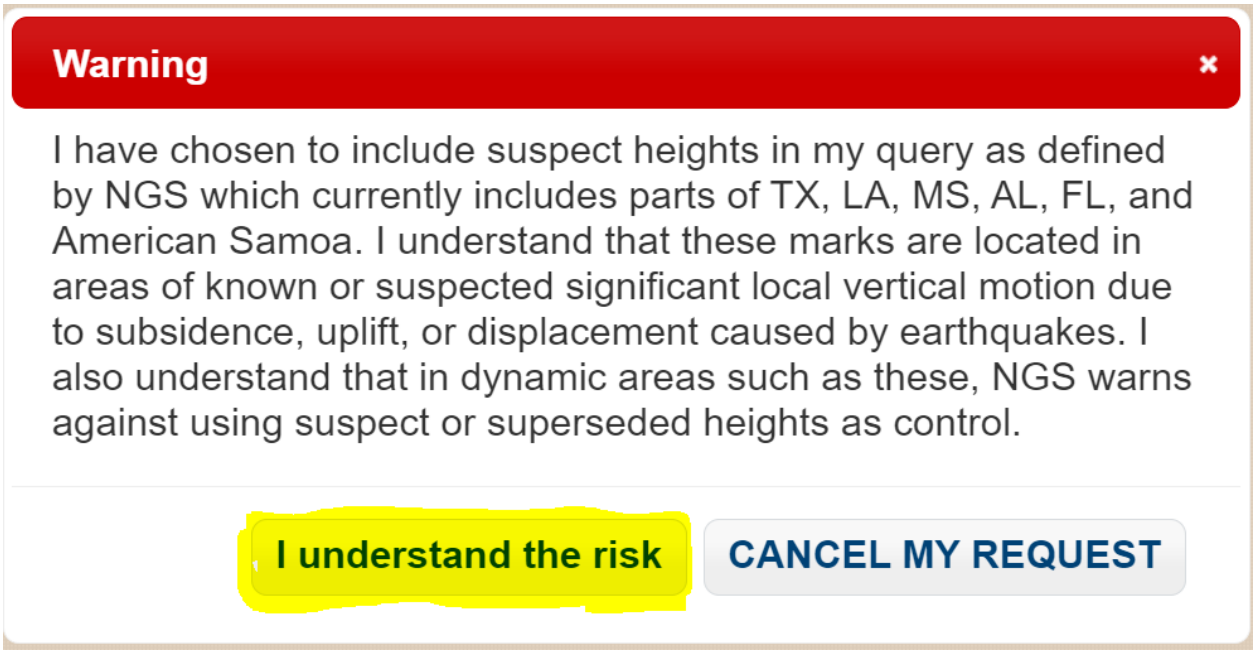
On some datasheets, the geoid models listed in the SUPERSEDED SURVEY CONTROL were being truncated by one character. We have corrected this issue.

To see these changes:

1. Go to https://testaws.nosngs.noaa/cgi-bin/ds_pid.prl.
2. Enter the following PIDs into the PID Box:

```
AG9547
AJ7812
AU2196
DJ2095
FA4563
```

Check the include suspect heights in vertical motion areas checkbox, and then press the *[Submit]* button. When the warnings message pops up as shown below:



press the [I understand the risk] button. On the next page, select the PID radio button, press the [Re-Sort-By] button to sort the marks by PID. Next, press the *[Select All]* button followed by the *[Get Datasheets]* button. You should see the below partial datasheets showing only the SUPERSEDED SURVEY CONTROL section where the geoid models are highlighted in hot pink.

. . .

```
AG9547                          SUPERSEDED SURVEY CONTROL
AG9547
AG9547  NAD 83(2007)-  46 08 49.68105(N)    091 31 01.85344(W) AD(2002.00) 0
AG9547  ELLIP H (02/10/07)  363.217  (m)                       GP(2002.00)
AG9547  NAD 83(1997)-  46 08 49.68112(N)    091 31 01.85405(W) AD(       ) 1
AG9547  ELLIP H (12/26/02)  363.234  (m)                       GP(       ) 3 2
AG9547  NAD 83(1991)-  46 08 49.68092(N)    091 31 01.85294(W) AD(       ) 1
AG9547  ELLIP H (04/30/98)  363.227  (m)                       GP(       ) 3 2
AG9547  NAVD 88 (05/27/14)  391.12   (m)   GEOID12A model used  GPS OBS
AG9547  NAVD 88 (04/30/98)  391.1    (m)   GEOID96  model used  GPS OBS
AG9547
AG9547.Superseded values are not recommended for survey control.
AG9547
```

```
AG9547.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AG9547.See file dsdata.pdf to determine how the superseded data were derived.
AG9547

. . .

AJ7812                          SUPERSEDED SURVEY CONTROL
AJ7812
AJ7812  NAD 83(2007)-  34 55 59.56692(N)    089 59 40.75416(W) AD(2002.00) A
AJ7812  ELLIP H (09/06/11)   71.456  (m)                       GP(2002.00) 4 1
AJ7812  NAD 83(2007)-  34 55 59.56663(N)    089 59 40.75449(W) AD(2002.00) 0
AJ7812  ELLIP H (02/10/07)   71.490  (m)                       GP(2002.00)
AJ7812  ELLIP H (09/08/03)   71.503  (m)                       GP(       ) 4 1
AJ7812  ELLIP H (04/15/02)   71.465  (m)                       GP(       ) 4 2
AJ7812  NAD 83(1993)-  34 55 59.56623(N)    089 59 40.75359(W) AD(       ) B
AJ7812  ELLIP H (02/15/02)   71.462  (m)                       GP(       ) 4 1
AJ7812  NAVD 88 (12/26/12)   98.93   (m)  GEOID12A model used  GPS OBS
AJ7812  NAVD 88 (04/05/04)   98.92   (m)  UNKNOWN  model used  GPS OBS
AJ7812  NAVD 88 (02/15/02)   98.8    (m)  GEOID99  model used  GPS OBS
AJ7812
AJ7812.Superseded values are not recommended for survey control.
AJ7812
AJ7812.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ7812.See file dsdata.pdf to determine how the superseded data were derived.
AJ7812

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AU2196                          SUPERSEDED SURVEY CONTROL
AU2196
AU2196  NAD 83(2011)-  29 55 53.38201(N)    090 08 02.34961(W) AD(2010.00) 0
AU2196  NAD 83(2011)-  29 55 53.38271(N)    090 08 02.34998(W) AD(2010.00) 0
AU2196  ELLIP H (06/27/12)  -22.706  (m)                       GP(2010.00)
AU2196  ELLIP H (10/11/11)  -22.713  (m)                       GP(       ) 4 1
AU2196  NAD 83(2007)-  29 55 53.38277(N)    090 08 02.35071(W) AD(       ) 0
AU2196  ELLIP H (02/10/07)  -22.697  (m)                       GP(       )
AU2196  NAD 83(1992)-  29 55 53.38291(N)    090 08 02.35063(W) AD(       ) B
AU2196  ELLIP H (12/29/04)  -22.700  (m)                       GP(       ) 4 1
AU2196  NAVD 88 (12/26/12)    3.24   (m)  GEOID12A model used  GP(2009.55)
AU2196  NAVD 88 (01/05/06)    3.30   (m)  GEOID03  model used  GP(2004.65)
AU2196  NAVD 88 (05/09/05)    3.41   (m)  USGG2003 model used  GPS OBS
AU2196  NAVD 88 (12/05/96)    3.450  (m)          11.32   (f) ADJUSTED    1 2
AU2196  NAVD 88 (02/14/94)    3.435  (m)          11.27   (f) SUPERSEDED  1 2
AU2196  NGVD 29 (05/21/91)    3.495  (m)          11.47   (f) ADJUSTED    1 2
AU2196  NGVD 29 (??/??/87)    3.546  (m)          11.63   (f) SUPERSEDED  1 2
AU2196
AU2196.Superseded values are not recommended for survey control.
AU2196
AU2196.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU2196.See file dsdata.pdf to determine how the superseded data were derived.
AU2196

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DJ2095                          SUPERSEDED SURVEY CONTROL
DJ2095
DJ2095  NAD 83(2007)-  33 49 56.25921(N)    089 47 37.99712(W) AD(2002.00) A
DJ2095  ELLIP H (09/06/11)   32.658  (m)                       GP(2002.00) 4 1
DJ2095  NAD 83(2007)-  33 49 56.25867(N)    089 47 37.99766(W) AD(2002.00) 1
DJ2095  ELLIP H (02/15/08)   32.695  (m)                       GP(2002.00) 4 2
DJ2095  NAD 83(2007)-  33 49 56.25871(N)    089 47 37.99738(W) AD(2002.00) 0
DJ2095  ELLIP H (02/10/07)   32.693  (m)                       GP(2002.00)
DJ2095  ELLIP H (09/12/01)   32.682  (m)                       GP(       ) 3 1
DJ2095  NAD 83(1993)-  33 49 56.25870(N)    089 47 37.99623(W) AD(       ) B
DJ2095  ELLIP H (01/12/94)   32.736  (m)                       GP(       ) 4 1
DJ2095  NAD 83(1992)-  33 49 56.26428(N)    089 47 37.98777(W) AD(       ) 3
DJ2095  NAD 83(1986)-  33 49 56.26442(N)    089 47 37.98799(W) AD(       ) 3
DJ2095  NAD 27      -  33 49 55.84708(N)    089 47 37.73194(W) AD(       ) 3
DJ2095  NAVD 88 (02/15/08)   59.26   (m)  GEOID03  model used  GPS OBS
DJ2095  NAVD 88 (02/15/02)   59.2    (m)  GEOID99  model used  GPS OBS
```

```
DJ2095  NAVD 88 (04/06/99)    59.2     (m)  GEOID96  model used  GPS OBS
DJ2095  NAVD 88 (01/12/94)    59.2     (m)  GEOID93  model used  GPS OBS
DJ2095  NGVD 29 (09/20/88)    59.3     (m)  RAPSU86  model used  GPS OBS
DJ2095
DJ2095.Superseded values are not recommended for survey control.
DJ2095
DJ2095.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ2095.See file dsdata.pdf to determine how the superseded data were derived.
DJ2095

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FA4563                          SUPERSEDED SURVEY CONTROL
FA4563
FA4563  NAD 83(2007)-  35 14 17.58635(N)    080 40 17.44851(W) AD(2002.00) 0
FA4563  ELLIP H (02/10/07)  196.669  (m)                       GP(2002.00)
FA4563  NAD 83(2001)-  35 14 17.58630(N)    080 40 17.44856(W) AD(       ) B
FA4563  ELLIP H (01/30/03)  196.679  (m)                       GP(       ) 4 2
FA4563  NAD 83(1995)-  35 14 17.58665(N)    080 40 17.44827(W) AD(       ) B
FA4563  ELLIP H (09/11/96)  196.676  (m)                       GP(       ) 4 1
FA4563  NAD 83(1986)-  35 14 17.60145(N)    080 40 17.45777(W) AD(       ) 1
FA4563  NAVD 88 (08/04/17)  226.9    (m)  GEOID12B model used  GPS OBS
FA4563  NAVD 88 (12/02/04)  226.939  (m)          744.55   (f) SUPERSEDED  2 2
FA4563  NAVD 88             226.94   (m)          744.6    (f) LEVELING    3
FA4563  NAVD 88 (08/02/04)  226.94   (m)  GEOID03  model used  GPS OBS
FA4563  NAVD 88 (06/02/98)  227.0    (m)  GEOID96  model used  GPS OBS
FA4563  NAVD 88 (09/11/96)  227.0    (m)  GEOID93  model used  GPS OBS
FA4563  NGVD 29 (11/20/91)  227.2    (m)  UNKNOWN  model used  GPS OBS
FA4563
FA4563.Superseded values are not recommended for survey control.
FA4563
FA4563.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FA4563.See file dsdata.pdf to determine how the superseded data were derived.
FA4563
```

Prior to this you would have seen the below partial datasheets showing only the SUPERSEDED SURVEY CONTROL section where the geoid models are highlighted in red.

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. . .

AG9547                          SUPERSEDED SURVEY CONTROL
AG9547
AG9547  NAD 83(2007)-  46 08 49.68105(N)    091 31 01.85344(W) AD(2002.00) 0
AG9547  ELLIP H (02/10/07)  363.217  (m)                       GP(2002.00)
AG9547  NAD 83(1997)-  46 08 49.68112(N)    091 31 01.85405(W) AD(       ) 1
AG9547  ELLIP H (12/26/02)  363.234  (m)                       GP(       ) 3 2
AG9547  NAD 83(1991)-  46 08 49.68092(N)    091 31 01.85294(W) AD(       ) 1
AG9547  ELLIP H (04/30/98)  363.227  (m)                       GP(       ) 3 2
AG9547  NAVD 88 (05/27/14)  391.12   (m)  GEOID12 model used   GPS OBS
AG9547  NAVD 88 (04/30/98)  391.1    (m)  GEOID96 model used   GPS OBS
AG9547
AG9547.Superseded values are not recommended for survey control.
AG9547
AG9547.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AG9547.See file dsdata.pdf to determine how the superseded data were derived.
AG9547

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AJ7812                          SUPERSEDED SURVEY CONTROL
AJ7812
AJ7812  NAD 83(2007)-  34 55 59.56692(N)    089 59 40.75416(W) AD(2002.00) A
AJ7812  ELLIP H (09/06/11)   71.456  (m)                       GP(2002.00) 4 1
AJ7812  NAD 83(2007)-  34 55 59.56663(N)    089 59 40.75449(W) AD(2002.00) 0
AJ7812  ELLIP H (02/10/07)   71.490  (m)                       GP(2002.00)
AJ7812  ELLIP H (09/08/03)   71.503  (m)                       GP(       ) 4 1
AJ7812  ELLIP H (04/15/02)   71.465  (m)                       GP(       ) 4 2
AJ7812  NAD 83(1993)-  34 55 59.56623(N)    089 59 40.75359(W) AD(       ) B
AJ7812  ELLIP H (02/15/02)   71.462  (m)                       GP(       ) 4 1
```

```
AJ7812  NAVD 88 (11/08/21)    98.90    (m)  GEOID18 model used   GPS OBS
AJ7812  NAVD 88 (04/05/04)    98.92    (m)  UNKNOWN model used   GPS OBS
AJ7812  NAVD 88 (02/15/02)    98.8     (m)  GEOID99 model used   GPS OBS
AJ7812
AJ7812.Superseded values are not recommended for survey control.
AJ7812
AJ7812.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ7812.See file dsdata.pdf to determine how the superseded data were derived.
AJ7812
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AU2196                          SUPERSEDED SURVEY CONTROL
AU2196
AU2196  NAD 83(2011)-  29 55 53.38201(N)    090 08 02.34961(W) AD(2010.00) 0
AU2196  NAD 83(2011)-  29 55 53.38271(N)    090 08 02.34998(W) AD(2010.00) 0
AU2196  ELLIP H (06/27/12)  -22.706  (m)                       GP(2010.00)
AU2196  ELLIP H (10/11/11)  -22.713  (m)                       GP(       ) 4 1
AU2196  NAD 83(2007)-  29 55 53.38277(N)    090 08 02.35071(W) AD(       ) 0
AU2196  ELLIP H (02/10/07)  -22.697  (m)                       GP(       )
AU2196  NAD 83(1992)-  29 55 53.38291(N)    090 08 02.35063(W) AD(       ) B
AU2196  ELLIP H (12/29/04)  -22.700  (m)                       GP(       ) 4 1
AU2196  NAVD 88 (12/26/12)    3.24   (m)  GEOID12 model used   GP(2009.55)
AU2196  NAVD 88 (01/05/06)    3.30   (m)  GEOID03 model used   GP(2004.65)
AU2196  NAVD 88 (05/09/05)    3.41   (m)  USGG200 model used   GPS OBS
AU2196  NAVD 88 (12/05/96)    3.450  (m)          11.32   (f) ADJUSTED    1 2
AU2196  NAVD 88 (02/14/94)    3.435  (m)          11.27   (f) SUPERSEDED  1 2
AU2196  NGVD 29 (05/21/91)    3.495  (m)          11.47   (f) ADJUSTED    1 2
AU2196  NGVD 29 (??/??/87)    3.546  (m)          11.63   (f) SUPERSEDED  1 2
AU2196
AU2196.Superseded values are not recommended for survey control.
AU2196
AU2196.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU2196.See file dsdata.pdf to determine how the superseded data were derived.
AU2196
```

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```
DJ2095                          SUPERSEDED SURVEY CONTROL
DJ2095
DJ2095  NAD 83(2007)-  33 49 56.25921(N)    089 47 37.99712(W) AD(2002.00) A
DJ2095  ELLIP H (09/06/11)   32.658  (m)                       GP(2002.00) 4 1
DJ2095  NAD 83(2007)-  33 49 56.25867(N)    089 47 37.99766(W) AD(2002.00) 1
DJ2095  ELLIP H (02/15/08)   32.695  (m)                       GP(2002.00) 4 2
DJ2095  NAD 83(2007)-  33 49 56.25871(N)    089 47 37.99738(W) AD(2002.00) 0
DJ2095  ELLIP H (02/10/07)   32.693  (m)                       GP(2002.00)
DJ2095  ELLIP H (09/12/01)   32.682  (m)                       GP(       ) 3 1
DJ2095  NAD 83(1993)-  33 49 56.25870(N)    089 47 37.99623(W) AD(       ) B
DJ2095  ELLIP H (01/12/94)   32.736  (m)                       GP(       ) 4 1
DJ2095  NAD 83(1992)-  33 49 56.26428(N)    089 47 37.98777(W) AD(       ) 3
DJ2095  NAD 83(1986)-  33 49 56.26442(N)    089 47 37.98799(W) AD(       ) 3
DJ2095  NAD 27      -  33 49 55.84708(N)    089 47 37.73194(W) AD(       ) 3
DJ2095  NAVD 88 (02/15/08)   59.26   (m)  GEOID03 model used   GPS OBS
DJ2095  NAVD 88 (02/15/02)   59.2    (m)  GEOID99 model used   GPS OBS
DJ2095  NAVD 88 (04/06/99)   59.2    (m)  GEOID96 model used   GPS OBS
DJ2095  NAVD 88 (01/12/94)   59.2    (m)  GEOID93 model used   GPS OBS
DJ2095  NGVD 29 (09/20/88)   59.3    (m)  RAPSU86 model used   GPS OBS
DJ2095
DJ2095.Superseded values are not recommended for survey control.
DJ2095
DJ2095.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ2095.See file dsdata.pdf to determine how the superseded data were derived.
DJ2095
```

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```
FA4563                          SUPERSEDED SURVEY CONTROL
FA4563
FA4563  NAD 83(2007)-  35 14 17.58635(N)    080 40 17.44851(W) AD(2002.00) 0
FA4563  ELLIP H (02/10/07)  196.669  (m)                       GP(2002.00)
FA4563  NAD 83(2001)-  35 14 17.58630(N)    080 40 17.44856(W) AD(       ) B
```

```
FA4563  ELLIP H (01/30/03)  196.679  (m)                        GP(       ) 4 2
FA4563  NAD 83(1995)-  35 14 17.58665(N)    080 40 17.44827(W) AD(       ) B
FA4563  ELLIP H (09/11/96)  196.676  (m)                        GP(       ) 4 1
FA4563  NAD 83(1986)-  35 14 17.60145(N)    080 40 17.45777(W) AD(       ) 1
FA4563  NAVD 88 (08/04/17)  226.9    (m)  GEOID12 model used   GPS OBS
FA4563  NAVD 88 (12/02/04)  226.939  (m)          744.55   (f) SUPERSEDED  2 2
FA4563  NAVD 88             226.94   (m)          744.6    (f) LEVELING    3
FA4563  NAVD 88 (08/02/04)  226.94   (m)  GEOID03 model used   GPS OBS
FA4563  NAVD 88 (06/02/98)  227.0    (m)  GEOID96 model used   GPS OBS
FA4563  NAVD 88 (09/11/96)  227.0    (m)  GEOID93 model used   GPS OBS
FA4563  NGVD 29 (11/20/91)  227.2    (m)  UNKNOWN model used   GPS OBS
FA4563
FA4563.Superseded values are not recommended for survey control.
FA4563
FA4563.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FA4563.See file dsdata.pdf to determine how the superseded data were derived.
FA4563

...
```

Version 8.12.5.16 updated on 08/03/2023

There is one change to datasheets with this release.

If a control point is a height modernization (HTMOD) station and also is a primary or secondary airport control station (PACs or SACs) then the paragraph:

```
<PID>.GPS derived orthometric heights for airport stations designated as
<PID>.PACS or SACS are published to 2 decimal places.  This maintains
<PID>.centimeter relative accuracy between the PACS and SACS.  It does
<PID>.not indicate centimeter accuracy relative to other marks which are
<PID>.part of the published vertical control network.
```

will no longer appear on its datasheet. Example PIDs that fall into this category are:

```
AM0539
BL2014
FE2751
EB2716
DD0765
```

Version 8.12.5.15 updated on 05/02/2023

There are three main changes to datasheets with this release.

For the first change, if a control point is a primary or secondary airport control station (PACS or SACS) then the paragraph:

```
<PID>.GPS derived orthometric heights for airport stations designated as
<PID>.PACS or SACS are published to 2 decimal places.  This maintains
<PID>.centimeter relative accuracy between the PACS and SACS.  It does
<PID>.not indicate centimeter accuracy relative to other marks which are
<PID>.part of the NAVD 88 network.
```

now becomes to:

```
<PID>.GPS derived orthometric heights for airport stations designated as
```

```
<PID>.PACS or SACS are published to 2 decimal places.  This maintains
<PID>.centimeter relative accuracy between the PACS and SACS.  It does
<PID>.not indicate centimeter accuracy relative to other marks which are
<PID>.part of the published vertical control network.
```

Example PIDs where you can see this change on datasheets are:

```
AA4464
DQ2174
JV4614
KM0292
TU2250
TV0946
UV1458
```

This change was made to better accomdate control points that are PACS/SACS and are *outside of the NAVD88 network* (such as AA4464 in American Samoa, DQ2174 in the Republic of Marshall Islands, TU2250 in Hawaii, TV0946 in Puerto Rico, and UV1458 in Alaska).

For the second change, control points that are in the TX suspect area should now display the following text:

```
<PID>.** This station is in an area of suspected land subsidence, uplift, or
<PID>.** crustal motion. NGS recommends this and all published orthometric
<PID>.** heights in such areas be validated before use as vertical control.
<PID>.** Click here to see a list and map of nearby stations with valid
<PID>.** orthometric heights.  Note: While datasheets are updated in real-time,
<PID>.** updates to archived datasheets and the SE TX Valid OH map occur
<PID>.** monthly. NGS discourages the use of scaled, VERTCON, or superseded
<PID>.** heights as vertical control as they are deemed unreliable.
<PID>.**
<PID>.** If an established orthometric height is unavailable in the survey control
<PID>.** section, it should be considered suspect. To view suspect heights,
<PID>.** (in the superseded section), select 'Include suspect heights in vertical
<PID>.** motion areas' box from the datasheet retrieval page.
```

Prior to this, the text displayed as:

```
<PID> ** This station is in an area of suspected vertical motion.  Due to the
<PID> ** variability of land subsidence, uplift, and crustal motion, NGS
<PID> ** recommends that all published orthometric heights in such areas be
<PID> ** validated before used as control. In addition, NGS does not
<PID> ** recommend using the following types of orthometric heights as
<PID> ** vertical control: scaled, VERTCON, or superseded. Click here to
<PID> ** see the list of stations with valid orthometric heights in this area.
<PID> **
<PID> ** If an established orthometric height is unavailable in the survey control
<PID> ** section, it should be considered suspect. To view suspect heights,
<PID> ** (in the superseded section), select "Include suspect heights in vertical
<PID> ** motion areas" box from the datasheet retrieval page.
```

An example control point where you can see this change on a datasheet is AW0590. It's partial datasheet with this paragraph is shown below:

```
...
AW0590.** This station is in an area of suspected land subsidence, uplift, or
AW0590.** crustal motion. NGS recommends this and all published orthometric
AW0590.** heights in such areas be validated before use as vertical control.
AW0590.** Click here to see a list and map of nearby stations with valid
```

```
AW0590.** orthometric heights.  Note: While datasheets are updated in real-time,
AW0590.** updates to archived datasheets and the SE TX Valid OH map occur
AW0590.** monthly. NGS discourages the use of scaled, VERTCON, or superseded
AW0590.** heights as vertical control as they are deemed unreliable.
AW0590.**
AW0590.** If an established orthometric height is unavailable in the survey control
AW0590.** section, it should be considered suspect. To view suspect heights,
AW0590.** (in the superseded section), select 'Include suspect heights in vertical
AW0590.** motion areas' box from the datasheet retrieval page.
...
```

The third change involves some very minor text changes to several paragraphs on datasheets. These changes were needed as NGS prepares for a future release of datasheets in JSON format. More will be written on JSON datasheets at a later date. Using the control points of:

```
AA3712
AM0539
AX2553
BG2536
BG5003
BH1164
BJ0637
DC0409
DE8751
DR7033
SZ0062
TU2764
```

these minor changes are shown in the partial datasheets below.

From:

```
AA3712.** The Pago Pago tide station is not formally a part of the current
AA3712.** national tidal datum epoch (NTDE. A Station Datum (SD) has been
AA3712.** determined by the NOS Center for Operational Oceanographic Products
AA3712.** and Services (CO-OPS), and published for the National Water Levels
AA3712.** Observation Network (NWLON) bench mark number 177 0000 W (4.345m meters
AA3712.** or 14.255 ft), located in Pago Pago. Surveys requiring vertical control
AA3712.** must incorporate bench marks around the tide gauge, preferentially
AA3712.** 177 0000 W.
AA3712.**
AA3712.** The heights of stations in this area may have changed
AA3712.** by more than 10 cm due to earthquakes.  NGS strongly warns
AA3712.** against the use of such suspect heights as control.
```

To:

```
AA3712.** The Pago Pago tide station is not formally a part of the current
AA3712.** national tidal datum epoch (NTDE. A Station Datum (SD) has been
AA3712.** determined by the NOS Center for Operational Oceanographic Products
AA3712.** and Services (CO-OPS), and published for the National Water Levels
AA3712.** Observation Network (NWLON) bench mark number 177 0000 W (4.345m meters
AA3712.** or 14.255 ft), located in Pago Pago. Surveys requiring vertical control
AA3712.** must incorporate bench marks around the tide gauge, preferentially
AA3712.** 177 0000 W.
AA3712.**
AA3712.** The heights of stations in this area may have changed
AA3712.** by more than 10 cm due to earthquakes.  NGS strongly warns
AA3712.** against the use of such suspect heights as control.
```

From:

```
AM0539
AM0539
AM0539.This mark is at Bay City Muni (3R1) Airport (3R1)
```

To:

```
AM0539
AM0539.This mark is at Bay City Muni (3R1) Airport (3R1)
```

From:

```
AX2553 ** This station is in an area of suspected vertical motion.  Due to the
AX2553 ** variability of land subsidence, uplift, and crustal motion, NGS
AX2553 ** recommends that all published orthometric heights in such areas be
AX2553 ** validated before used as control. In addition, NGS does not
AX2553 ** recommend using the following types of orthometric heights as
AX2553 ** vertical control: scaled, VERTCON, or superseded. Click here to
AX2553 ** see the list of stations with valid orthometric heights in this area.
AX2553 **
AX2553 ** If an established orthometric height is unavailable in the survey
control
AX2553 ** section, it should be considered suspect. To view suspect heights,
AX2553 ** (in the superseded section), select "Include suspect heights in vertical
AX2553 ** motion areas" box from the datasheet retrieval page.
```

To:

```
AX2553.** This station is in an area of suspected vertical motion.  Due to the
AX2553.** variability of land subsidence, uplift, and crustal motion, NGS
AX2553.** recommends that all published orthometric heights in such areas be
AX2553.** validated before used as control. In addition, NGS does not
AX2553.** recommend using the following types of orthometric heights as
AX2553.** vertical control: scaled, VERTCON, or superseded. Click here to
AX2553.** see the list of stations with valid orthometric heights in this area.
AX2553.**
AX2553.** If an established orthometric height is unavailable in the survey
control
AX2553.** section, it should be considered suspect. To view suspect heights,
AX2553.** (in the superseded section), select 'Include suspect heights in vertical
AX2553.** motion areas' box from the datasheet retrieval page.
```

From:

```
BG2536.
BG2536 ** This station is in an area of known vertical motion.  Due to the
BG2536 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BG2536 ** determined the orthometric heights for marks in these suspect
BG2536 ** subsidence areas should be considered valid only at the epoch date
BG2536 ** associated with the orthometric height.  These heights must always
BG2536 ** be validated when used as control.  All previously superseded
BG2536 ** orthometric heights are now considered suspect and are available
BG2536 ** in the superseded section.  NGS does not recommend using suspect
BG2536 ** or superseded heights as control.
```

To:

```
BG2536
```

```
BG2536.** This station is in an area of known vertical motion.  Due to the
BG2536.** variability of land subsidence, uplift, and crustal motion, NGS has,
BG2536.** determined the orthometric heights for marks in these suspect
BG2536.** subsidence areas should be considered valid only at the epoch date
BG2536.** associated with the orthometric height.  These heights must always
BG2536.** be validated when used as control.  All previously superseded
BG2536.** orthometric heights are now considered suspect and are available
BG2536.** in the superseded section.  NGS does not recommend using suspect
BG2536.** or superseded heights as control.
```

From:

```
BG5003
BG5003
BG5003.The horizontal coordinates were established by GPS observations
BG5003.and adjusted by the National Geodetic Survey in June 2012.
BG5003
BG5003.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
BG5003.been affixed to the stable North American tectonic plate. See
BG5003.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BG5003
BG5003.The horizontal coordinates are valid at the epoch date displayed above
BG5003.which is a decimal equivalence of Year/Month/Day.
BG5003
BG5003** This station is in an area of known vertical motion. If an
BG5003** orthometric height was ever established but is not available
BG5003** in the current survey control section, the orthometric height
BG5003** is considered suspect.  Suspect heights are available in the
BG5003** superseded section only if requested.
```

To:

```
BG5003
BG5003.The horizontal coordinates were established by GPS observations
BG5003.and adjusted by the National Geodetic Survey in June 2012.
BG5003
BG5003.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
BG5003.been affixed to the stable North American tectonic plate. See
BG5003.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BG5003
BG5003.The horizontal coordinates are valid at the epoch date displayed above
BG5003.which is a decimal equivalence of Year/Month/Day.
BG5003
BG5003.** This station is in an area of known vertical motion. If an
BG5003.** orthometric height was ever established but is not available
BG5003.** in the current survey control section, the orthometric height
BG5003.** is considered suspect.  Suspect heights are available in the
BG5003.** superseded section only if requested.
```

From:

```
BH1164** This station is in an area of known vertical motion.  Due to the
BH1164** variability of land subsidence, uplift, and crustal motion, NGS has,
BH1164** determined the orthometric heights for marks in these suspect
BH1164** subsidence areas should be considered valid only at the epoch date
BH1164** associated with the orthometric height.  These heights must always
BH1164** be validated when used as control.  All previously superseded
```

```
BH1164** orthometric heights are now considered suspect and are available
BH1164** in the superseded section.  NGS does not recommend using suspect
BH1164** or superseded heights as control.
BH1164
BH1164** The orthometric height was determined with a Vertical Time-dependent
BH1164** Positioning (VTDP) model and has been validated through GNSS
BH1164** observations for the epoch indicated.  For additional
BH1164** information on VTDP, please refer to the following web pages:
BH1164** https://www.ngs.noaa.gov/heightmod/GulfCoastProject.shtml
BH1164** https://www.ngs.noaa.gov/heightmod/NOAANOSNGSTR50.pdf
```

To:

```
BH1164.** This station is in an area of known vertical motion.  Due to the
BH1164.** variability of land subsidence, uplift, and crustal motion, NGS has,
BH1164.** determined the orthometric heights for marks in these suspect
BH1164.** subsidence areas should be considered valid only at the epoch date
BH1164.** associated with the orthometric height.  These heights must always
BH1164.** be validated when used as control.  All previously superseded
BH1164.** orthometric heights are now considered suspect and are available
BH1164.** in the superseded section.  NGS does not recommend using suspect
BH1164.** or superseded heights as control.
BH1164
BH1164.** The orthometric height was determined with a Vertical Time-dependent
BH1164.** Positioning (VTDP) model and has been validated through GNSS
BH1164.** observations for the epoch indicated.  For additional
BH1164.** information on VTDP, please refer to the following web pages:
BH1164.** https://www.ngs.noaa.gov/heightmod/GulfCoastProject.shtml
BH1164.** https://www.ngs.noaa.gov/heightmod/NOAANOSNGSTR50.pdf
```

From:

```
BJ0637.
BJ0637 ** This station is in an area of known vertical motion. If an
BJ0637 ** orthometric height was ever established but is not available
BJ0637 ** in the current survey control section, the orthometric height
BJ0637 ** is considered suspect.  Suspect heights are available in the
BJ0637 ** superseded section only if requested.
```

To:

```
BJ0637
BJ0637.** This station is in an area of known vertical motion. If an
BJ0637.** orthometric height was ever established but is not available
BJ0637.** in the current survey control section, the orthometric height
BJ0637.** is considered suspect.  Suspect heights are available in the
BJ0637.** superseded section only if requested.
```

From:

```
DC0409.The height was determined by precise leveling from only one NSRS
DC0409.bench mark.  This was not adequate "tie leveling" to NSRS and was
DC0409.allowed ONLY to validate the GPS-derived height.
```

To:

```
DC0409.The height was determined by precise leveling from only one NSRS
DC0409.bench mark.  This was not adequate 'tie leveling' to NSRS and was
DC0409.allowed ONLY to validate the GPS-derived height.
```

From:

```
DE8751.
DE8751 ** The heights of stations in this area may have changed
DE8751 ** by more than 10 cm due to earthquakes.  NGS strongly warns
DE8751 ** against the use of such suspect heights as control.
```

To:

```
DE8751
DE8751.** The heights of stations in this area may have changed
DE8751.** by more than 10 cm due to earthquakes.  NGS strongly warns
DE8751.** against the use of such suspect heights as control.
```

From:

```
DR7033_ROD/PIPE-DEPTH: 6.1 meters
DR7033_SLEEVE-DEPTH  : 0.9 meters
```

To:

```
DR7033_ROD/PIPE-DEPTH: 6.1 meters
DR7033_SLEEVE-DEPTH  : 0.9 meters
```

From:

```
SZ0062.The positional and height information provided upon this datasheet are not
SZ0062.officially recognized by the Government of Canada, provincial governments
SZ0062.within Canada, nor are they intended to replace or substitute for them.
SZ0062.The intent of sharing this data is to allow access to positions or heights
SZ0062.recognized by the United States Government. Passive control that is used by
SZ0062.both nations may share the same or similar designations or descriptions but
SZ0062.do not share official positions or heights. The "Station Description" may
SZ0062.originate from a Canadian "Station Report" and if so contains information
SZ0062.licensed under the "Open Government License - Canada".
SZ0062
SZ0062
SZ0062.The horizontal coordinates were established by classical geodetic methods
SZ0062.and adjusted by the National Geodetic Survey in March 1999.
SZ0062.
SZ0062.The orthometric height was scaled from a topographic map.
```

To:

```
SZ0062.The positional and height information provided upon this datasheet are not
SZ0062.officially recognized by the Government of Canada, provincial governments
SZ0062.within Canada, nor are they intended to replace or substitute for them.
SZ0062.The intent of sharing this data is to allow access to positions or heights
SZ0062.recognized by the United States Government. Passive control that is used by
SZ0062.both nations may share the same or similar designations or descriptions but
SZ0062.do not share official positions or heights. The 'Station Description' may
SZ0062.originate from a Canadian 'Station Report' and if so contains information
SZ0062.licensed under the 'Open Government License - Canada'.
SZ0062
SZ0062.The horizontal coordinates were established by classical geodetic methods
SZ0062.and adjusted by the National Geodetic Survey in March 1999.
SZ0062
SZ0062.The orthometric height was scaled from a topographic map.
```

From:

```
TU2764.
TU2764.Significant digits in the geoid height do not necessarily reflect
accuracy.
TU2764.GEOID12B height accuracy estimate available here.
```

To:

```
TU2764
TU2764.Significant digits in the geoid height do not necessarily reflect
accuracy.
TU2764.GEOID12B height accuracy estimate available here.
```

Version 8.12.5.14 updated on 01/18/2022

Prior to this version, 4th order adjusted positions in the NGSIDB (NGS database) were transformed via the datasheet95 program into 3rd order adjusted positions on datasheets. This transformation has now been removed by the Observation and Analysis Division (OAD) in NGS. Below are some examples of partial datasheets that now will display 4th order adjusted positions:

```
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 DZ0734 ***********************************************************************
 DZ0734  DESIGNATION -  OPTICAL SITE 6
 DZ0734  PID         -  DZ0734
 DZ0734  STATE/COUNTY-  CA/SANTA BARBARA
 DZ0734  COUNTRY     -  US
 DZ0734  USGS QUAD   -  SURF (2018)
 DZ0734
 DZ0734                        *CURRENT SURVEY CONTROL
 DZ0734  ______________________________________________________________________
 DZ0734* NAD 83(1992) POSITION- 34 40 04.86156(N) 120 35 03.58059(W)    ADJUSTED
 DZ0734* NAD 83(1992) EPOCH   -  1991.35
 DZ0734* NAVD 88 ORTHO HEIGHT -   113.90  (+/-2cm)      373.7   (feet) VERTCON
 DZ0734  ______________________________________________________________________
 DZ0734  GEOID HEIGHT    -        -36.086 (meters)                    GEOID18
 DZ0734  LAPLACE CORR    -          2.55  (seconds)                   DEFLEC18
 DZ0734  HORZ ORDER      -  FOURTH
 DZ0734  VERT ORDER      -  SECOND    CLASS 0 (See Below)
 DZ0734
 DZ0734.The horizontal coordinates were established by classical geodetic methods
 DZ0734.and adjusted by the National Geodetic Survey in June 1996.
 DZ0734.
 DZ0734.The NAVD 88 height was computed by applying the VERTCON shift value to
 DZ0734.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
 DZ0734
 DZ0734.Significant digits in the geoid height do not necessarily reflect accuracy.
 DZ0734.GEOID18 height accuracy estimate available here.
 DZ0734
 DZ0734.The vertical order pertains to the NGVD 29 superseded value.
 DZ0734
 DZ0734.Click photographs - Photos may exist for this station.
 DZ0734
 …

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 EA1478 ***********************************************************************
 EA1478  DESIGNATION -  ON 38
 EA1478  PID         -  EA1478
 EA1478  STATE/COUNTY-  NC/ONSLOW
 EA1478  COUNTRY     -  US
 EA1478  USGS QUAD   -  SWANSBORO (2019)
 EA1478
 EA1478                        *CURRENT SURVEY CONTROL
 EA1478  ______________________________________________________________________
```

```
 EA1478* NAD 83(2001) POSITION- 34 41 14.84823(N) 077 07 01.40671(W)    ADJUSTED
 EA1478* NAVD 88 ORTHO HEIGHT -     3.447 (meters)       11.31  (feet) ADJUSTED
 EA1478  ____________________________________________________________________
 EA1478  GEOID HEIGHT    -        -37.169 (meters)                     GEOID18
 EA1478  LAPLACE CORR    -         -0.44  (seconds)                    DEFLEC18
 EA1478  DYNAMIC HEIGHT  -          3.444 (meters)       11.30  (feet) COMP
 EA1478  MODELED GRAVITY -    979,706.6   (mgal)                       NAVD 88
 EA1478
 EA1478  HORZ ORDER      -  FOURTH
 EA1478  VERT ORDER      -  FIRST     CLASS II
 EA1478
 EA1478.The horizontal coordinates were established by classical geodetic methods
 EA1478.and adjusted by the National Geodetic Survey in August 2005.
 EA1478.
 EA1478.The orthometric height was determined by differential leveling and
 EA1478.adjusted by the NATIONAL GEODETIC SURVEY
 EA1478.in June 1991.
 EA1478
 EA1478.Significant digits in the geoid height do not necessarily reflect accuracy.
 EA1478.GEOID18 height accuracy estimate available here.
 EA1478
 EA1478.Click photographs - Photos may exist for this station.
 EA1478
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 EC0844 ***********************************************************************
 EC0844  DESIGNATION -  CASS RM 1
 EC0844  PID         -  EC0844
 EC0844  STATE/COUNTY-  SC/KERSHAW
 EC0844  COUNTRY     -  US
 EC0844  USGS QUAD   -  CASSATT (2017)
 EC0844
 EC0844                         *CURRENT SURVEY CONTROL
 EC0844  ____________________________________________________________________
 EC0844* NAD 83(2001) POSITION- 34 21 13.94166(N) 080 28 21.73320(W)    NO CHECK
 EC0844* NAVD 88 ORTHO HEIGHT -    90.711 (meters)      297.61  (feet) ADJUSTED
 EC0844  ____________________________________________________________________
 EC0844  GEOID HEIGHT    -        -31.063 (meters)                     GEOID18
 EC0844  LAPLACE CORR    -         -2.55  (seconds)                    DEFLEC18
 EC0844  DYNAMIC HEIGHT  -         90.622 (meters)      297.32  (feet) COMP
 EC0844  MODELED GRAVITY -    979,659.5   (mgal)                       NAVD 88
 EC0844
 EC0844  HORZ ORDER      -  FOURTH
 EC0844  VERT ORDER      -  FIRST     CLASS II
 EC0844
 EC0844.The horizontal coordinates were established by classical geodetic methods
 EC0844.and adjusted by the National Geodetic Survey in March 2004.
 EC0844.
 EC0844.No horizontal observational check was made to the station.
 EC0844.
 EC0844.The orthometric height was determined by differential leveling and
 EC0844.adjusted by the NATIONAL GEODETIC SURVEY
 EC0844.in June 1991.
 EC0844
 EC0844.Significant digits in the geoid height do not necessarily reflect accuracy.
 EC0844.GEOID18 height accuracy estimate available here.
 EC0844
 EC0844.Click photographs - Photos may exist for this station.
 EC0844
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 JD2089 ***********************************************************************
 JD2089  DESIGNATION -  PITTSVILLE 2
 JD2089  PID         -  JD2089
 JD2089  STATE/COUNTY-  MO/JOHNSON
 JD2089  COUNTRY     -  US
 JD2089  USGS QUAD   -  PITTSVILLE (2017)
 JD2089
 JD2089                         *CURRENT SURVEY CONTROL
```

```
 JD2089
 JD2089* NAD 83(1997) POSITION- 38 50 57.04318(N) 093 57 53.25631(W)    ADJUSTED
 JD2089* NAVD 88 ORTHO HEIGHT -   269.53  (meters)      884.3   (feet) RESET
 JD2089
 JD2089  GEOID HEIGHT    -        -32.687 (meters)                     GEOID18
 JD2089  LAPLACE CORR    -         -1.05  (seconds)                    DEFLEC18
 JD2089  HORZ ORDER      -  FOURTH
 JD2089  VERT ORDER      -  THIRD
 JD2089
 JD2089.The horizontal coordinates were established by classical geodetic methods
 JD2089.and adjusted by the National Geodetic Survey in February 2000.
 JD2089.
 JD2089.The orthometric height was computed from unverified reset data.
 JD2089
 JD2089.Significant digits in the geoid height do not necessarily reflect accuracy.
 JD2089.GEOID18 height accuracy estimate available here.
 JD2089
 JD2089.Click photographs - Photos may exist for this station.
 JD2089
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 HV0103 ***********************************************************************
 HV0103  DESIGNATION -  TOWER 1
 HV0103  PID         -  HV0103
 HV0103  STATE/COUNTY-  MD/TALBOT
 HV0103  COUNTRY     -  US
 HV0103  USGS QUAD   -  TILGHMAN (2016)
 HV0103
 HV0103                        *CURRENT SURVEY CONTROL
 HV0103
 HV0103* NAD 83(1991) POSITION- 38 40 41.91196(N) 076 20 36.97375(W)    ADJUSTED
 HV0103* NAVD 88 ORTHO HEIGHT -     2.005 (meters)        6.58   (feet) ADJUSTED
 HV0103
 HV0103  GEOID HEIGHT    -        -34.226 (meters)                     GEOID18
 HV0103  LAPLACE CORR    -         -5.02  (seconds)                    DEFLEC18
 HV0103  DYNAMIC HEIGHT  -          2.004 (meters)        6.57   (feet) COMP
 HV0103  MODELED GRAVITY -    980,041.5   (mgal)                       NAVD 88
 HV0103
 HV0103  HORZ ORDER      -  FOURTH
 HV0103  VERT ORDER      -  SECOND    CLASS I
 HV0103
 HV0103.The horizontal coordinates were established by classical geodetic methods
 HV0103.and adjusted by the National Geodetic Survey in January 1992.
 HV0103.
 HV0103.The orthometric height was determined by differential leveling and
 HV0103.adjusted by the NATIONAL GEODETIC SURVEY
 HV0103.in October 1997.
 HV0103
 HV0103.Significant digits in the geoid height do not necessarily reflect accuracy.
 HV0103.GEOID18 height accuracy estimate available here.
 HV0103
 HV0103.Click photographs - Photos may exist for this station.
 HV0103
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 LY2282 ***********************************************************************
 LY2282  DESIGNATION -  FORD RESET
 LY2282  PID         -  LY2282
 LY2282  STATE/COUNTY-  PA/PIKE
 LY2282  COUNTRY     -  US
 LY2282  USGS QUAD   -  MILFORD (2019)
 LY2282
 LY2282                        *CURRENT SURVEY CONTROL
 LY2282
 LY2282* NAD 83(1986) POSITION- 41 20 09.73570(N) 074 46 33.18943(W)    ADJUSTED
 LY2282* NAVD 88 ORTHO HEIGHT -   147.51  (meters)      484.0   (feet) RESET
 LY2282
 LY2282  GEOID HEIGHT    -        -32.231 (meters)                     GEOID18
 LY2282  LAPLACE CORR    -         -1.22  (seconds)                    DEFLEC18
```

```
 LY2282  HORZ ORDER      -  FOURTH
 LY2282  VERT ORDER      -  THIRD
 LY2282
 LY2282.The horizontal coordinates were established by GPS observations
 LY2282.and adjusted by the National Geodetic Survey in June 2002.
 LY2282
 LY2282.The orthometric height was computed from unverified reset data.
 LY2282
 LY2282.No vertical observational check was made to the station.
 LY2282
 LY2282.Significant digits in the geoid height do not necessarily reflect accuracy.
 LY2282.GEOID18 height accuracy estimate available here.
 LY2282
 LY2282.Click photographs - Photos may exist for this station.
 LY2282
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 OE0999 ***********************************************************************
 OE0999  DESIGNATION -  CANASTOTA A
 OE0999  PID         -  OE0999
 OE0999  STATE/COUNTY-  NY/MADISON
 OE0999  COUNTRY     -  US
 OE0999  USGS QUAD   -  CANASTOTA (2019)
 OE0999
 OE0999                        *CURRENT SURVEY CONTROL
 OE0999  ______________________________________________________________________
 OE0999* NAD 83(1996) POSITION- 43 04 10.43818(N) 075 45 59.38532(W)    ADJUSTED
 OE0999* NAVD 88 ORTHO HEIGHT -   155.190 (meters)      509.15  (feet) ADJUSTED
 OE0999  ______________________________________________________________________
 OE0999  GEOID HEIGHT    -        -32.926 (meters)                     GEOID18
 OE0999  LAPLACE CORR    -          3.74  (seconds)                    DEFLEC18
 OE0999  DYNAMIC HEIGHT  -        155.150 (meters)      509.02  (feet) COMP
 OE0999  MODELED GRAVITY -    980,358.6   (mgal)                       NAVD 88
 OE0999
 OE0999  HORZ ORDER      -  FOURTH
 OE0999  VERT ORDER      -  SECOND    CLASS 0
 OE0999
 OE0999.The horizontal coordinates were established by classical geodetic methods
 OE0999.and adjusted by the National Geodetic Survey in January 1999.
 OE0999.
 OE0999.The orthometric height was determined by differential leveling and
 OE0999.adjusted by the NATIONAL GEODETIC SURVEY
 OE0999.in June 1991.
 OE0999
 OE0999.Significant digits in the geoid height do not necessarily reflect accuracy.
 OE0999.GEOID18 height accuracy estimate available here.
 OE0999
 OE0999.Click photographs - Photos may exist for this station.
 OE0999
…

*** retrieval complete.
 Elapsed Time = 00:00:10
```

Prior to this one would have seen the following datasheets (partial datasheets shown below with "HORZ ORDER -" highlighted in red):

1.1 The NGS Data Sheet

```
1.1.1.1.1  See file dsdata.pdf for more information about the datasheet.
PROGRAM = datasheet95, VERSION = 8.12.5.14
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 DZ0734 ***********************************************************************
 DZ0734  DESIGNATION -  OPTICAL SITE 6
 DZ0734  PID         -  DZ0734
 DZ0734  STATE/COUNTY-  CA/SANTA BARBARA
 DZ0734  COUNTRY     -  US
 DZ0734  USGS QUAD   -  SURF (2018)
```

```
 DZ0734
 DZ0734                          *CURRENT SURVEY CONTROL
 DZ0734
 DZ0734* NAD 83(1992) POSITION- 34 40 04.86156(N) 120 35 03.58059(W)    ADJUSTED
 DZ0734* NAD 83(1992) EPOCH    -  1991.35
 DZ0734* NAVD 88 ORTHO HEIGHT -   113.90  (+/-2cm)      373.7   (feet) VERTCON
 DZ0734
 DZ0734  GEOID HEIGHT    -        -36.086 (meters)                     GEOID18
 DZ0734  LAPLACE CORR    -          2.55  (seconds)                    DEFLEC18
 DZ0734  HORZ ORDER      -  THIRD
 DZ0734  VERT ORDER      -  SECOND    CLASS 0 (See Below)
 DZ0734
 DZ0734.The horizontal coordinates were established by classical geodetic methods
 DZ0734.and adjusted by the National Geodetic Survey in June 1996.
 DZ0734.
 DZ0734.The NAVD 88 height was computed by applying the VERTCON shift value to
 DZ0734.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
 DZ0734
 DZ0734.Significant digits in the geoid height do not necessarily reflect accuracy.
 DZ0734.GEOID18 height accuracy estimate available here.
 DZ0734
 DZ0734.The vertical order pertains to the NGVD 29 superseded value.
 DZ0734
 DZ0734.Click photographs - Photos may exist for this station.
 DZ0734
 …

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 EA1478 ***********************************************************************
 EA1478  DESIGNATION -  ON 38
 EA1478  PID         -  EA1478
 EA1478  STATE/COUNTY-  NC/ONSLOW
 EA1478  COUNTRY     -  US
 EA1478  USGS QUAD   -  SWANSBORO (2019)
 EA1478
 EA1478                          *CURRENT SURVEY CONTROL
 EA1478
 EA1478* NAD 83(2001) POSITION- 34 41 14.84823(N) 077 07 01.40671(W)    ADJUSTED
 EA1478* NAVD 88 ORTHO HEIGHT -     3.447 (meters)       11.31  (feet) ADJUSTED
 EA1478
 EA1478  GEOID HEIGHT    -        -37.169 (meters)                     GEOID18
 EA1478  LAPLACE CORR    -         -0.44  (seconds)                    DEFLEC18
 EA1478  DYNAMIC HEIGHT  -          3.444 (meters)       11.30  (feet) COMP
 EA1478  MODELED GRAVITY -    979,706.6   (mgal)                       NAVD 88
 EA1478
 EA1478  HORZ ORDER      -  THIRD
 EA1478  VERT ORDER      -  FIRST     CLASS II
 EA1478
 EA1478.The horizontal coordinates were established by classical geodetic methods
 EA1478.and adjusted by the National Geodetic Survey in August 2005.
 EA1478.
 EA1478.The orthometric height was determined by differential leveling and
 EA1478.adjusted by the NATIONAL GEODETIC SURVEY
 EA1478.in June 1991.
 EA1478
 EA1478.Significant digits in the geoid height do not necessarily reflect accuracy.
 EA1478.GEOID18 height accuracy estimate available here.
 EA1478
 EA1478.Click photographs - Photos may exist for this station.
 EA1478
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 EC0844 ***********************************************************************
 EC0844  DESIGNATION -  CASS RM 1
 EC0844  PID         -  EC0844
 EC0844  STATE/COUNTY-  SC/KERSHAW
 EC0844  COUNTRY     -  US
 EC0844  USGS QUAD   -  CASSATT (2017)
 EC0844
 EC0844                          *CURRENT SURVEY CONTROL
```

```
 EC0844  _____________________________________________________________________
 EC0844* NAD 83(2001) POSITION- 34 21 13.94166(N) 080 28 21.73320(W)    NO CHECK
 EC0844* NAVD 88 ORTHO HEIGHT -    90.711 (meters)      297.61  (feet) ADJUSTED
 EC0844  _____________________________________________________________________
 EC0844  GEOID HEIGHT    -        -31.063 (meters)                     GEOID18
 EC0844  LAPLACE CORR    -         -2.55  (seconds)                    DEFLEC18
 EC0844  DYNAMIC HEIGHT  -         90.622 (meters)      297.32  (feet) COMP
 EC0844  MODELED GRAVITY -    979,659.5   (mgal)                       NAVD 88
 EC0844
 EC0844  HORZ ORDER      -  THIRD
 EC0844  VERT ORDER      -  FIRST     CLASS II
 EC0844
 EC0844.The horizontal coordinates were established by classical geodetic methods
 EC0844.and adjusted by the National Geodetic Survey in March 2004.
 EC0844.
 EC0844.No horizontal observational check was made to the station.
 EC0844.
 EC0844.The orthometric height was determined by differential leveling and
 EC0844.adjusted by the NATIONAL GEODETIC SURVEY
 EC0844.in June 1991.
 EC0844
 EC0844.Significant digits in the geoid height do not necessarily reflect accuracy.
 EC0844.GEOID18 height accuracy estimate available here.
 EC0844
 EC0844.Click photographs - Photos may exist for this station.
 EC0844
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 JD2089 ***********************************************************************
 JD2089  DESIGNATION -  PITTSVILLE 2
 JD2089  PID         -  JD2089
 JD2089  STATE/COUNTY-  MO/JOHNSON
 JD2089  COUNTRY     -  US
 JD2089  USGS QUAD   -  PITTSVILLE (2017)
 JD2089
 JD2089                        *CURRENT SURVEY CONTROL
 JD2089  _____________________________________________________________________
 JD2089* NAD 83(1997) POSITION- 38 50 57.04318(N) 093 57 53.25631(W)    ADJUSTED
 JD2089* NAVD 88 ORTHO HEIGHT -   269.53  (meters)      884.3   (feet) RESET
 JD2089  _____________________________________________________________________
 JD2089  GEOID HEIGHT    -        -32.687 (meters)                     GEOID18
 JD2089  LAPLACE CORR    -         -1.05  (seconds)                    DEFLEC18
 JD2089  HORZ ORDER      -  THIRD
 JD2089  VERT ORDER      -  THIRD
 JD2089
 JD2089.The horizontal coordinates were established by classical geodetic methods
 JD2089.and adjusted by the National Geodetic Survey in February 2000.
 JD2089.
 JD2089.The orthometric height was computed from unverified reset data.
 JD2089
 JD2089.Significant digits in the geoid height do not necessarily reflect accuracy.
 JD2089.GEOID18 height accuracy estimate available here.
 JD2089
 JD2089.Click photographs - Photos may exist for this station.
 JD2089
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 HV0103 ***********************************************************************
 HV0103  DESIGNATION -  TOWER 1
 HV0103  PID         -  HV0103
 HV0103  STATE/COUNTY-  MD/TALBOT
 HV0103  COUNTRY     -  US
 HV0103  USGS QUAD   -  TILGHMAN (2016)
 HV0103
 HV0103                        *CURRENT SURVEY CONTROL
 HV0103  _____________________________________________________________________
 HV0103* NAD 83(1991) POSITION- 38 40 41.91196(N) 076 20 36.97375(W)    ADJUSTED
 HV0103* NAVD 88 ORTHO HEIGHT -     2.005 (meters)        6.58  (feet) ADJUSTED
 HV0103  _____________________________________________________________________
```

```
 HV0103  GEOID HEIGHT    -        -34.226 (meters)                    GEOID18
 HV0103  LAPLACE CORR    -         -5.02  (seconds)                   DEFLEC18
 HV0103  DYNAMIC HEIGHT  -          2.004 (meters)        6.57  (feet) COMP
 HV0103  MODELED GRAVITY -    980,041.5   (mgal)                      NAVD 88
 HV0103
 HV0103  HORZ ORDER      -  THIRD
 HV0103  VERT ORDER      -  SECOND    CLASS I
 HV0103
 HV0103.The horizontal coordinates were established by classical geodetic methods
 HV0103.and adjusted by the National Geodetic Survey in January 1992.
 HV0103.
 HV0103.The orthometric height was determined by differential leveling and
 HV0103.adjusted by the NATIONAL GEODETIC SURVEY
 HV0103.in October 1997.
 HV0103
 HV0103.Significant digits in the geoid height do not necessarily reflect accuracy.
 HV0103.GEOID18 height accuracy estimate available here.
 HV0103
 HV0103.Click photographs - Photos may exist for this station.
 HV0103
…

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 LY2282 ***********************************************************************
 LY2282  DESIGNATION -  FORD RESET
 LY2282  PID         -  LY2282
 LY2282  STATE/COUNTY-  PA/PIKE
 LY2282  COUNTRY     -  US
 LY2282  USGS QUAD   -  MILFORD (2019)
 LY2282
 LY2282                        *CURRENT SURVEY CONTROL
 LY2282 ______________________________________________________________________
 LY2282* NAD 83(1986) POSITION- 41 20 09.73570(N) 074 46 33.18943(W)   ADJUSTED
 LY2282* NAVD 88 ORTHO HEIGHT -   147.51  (meters)      484.0   (feet) RESET
 LY2282 ______________________________________________________________________
 LY2282  GEOID HEIGHT    -        -32.231 (meters)                    GEOID18
 LY2282  LAPLACE CORR    -         -1.22  (seconds)                   DEFLEC18
 LY2282  HORZ ORDER      -  THIRD
 LY2282  VERT ORDER      -  THIRD
 LY2282
 LY2282.The horizontal coordinates were established by GPS observations
 LY2282.and adjusted by the National Geodetic Survey in June 2002.
 LY2282
 LY2282.The orthometric height was computed from unverified reset data.
 LY2282
 LY2282.No vertical observational check was made to the station.
 LY2282
 LY2282.Significant digits in the geoid height do not necessarily reflect accuracy.
 LY2282.GEOID18 height accuracy estimate available here.
 LY2282
 LY2282.Click photographs - Photos may exist for this station.
 LY2282
 …

1        National Geodetic Survey,   Retrieval Date = JANUARY 18, 2022
 OE0999 ***********************************************************************
 OE0999  DESIGNATION -  CANASTOTA A
 OE0999  PID         -  OE0999
 OE0999  STATE/COUNTY-  NY/MADISON
 OE0999  COUNTRY     -  US
 OE0999  USGS QUAD   -  CANASTOTA (2019)
 OE0999
 OE0999                        *CURRENT SURVEY CONTROL
 OE0999 ______________________________________________________________________
 OE0999* NAD 83(1996) POSITION- 43 04 10.43818(N) 075 45 59.38532(W)   ADJUSTED
 OE0999* NAVD 88 ORTHO HEIGHT -   155.190 (meters)      509.15  (feet) ADJUSTED
 OE0999 ______________________________________________________________________
 OE0999  GEOID HEIGHT    -        -32.926 (meters)                    GEOID18
 OE0999  LAPLACE CORR    -          3.74  (seconds)                   DEFLEC18
 OE0999  DYNAMIC HEIGHT  -        155.150 (meters)      509.02  (feet) COMP
 OE0999  MODELED GRAVITY -    980,358.6   (mgal)                      NAVD 88
```

```
 OE0999
 OE0999  HORZ ORDER      -  THIRD
 OE0999  VERT ORDER      -  SECOND    CLASS 0
 OE0999
 OE0999.The horizontal coordinates were established by classical geodetic methods
 OE0999.and adjusted by the National Geodetic Survey in January 1999.
 OE0999.
 OE0999.The orthometric height was determined by differential leveling and
 OE0999.adjusted by the NATIONAL GEODETIC SURVEY
 OE0999.in June 1991.
 OE0999
 OE0999.Significant digits in the geoid height do not necessarily reflect accuracy.
 OE0999.GEOID18 height accuracy estimate available here.
 OE0999
 OE0999.Click photographs - Photos may exist for this station.
 OE0999
…

 *** retrieval complete.
 Elapsed Time = 00:00:05
```

Additionally, a shapefile using our example PIDs from above would display a ‘4’ in the POS_ORDER field if the position was of 4th order:

```
#FeatureId,DATA_DATE,DATA_SRCE,DEC_LONG,DEC_LAT,PID,NAME,STATE,COUNTY,QUAD,LATITUDE,LONGITUDE
,POS_DATUM,DATUM_TAG,POS_SRCE,ELEVATION,ELEV_DATUM,ELEV_SRCE,ELLIP_HT,ELLIP_SRCE,POS_ORDER,PO
S_CHECK,ELEV_ORDER,ELEV_CLASS,ELEV_CHECK,DIST_RATE,ELLP_ORDER,ELLP_CLASS,FIRST_RECV,LAST_RECV
,LAST_COND,LAST_RECBY,SAT_USE,SAT_DATE,STABILITY
        1,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=DZ0734,-120.58433,
34.66802,DZ0734,OPTICAL  SITE  6,CA,SANTA  BARBARA,SURF  (2018),34  40  04.86156(N),120  35
03.58059(W),NAD  83,(1992),ADJUSTED   ,    113.90  ,NAVD  88  ,VERTCON      ,,,4,,,,,,,1964
,20200811,GOOD            ,NGIA,Y,20200811,D
        2,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=EA1478,      -77.11706,
34.68746,EA1478,ON  38,NC,ONSLOW,SWANSBORO  (2019),34  41  14.84823(N),077  07  01.40671(W),NAD
83,(2001),ADJUSTED   ,     3.447,NAVD 88 ,ADJUSTED   ,,,4,,1,2,Y,,,,1982     ,20021114,MARK NOT
FOUND  ,USPSQD,,,D
        3,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=EC0844,      -80.47270,
34.35387,EC0844,CASS RM 1,SC,KERSHAW,CASSATT (2017),34 21 13.94166(N),080 28 21.73320(W),NAD
83,(2001),NO CHECK   ,     90.711,NAVD 88 ,ADJUSTED   ,,,4,N,1,2,Y,,,,1971      ,19990427,GOOD
,SCGS,N,19990427,C
        4,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=JD2089,      -93.96479,
38.84918,JD2089,PITTSVILLE   2,MO,JOHNSON,PITTSVILLE   (2017),38   50   57.04318(N),093   57
53.25631(W),NAD  83,(1997),ADJUSTED   ,    269.53  ,NAVD  88  ,RESET         ,,,4,,3,,Y,,,,1969
,20051203,GOOD            ,INDIV,Y,20051203,C
        5,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=HV0103,      -76.34360,
38.67831,HV0103,TOWER  1,MD,TALBOT,TILGHMAN  (2016),38  40  41.91196(N),076  20  36.97375(W),NAD
83,(1991),ADJUSTED   ,      2.005,NAVD  88  ,ADJUSTED   ,,,4,,2,1,Y,,,,1945      ,20080508,GOOD
,USACE,Y,20080508,B
        6,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=LY2282,      -74.77589,
41.33604,LY2282,FORD  RESET,PA,PIKE,MILFORD  (2019),41  20  09.73570(N),074  46  33.18943(W),NAD
83,(1986),ADJUSTED   ,   147.51  ,NAVD  88  ,RESET       ,,,4,,3,,N,,,,1980      ,20070428,GOOD
,GEOCAC,,,C
        7,20220118,http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=OE0999,      -75.76650,
43.06957,OE0999,CANASTOTA    A,NY,MADISON,CANASTOTA    (2019),43    04    10.43818(N),075    45
59.38532(W),NAD  83,(1996),ADJUSTED   ,    155.190,NAVD  88  ,ADJUSTED    ,,,4,,2,0,Y,,,,1942
,19970419,GOOD            ,USPSQD,,,C
```

Version 8.12.5.14 updated on 10/06/2021

A small subset of leveling marks across the US inadvertently displayed the following message on marks outside of Hawaii:

```
<PID>.The orthometric height was determined by differential leveling
<PID>.and adjusted by the National Geodetic Survey in July 2020
```

```
 <PID>.holding the tidal station 161 5680 C TIDAL to the 1983/2001
 <PID>.tidal station epoch value 1.461 meters.
```

Examples PIDs for marks that were affected included:

```
AU2163
BJ2052
DG7090
DG7091
FY3323
FY3330
```

In this datasheet version, we have fixed this issue.

Version 8.12.5.13 updated on 07/01/2021

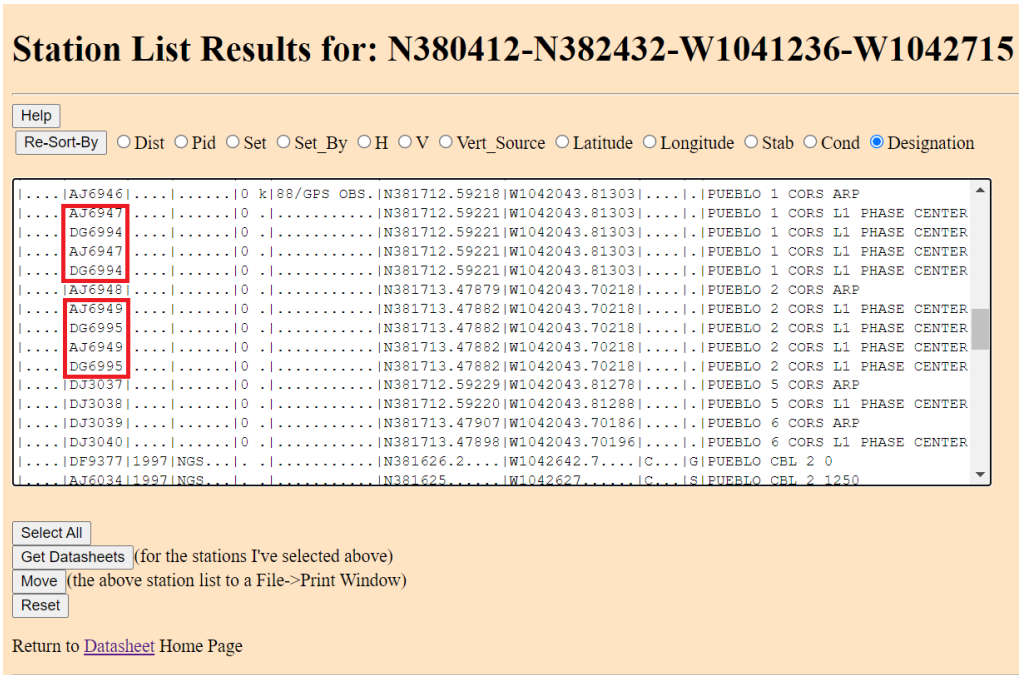
There are 4 changes to datasheets in this version:

#1: Whenever a user retrieves datasheets with any of the retrieval options (http://www.ngs.noaa.gov/cgi-bin/ds_desig.prl, http://www.ngs.noaa.gov/cgi-bin/ds_pid.prl, http://www.ngs.noaa.gov/cgi-bin/ds_county.prl, http://www.ngs.noaa.gov/cgi-bin/ds_radius.prl, http://www.ngs.noaa.gov/cgi-bin/ds_mm.prl, http://www.ngs.noaa.gov/cgi-bin/ds_quads.prl, http://www.ngs.noaa.gov/cgi-bin/ds_proj.prl, http://www.ngs.noaa.gov/cgi-bin/ds_dates.prl, and http://www.ngs.noaa.gov/cgi-bin/ds_cors.prl), control points that are *not* publishable will be listed in a report that is appended to the datasheet output after the last datasheet.

#2: Whenever a user retrieved datasheets with any of the retrieval options listed in #1, the resulting mark listing sometimes would display duplicates if CORS were in the listing. This was due to a sort order issue. An example of the original issue is shown below.

Steps:

1. Go to https://www.ngs.noaa.gov/cgi-bin/ds_mm.prl
2. Enter a MIN_LAT of N380412, MAX_LAT of N382432, MIN_LON of W1041236, MAX_LON of W1042715, leave all other field on their default settings, and then press the *[Submit]* button.
3. On the next page, scroll down the page until you see CORS with PIDs: AJ6947, DG6994, AJ6949, DJ6995. You will see that they are duplicated as shown below.



Station List Results for: N380412-N382432-W1041236-W1042715

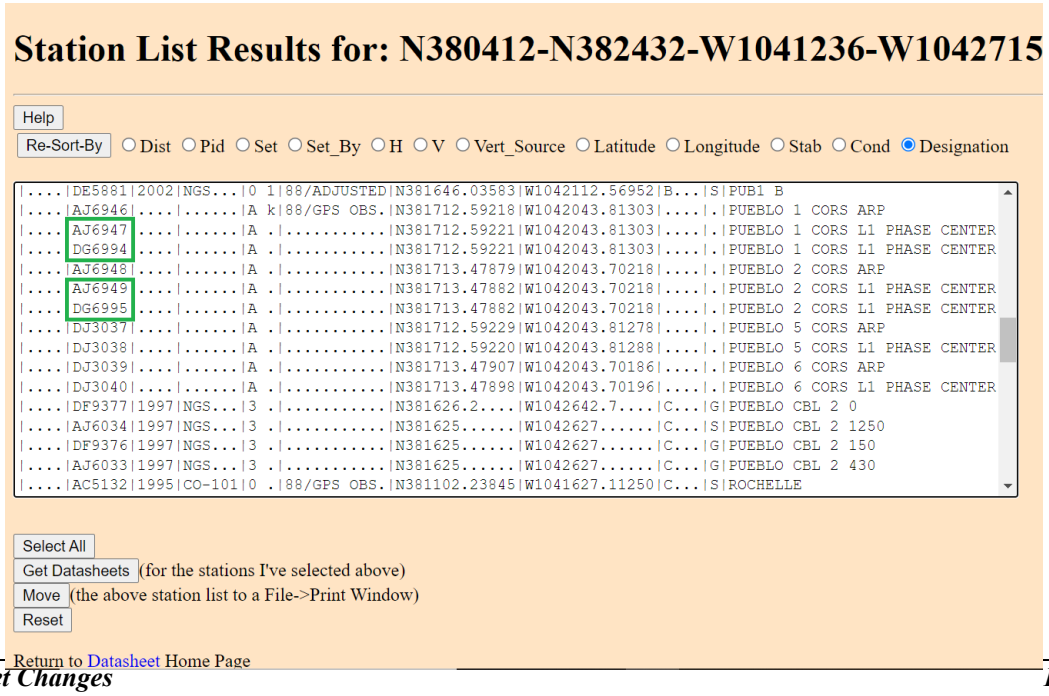
Help
Re-Sort-By ○ Dist ○ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ◉ Designation

```
|....|AJ6946|....|......|0 k|88/GPS OBS.|N381712.59218|W1042043.81303|....|.|PUEBLO 1 CORS ARP
|....|AJ6947|....|......|0 .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|DG6994|....|......|0 .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|AJ6947|....|......|0 .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|DG6994|....|......|0 .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|AJ6948|....|......|0 .|...........|N381713.47879|W1042043.70218|....|.|PUEBLO 2 CORS ARP
|....|AJ6949|....|......|0 .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|DG6995|....|......|0 .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|AJ6949|....|......|0 .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|DG6995|....|......|0 .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|DJ3037|....|......|0 .|...........|N381712.59229|W1042043.81278|....|.|PUEBLO 5 CORS ARP
|....|DJ3038|....|......|0 .|...........|N381712.59220|W1042043.81288|....|.|PUEBLO 5 CORS L1 PHASE CENTER
|....|DJ3039|....|......|0 .|...........|N381713.47907|W1042043.70186|....|.|PUEBLO 6 CORS ARP
|....|DJ3040|....|......|0 .|...........|N381713.47898|W1042043.70196|....|.|PUEBLO 6 CORS L1 PHASE CENTER
|....|DF9377|1997|NGS...|. .|...........|N381626.2....|W1042642.7....|C...|G|PUEBLO CBL 2 0
|....|AJ6034|1997|NGS...|. .|...........|N381625......|W1042627......|C...|S|PUEBLO CBL 2 1250
```

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

This sort issue has been corrected. Enacting the same steps as above will now display these CORS without duplicates, as shown below.



Station List Results for: N380412-N382432-W1041236-W1042715

Help
Re-Sort-By ○ Dist ○ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ◉ Designation

```
|....|DE5881|2002|NGS...|0 1|88/ADJUSTED|N381646.03583|W1042112.56952|B...|S|PUB1 B
|....|AJ6946|....|......|A k|88/GPS OBS.|N381712.59218|W1042043.81303|....|.|PUEBLO 1 CORS ARP
|....|AJ6947|....|......|A .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|DG6994|....|......|A .|...........|N381712.59221|W1042043.81303|....|.|PUEBLO 1 CORS L1 PHASE CENTER
|....|AJ6948|....|......|A .|...........|N381713.47879|W1042043.70218|....|.|PUEBLO 2 CORS ARP
|....|AJ6949|....|......|A .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|DG6995|....|......|A .|...........|N381713.47882|W1042043.70218|....|.|PUEBLO 2 CORS L1 PHASE CENTER
|....|DJ3037|....|......|A .|...........|N381712.59229|W1042043.81278|....|.|PUEBLO 5 CORS ARP
|....|DJ3038|....|......|A .|...........|N381712.59220|W1042043.81288|....|.|PUEBLO 5 CORS L1 PHASE CENTER
|....|DJ3039|....|......|A .|...........|N381713.47907|W1042043.70186|....|.|PUEBLO 6 CORS ARP
|....|DJ3040|....|......|A .|...........|N381713.47898|W1042043.70196|....|.|PUEBLO 6 CORS L1 PHASE CENTER
|....|DF9377|1997|NGS...|3 .|...........|N381626.2....|W1042642.7....|C...|G|PUEBLO CBL 2 0
|....|AJ6034|1997|NGS...|3 .|...........|N381625......|W1042627......|C...|S|PUEBLO CBL 2 1250
|....|DF9376|1997|NGS...|3 .|...........|N381625......|W1042627......|C...|G|PUEBLO CBL 2 150
|....|AJ6033|1997|NGS...|3 .|...........|N381625......|W1042627......|C...|G|PUEBLO CBL 2 430
|....|AC5132|1995|CO-101|0 .|88/GPS OBS.|N381102.23845|W1041627.11250|C...|S|ROCHELLE
```

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

Please note that in the above picture, that PID AJ6947 represents the inactive L1 Phase Center for the ARP with PID AJ6946, and PID DG6994 represents the active L1 Phase Center for the ARP with PID AJ6946. Similarly, PID AJ6949 represents the inactive L1 Phase Center for the ARP with PID AJ6948, and PID DG6995 represents the active L1 Phase Center for the ARP with PID AJ6948. All four of these L1 Phase Centers (active and inactive) will never produce a datasheet as L1 Phase Centers are non-publishable. However, they will appear in the reason code report, which is displayed after the last datasheet whenever one uses any of the datasheet retrieval pages. The reason code report for the above datasheet retrieval by area (MIN/MAX LAT/LON) is shown below with the L1 Phase Centers highlighted in green.

```
-------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
 -   associated with a horizontal control Nonpub code shown under             -
 -   the heading 'H' and/or a vertical control Nonpub code shown under        -
 -   the heading 'v'                                                          -
 -                                                                            -
 -   The format of the records are as follows:                                -
 -       Pid  = Station Permanent Identifier)                                 -
 -       Name = Station Designation                                           -
 -       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)        -
 -       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)       -
 -       O    = Horizontal Order                                              -
 -       o    = Vertical Order                                                -
 -       H    = Horizontal Nonpub Code                                        -
 -       v    = Vertical Nonpub Code                                          -
 -                                                                            -
 -       H Nonpub HORIZONTAL CONTROL NONPUB REASON                            -
 -       -------- --------------------------------                            -
 -       B        Station is a RBN antenna                                    -
 -       C        Not a publishable datum within the state                    -
 -       D        No descriptive text available                               -
 -       I        No NAD83 coordinates available, only IGS08 coordinates      -
 -       L        CORS L1 Phase Center is not publishable                     -
 -       N        No geodetic control                                         -
 -       O        Outside NGS publication area                                -
 -       P        Purpose of position is not for network control              -
 -       R        Restricted position                                         -
 -       T        Station is a temporary point/bench mark                     -
 -       V        Station is a VOR antenna                                    -
 -       W        Weakly determined position                                  -
 -       X        Surface mark reported destroyed                             -
 -       Y        Surface and underground mark reported destroyed             -
                                                                              -
 -       v Nonpub VERTICAL CONTROL NONPUB REASON                              -
 -       -------- ------------------------------                              -
 -       C        Not a publishable datum within the state                    -
 -       D        No descriptive text available                               -
 -       F        Bench mark not yet adjusted                                 -
 -       N        No geodetic control                                         -
 -       L        CORS L1 Phase Center is not publishable                     -
 -       O        Outside NGS publication area                                -
 -       R        Restricted elevation                                        -
 -       S        Mark is in a subsidence area                                -
 -       T        Station is a temporary point/bench mark                     -
 -       X        Surface mark reported destroyed                             -
 -       Y        Surface and underground mark reported destroyed             -
 -       Z        Presumed destroyed                                          -
 -                                                                            -
```

```
-                                                                              -
-   NOTE - Stations found in this listing may still have a valid               -
-          datasheet produced by use of other publishable values.              -
-          For example, an ADJUSTED height may be non-publishable              -
-          but a good GPS height might be found on the datasheet.              -
-                                                                              -
-          If a mark/control point is in a subsidence area, you can request    -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section     -
-          of its datasheet by checking the 'Include suspect heights in        -
-          subsidence area' checkbox on the datasheet retrieval pages.         -
-                                                                              -
------------------------------------------------------------------------------
 Pid    Name                            Lat         Lon         Elev      O o Hv
 ------ ------------------------------ ---------- ----------- --------- - - --
>CM8556 BUTLER BUTTE AZ MK             38 07 14. /104 17 55.                 DD
>CM8557 BUTLER BUTTE RM 1              38 07 16. /104 17 55.                 DD
>CM8558 BUTLER BUTTE RM 2              38 07 15. /104 17 55.                 DD
>AJ6947 PUEBLO 1 CORS L1 PHASE CENTER 38 17 12. /104 20 43.                 LL
>DG6994 PUEBLO 1 CORS L1 PHASE CENTER 38 17 12. /104 20 43.                 LL
>AJ6949 PUEBLO 2 CORS L1 PHASE CENTER 38 17 13. /104 20 43.                 LL
>DG6995 PUEBLO 2 CORS L1 PHASE CENTER 38 17 13. /104 20 43.                 LL
>DJ3038 PUEBLO 5 CORS L1 PHASE CENTER 38 17 12. /104 20 43.                 LL
>DJ3040 PUEBLO 6 CORS L1 PHASE CENTER 38 17 13. /104 20 43.                 LL
>DF9377 PUEBLO CBL 2 0                38 16 26. /104 26 42.                 NN
>AJ6034 PUEBLO CBL 2 1250             38 16 25. /104 26 27.                 NN
>DF9376 PUEBLO CBL 2 150              38 16 25. /104 26 27.                 NN
>AJ6033 PUEBLO CBL 2 430              38 16 25. /104 26 27.                 NN
>BO8133 TBM 11                        38 16 27. /104 26 50.                 TT
>BO8134 TBM 12                        38 16 22. /104 25 56.                 TT
>BO8135 TBM 13                        38 16 17. /104 25 01.                 TT
>BO8136 TBM 14                        38 16 13. /104 24 08.                 TT
>BO8137 TBM 15                        38 15 59. /104 22 05.                 TT
>BO8138 TBM 16                        38 15 36. /104 20 11.                 TT
>BO8139 TBM 17                        38 15 33. /104 19 54.                 TT
>BO8140 TBM 18                        38 15 16. /104 17 51.                 TT
>BO8141 TBM 19                        38 15 12. /104 17 19.                 TT
>BO8142 TBM 20                        38 15 04. /104 16 23.                 TT
>BO8143 TBM 21                        38 14 47. /104 14 38.                 TT
>BO8144 TBM 22                        38 14 11. /104 13 14.                 TT
>BO8145 TBM 23                        38 13 44. /104 12 39.                 TT
```

#3: TU0920, a control point on Maui, HI, will now display the following text on its datasheet.

```
TU0920.The orthometric height was determined by differential leveling
TU0920.and adjusted by the National Geodetic Survey in July 2020
TU0920.holding the tidal station 161 5680 C TIDAL to the 1983/2001
TU0920.tidal station epoch value 1.461 meters.
```

#4: NGS has updated several links on datasheets that are listed below.

from:

```
AJ6946.Additional information on MYCS2 is available at
AJ6946.https://geodesy.noaa.gov/CORS/coords.shtml

...
AJ6946.Click photographs - Photos may exist for this station.
```

to:

```
AJ6946.Additional information on MYCS2 is available at
AJ6946.https://geodesy.noaa.gov/CORS/news/mycs2/mycs2.shtml
```

```
...
AJ6946.Click photographs - Photos may exist for this station.
```

from:

```
AJ6946'   ftp://cors.ngs.noaa.gov/cors/README.txt
AJ6946'   ftp://cors.ngs.noaa.gov/cors/coord/coord_14
AJ6946'   ftp://cors.ngs.noaa.gov/cors/station_log
AJ6946'   https://geodesy.noaa.gov/CORS
```

to:

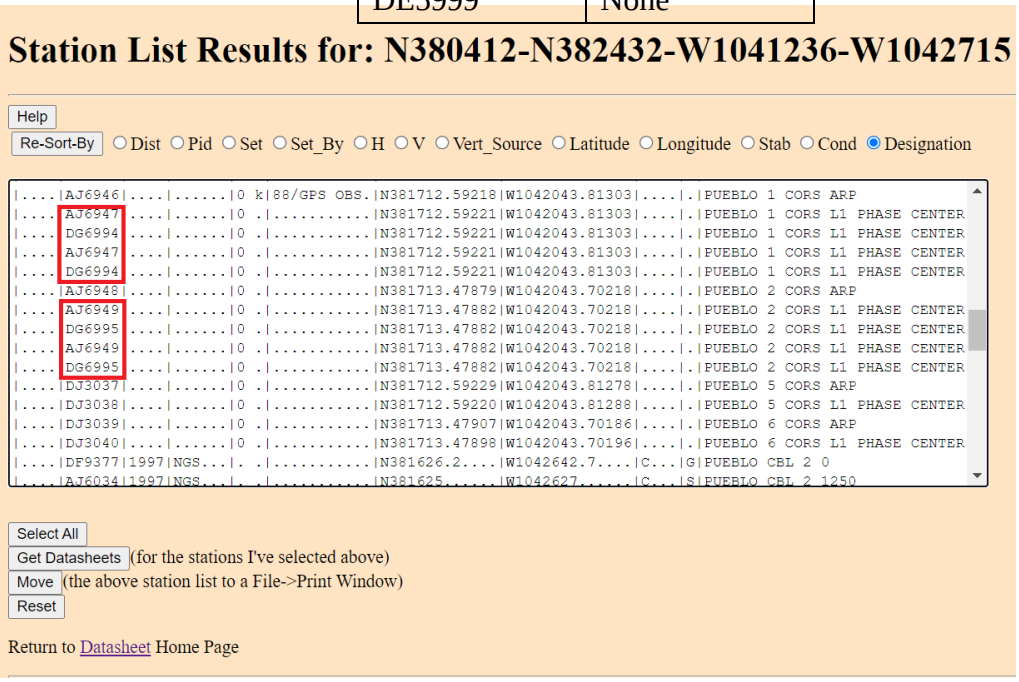
```
AJ6946'   https://geodesy.noaa.gov/corsdata/coord/coord_14
AJ6946'   https://geodesy.noaa.gov/corsdata/station_log
AJ6946'   https://geodesy.noaa.gov/CORS
```

Version 8.12.5.12 updated on 03/03/2021

The Observation and Analysis Division (OAD) in NGS has updated the Southeast Texas *suspect* area to a *subsidence* area. This means that out of approximately 7500 control points in this subsidence area, only 28 are considered to have valid heights. New leveling and/or GNSS data are required in order to densify the network. Below is a list of the 28 specific control points with valid heights.

PID	EPOCH
AF9521	None
AJ8805	None
AW0590	None
AW0591	None
AW0623	None
AW0695	None
AW1082	None
AW1703	None
AW5578	None
AW5707	None
AW7078	None
AX2549	None
AX2552	None
AX2553	None
BK1739	None
BK1753	None
BK1778	None
BK2441	None

BL0169	None
BL0195	None
BL0243	None
BL0356	None
BL0358	None
BL0389	None
BL2014	None
BL2015	None
BL2340	None
DE5999	None



Below is a list of all of the existing subsidence/suspect areas in US states/territories. In the table below, the Southeast Texas suspect area is now considered to be an area of *subsidence* versus a *suspect* area (changes highlighted in green and red).

Dynamic Regions/Subsidence & Suspect Areas

State	Latitude Range	Longitude Range	Area Type
LA	latitude ≤ N303432	longitude ≥ W0912738	Subsidence
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738	Subsidence
LA	latitude ≤ N310002	longitude ≤ W0903401	Subsidence
MS	latitude ≤ N320608	W0882650 ≤ longitude ≤ W0910952	Subsidence
AL	latitude ≤ N312344	longitude ≥ W0880000	Subsidence
FL	N301743 ≤ latitude ≤ N303716	longitude ≥ W0870744	Subsidence
TX	N282900 ≤ latitude ≤ N303000	W0934000 ≤ longitude ≤ W0961500	Subsidence (was Suspect)

Any control point residing in the Southeast Texas subsidence area, N282900 ≤ latitude ≤ N303000 and W0934000 ≤ longitude ≤ W0961500, that is not one of the 28 control points with a valid height will display "NOT PUB" on the "ORTHO HEIGHT −" line of their datasheet, as shown below for PID AW1029.

```
AW1029* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
```

In order to designation that a control point is in the Southeast Texas subsidence area, the following message is displayed beneath the "ORTHO HEIGHT −" line:

```
 <PID>  **This station is in an area of suspected vertical motion (see below).
```

along with the paragraphs:

```
 <PID> ** This station is in an area of suspected vertical motion.  Due to the
 <PID> ** variability of land subsidence, uplift, and crustal motion, NGS
 <PID> ** recommends that all published orthometric heights in such areas be
 <PID> ** validated before used as control. In addition, NGS does not
 <PID> ** recommend using the following types of orthometric heights as
 <PID> ** vertical control: scaled, VERTCON, or superseded. Click here to
 <PID> ** see the list of stations with valid orthometric heights in this area.
 <PID> **
 <PID> ** If an established orthometric height is unavailable in the survey control
 <PID> ** section, it should be considered suspect. To view suspect heights,
 <PID> ** (in the superseded section), select "Include suspect heights in vertical
 <PID> ** motion areas" box from the datasheet retrieval page.
```

An example PID showing this message is AW0590. Pertinent information is highlighted in green for the partial datasheet for AW0590 shown below.

```
AW0590 ***********************************************************************
AW0590  FBN          -  This is a Federal Base Network Control Station.
AW0590  TIDAL BM     -  This is a Tidal Bench Mark.
AW0590  DESIGNATION -  E 168
AW0590  PID          -  AW0590
AW0590  STATE/COUNTY-  TX/GALVESTON
AW0590  COUNTRY      -  US
AW0590  USGS QUAD    -  GALVESTON (2019)
AW0590
AW0590                        *CURRENT SURVEY CONTROL
AW0590 ______________________________________________________________________
AW0590* NAD 83(2011) POSITION- 29 17 20.54501(N) 094 47 21.14978(W)   ADJUSTED
AW0590* NAD 83(2011) ELLIP HT-   -22.204 (meters)        (06/27/12)   ADJUSTED
AW0590* NAD 83(2011) EPOCH    -  2010.00
AW0590* NAVD 88 ORTHO HEIGHT -     4.400 (meters)       14.44  (feet) ADJUSTED
AW0590  **This station is in an area of suspected vertical motion (see below).
AW0590 ______________________________________________________________________
AW0590  GEOID HEIGHT    -        -26.607 (meters)                     GEOID18
AW0590  NAD 83(2011) X  -   -464,807.750 (meters)                     COMP
AW0590  NAD 83(2011) Y  - -5,547,779.163 (meters)                     COMP
AW0590  NAD 83(2011) Z  -  3,101,870.964 (meters)                     COMP
AW0590  LAPLACE CORR    -          1.26  (seconds)                    DEFLEC18
AW0590  DYNAMIC HEIGHT  -          4.394 (meters)       14.42  (feet) COMP
AW0590  MODELED GRAVITY -    979,261.6   (mgal)                       NAVD 88
AW0590  OBS GRAVITY     -    979,258.8   (mgal)                       GRAV_OBS
AW0590
AW0590  VERT ORDER      -  FIRST     CLASS II
AW0590
AW0590  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AW0590  Standards:
AW0590         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AW0590            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
```

```
AW0590  ------------------------------------------------------------------
AW0590  NETWORK    0.35   0.88           0.14   0.15   0.45      0.03950528
AW0590  ------------------------------------------------------------------
AW0590  Click here for local accuracies and other accuracy information.
AW0590
AW0590
AW0590.The horizontal coordinates were established by GPS observations
AW0590.and adjusted by the National Geodetic Survey in June 2012.
AW0590
AW0590.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AW0590.been affixed to the stable North American tectonic plate. See
AW0590.NA2011 for more information.
AW0590
AW0590.The horizontal coordinates are valid at the epoch date displayed above
AW0590.which is a decimal equivalence of Year/Month/Day.
AW0590
AW0590 ** This station is in an area of suspected vertical motion.  Due to the
AW0590 ** variability of land subsidence, uplift, and crustal motion, NGS
AW0590 ** recommends that all published orthometric heights in such areas be
AW0590 ** validated before used as control. In addition, NGS does not
AW0590 ** recommend using the following types of orthometric heights as
AW0590 ** vertical control: scaled, VERTCON, or superseded. Click here to
AW0590 ** see the list of stations with valid orthometric heights in this area.
AW0590 **
AW0590 ** If an established orthometric height is unavailable in the survey control
AW0590 ** section, it should be considered suspect. To view suspect heights,
AW0590 ** (in the superseded section), select "Include suspect heights in vertical
AW0590 ** motion areas" box from the datasheet retrieval page.
AW0590
AW0590.The orthometric height was determined by differential leveling and
AW0590.adjusted by the NATIONAL GEODETIC SURVEY
AW0590.in March 1997.
AW0590
AW0590.Significant digits in the geoid height do not necessarily reflect accuracy.
AW0590.GEOID18 height accuracy estimate available here.
AW0590
AW0590.This Tidal Bench Mark is designated as VM 856
AW0590.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
AW0590
AW0590.Click photographs - Photos may exist for this station.
AW0590
AW0590.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AW0590
AW0590.The Laplace correction was computed from DEFLEC18 derived deflections.
AW0590
AW0590.The ellipsoidal height was determined by GPS observations
AW0590.and is referenced to NAD 83.
AW0590
AW0590.The dynamic height is computed by dividing the NAVD 88
AW0590.geopotential number by the normal gravity value computed on the
AW0590.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AW0590.degrees latitude (g = 980.6199 gals.).
AW0590
AW0590.The modeled gravity was interpolated from observed gravity values.
AW0590
AW0590.The observed gravity was obtained from relative gravimeter ties
AW0590.to the IGSN71 gravity network.
AW0590
AW0590. The following values were computed from the NAD 83(2011) position.
AW0590
AW0590;                    North         East     Units Scale Factor Converg.
AW0590;SPC TXSC     - 4,168,694.608 1,009,004.096   MT  0.99986356   +2 03 46.5
AW0590;SPC TXSC     -13,676,792.23  3,310,374.27   sFT  0.99986356   +2 03 46.5
AW0590;UTM  15      - 3,241,337.314   326,203.428   MT  0.99997273   -0 52 31.9
AW0590
AW0590!             -  Elev Factor  x  Scale Factor =   Combined Factor
AW0590!SPC TXSC     -   1.00000349  x   0.99986356  =   0.99986705
AW0590!UTM  15      -   1.00000349  x   0.99997273  =   0.99997622
AW0590
AW0590_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RUN2620341337(NAD 83)
AW0590
```

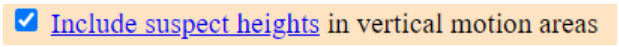
```
AW0590                        SUPERSEDED SURVEY CONTROL
AW0590
AW0590  NAD 83(2007)-  29 17 20.54476(N)     094 47 21.15052(W) AD(2002.00) 0
AW0590  ELLIP H (02/10/07)  -22.192  (m)                        GP(2002.00)
AW0590  NAD 83(1993)-  29 17 20.54505(N)     094 47 21.15036(W) AD(       ) A
AW0590  ELLIP H (05/01/00)  -22.163  (m)                        GP(       ) 3 1
AW0590  NAVD 88               4.40   (m)           14.4    (f) LEVELING    3
AW0590  NAVD 88 (06/15/91)    4.456  (m)           14.62   (f) SUPERSEDED  1 1
AW0590  NGVD 29 (??/??/87)    4.521  (m)           14.83   (f) SUPERSEDED  1 1
AW0590  NGVD 29 (12/23/87)    4.452  (m)           14.61   (f) ADJUSTED    1 1
AW0590
AW0590.Superseded values are not recommended for survey control.
AW0590
. . .
```

Control points in the SouthEast Texas subsidence area that are not one of the 28 control points with valid heights will display “NOT PUB” on their “ORTHO HEIGHT – “ line in the CURRENT SURVEY CONTROL section of the datasheet and no suspect heights in the SUPERSEDED SURVEY CONTROL section of their datasheet, as shown below for PID AW1029.

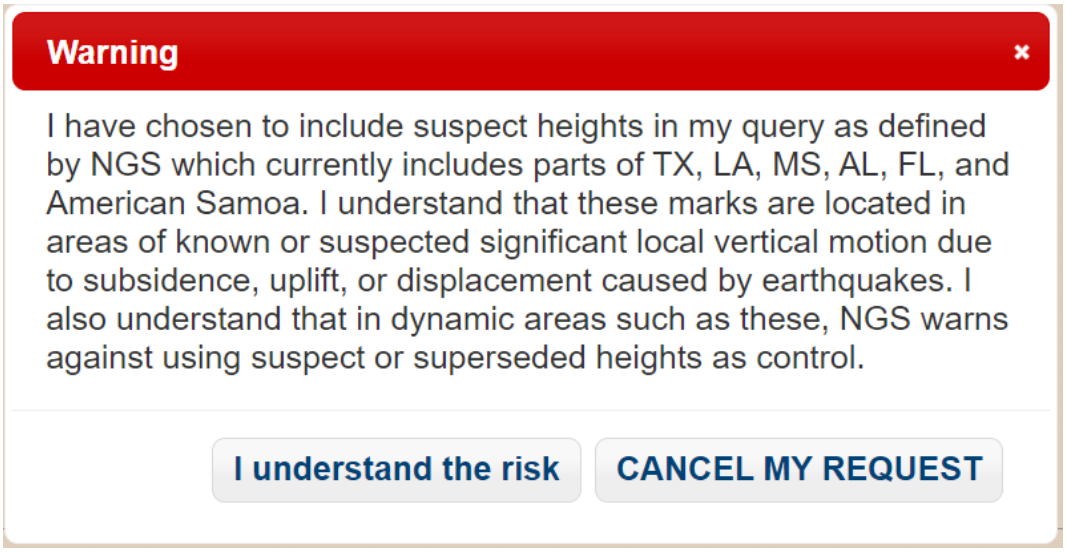
```
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 19, 2021
 AW1029 ***********************************************************************
 AW1029  DESIGNATION -  J 1187
 AW1029  PID         -  AW1029
 AW1029  STATE/COUNTY-  TX/HARRIS
 AW1029  COUNTRY     -  US
 AW1029  USGS QUAD   -  LEAGUE CITY (2019)
 AW1029
 AW1029                       *CURRENT SURVEY CONTROL
 AW1029  ______________________________________________________________________
 AW1029* NAD 83(2011) POSITION- 29 33 06.67704(N) 095 05 22.75228(W)   ADJUSTED
 AW1029* NAD 83(2011) ELLIP HT-   -22.330 (meters)        (06/27/12)   ADJUSTED
 AW1029* NAD 83(2011) EPOCH    -  2010.00
 AW1029* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AW1029  **This station is in an area of suspected vertical motion (see below).
 AW1029  ______________________________________________________________________
 AW1029  GEOID HEIGHT    -        -27.067 (meters)                     GEOID18
 AW1029  NAD 83(2011) X  -   -492,622.959 (meters)                     COMP
 AW1029  NAD 83(2011) Y  - -5,531,012.326 (meters)                     COMP
 AW1029  NAD 83(2011) Z  -  3,127,245.078 (meters)                     COMP
 AW1029  LAPLACE CORR    -          0.46  (seconds)                    DEFLEC18
 AW1029  DYNAMIC HEIGHT  -          4.77  (meters)       15.6   (feet) COMP
 AW1029  MODELED GRAVITY -    979,273.1   (mgal)                       NAVD 88
 AW1029  OBS GRAVITY     -    979,275.3   (mgal)                       GRAV_OBS
 AW1029
 AW1029  VERT ORDER      -  * READJUSTED, SEE BELOW
 AW1029
 AW1029  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AW1029  Standards:
 AW1029         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AW1029            Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
 AW1029  ------------------------------------------------------------------
 AW1029  NETWORK    3.64  21.95          1.51   1.45  11.20     -0.22194229
 AW1029  ------------------------------------------------------------------
 AW1029  Click here for local accuracies and other accuracy information.
 AW1029
 AW1029
 AW1029.The horizontal coordinates were established by GPS observations
 AW1029.and adjusted by the National Geodetic Survey in June 2012.
 AW1029
 AW1029.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AW1029.been affixed to the stable North American tectonic plate. See
 AW1029.NA2011 for more information.
 AW1029
 AW1029.The horizontal coordinates are valid at the epoch date displayed above
 AW1029.which is a decimal equivalence of Year/Month/Day.
 AW1029
 AW1029 ** This station is in an area of suspected vertical motion.  Due to the
```

```
AW1029 ** variability of land subsidence, uplift, and crustal motion, NGS
AW1029 ** recommends that all published orthometric heights in such areas be
AW1029 ** validated before used as control. In addition, NGS does not
AW1029 ** recommend using the following types of orthometric heights as
AW1029 ** vertical control: scaled, VERTCON, or superseded. Click here to
AW1029 ** see the list of stations with valid orthometric heights in this area.
AW1029 **
AW1029 ** If an established orthometric height is unavailable in the survey control
AW1029 ** section, it should be considered suspect. To view suspect heights,
AW1029 ** (in the superseded section), select "Include suspect heights in vertical
AW1029 ** motion areas" box from the datasheet retrieval page.
AW1029
AW1029.The orthometric height was determined by differential leveling
AW1029.and adjusted by the NATIONAL GEODETIC SURVEY in August 1995.
AW1029
AW1029.* This is a READJUSTED BENCH MARK height.
AW1029
AW1029.The height was derived from older observations constrained to new
AW1029.heights in a crustal motion area.  The height is approximate in
AW1029.relation to other heights in its vicinity.
AW1029
AW1029.Significant digits in the geoid height do not necessarily reflect accuracy.
AW1029.GEOID18 height accuracy estimate available here.
AW1029
AW1029.Click photographs - Photos may exist for this station.
AW1029
AW1029.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AW1029
AW1029.The Laplace correction was computed from DEFLEC18 derived deflections.
AW1029
AW1029.The ellipsoidal height was determined by GPS observations
AW1029.and is referenced to NAD 83.
AW1029
AW1029.The dynamic height is computed by dividing the NAVD 88
AW1029.geopotential number by the normal gravity value computed on the
AW1029.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AW1029.degrees latitude (g = 980.6199 gals.).
AW1029
AW1029.The modeled gravity was interpolated from observed gravity values.
AW1029
AW1029.The observed gravity was obtained from relative gravimeter ties
AW1029.to the IGSN71 gravity network.
AW1029
AW1029. The following values were computed from the NAD 83(2011) position.
AW1029
AW1029;                    North         East     Units Scale Factor Converg.
AW1029;SPC TXSC     - 4,196,792.220   978,858.741   MT  0.99987038   +1 54 56.6
AW1029;SPC TXSC     -13,768,975.81  3,211,472.39   sFT  0.99987038   +1 54 56.6
AW1029;UTM  15      - 3,270,950.401   297,535.172   MT  1.00010582   -1 01 51.6
AW1029
AW1029!             -  Elev Factor  x  Scale Factor =   Combined Factor
AW1029!SPC TXSC     -   1.00000351  x   0.99987038  =   0.99987389
AW1029!UTM  15      -   1.00000351  x   1.00010582  =   1.00010933
AW1029
AW1029_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RTN9753570950(NAD 83)
AW1029
AW1029                          SUPERSEDED SURVEY CONTROL
AW1029
AW1029  NAD 83(2007)-  29 33 06.67655(N)    095 05 22.75329(W) AD(2002.00) 0
AW1029  ELLIP H (02/10/07)  -22.328  (m)                       GP(2002.00)
AW1029  NAD 83(1993)-  29 33 06.67619(N)    095 05 22.75313(W) AD(       ) 1
AW1029  ELLIP H (12/03/01)  -22.263  (m)                       GP(       ) 4 2
AW1029  ELLIP H (10/25/00)  -22.270  (m)                       GP(       ) 4 1
AW1029  NAD 83(1993)-  29 33 06.67635(N)    095 05 22.75243(W) AD(       ) 1
AW1029  ELLIP H (10/17/96)  -22.142  (m)                       GP(       ) 3 1
AW1029
AW1029.Superseded values are not recommended for survey control.
AW1029
...
```

A user can turn on/list suspect heights for control points in the SUPERSEDED SURVEY CONTROL section of their datasheet by checking the



checkbox on the datasheet retrieval pages (such as https://dev.nosngs.noaa/cgi-bin/ds_pid.prl, https://dev.nosngs.noaa/cgi-bin/ds_country.prl, https://dev.nosngs.noaa/cgi-bin/ds_dates.prl, https://dev.nosngs.noaa/cgi-bin/ds_desig.prl, https://dev.nosngs.noaa/cgi-bin/ds_mm.prl, https://dev.nosngs.noaa/cgi-bin/ds_quads.prl, and https://dev.nosngs.noaa/cgi-bin/ds_radius.prl). Before these suspect heights are displayed on their datasheets, however, a user must first press the [I understand the risk] button on the Warning message that displays:



In our example, PID AW1029, the suspect heights will be displayed in the SUPERSEDED SURVEY CONTROL section of the datasheets as shown below with the pertinent text highlighted in yellow.

```
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = FEBRUARY 19, 2021
 AW1029 ***********************************************************************
 AW1029  DESIGNATION -  J 1187
 AW1029  PID         -  AW1029
 AW1029  STATE/COUNTY-  TX/HARRIS
 AW1029  COUNTRY     -  US
 AW1029  USGS QUAD   -  LEAGUE CITY (2019)
 AW1029
 AW1029                        *CURRENT SURVEY CONTROL
 AW1029  ______________________________________________________________________
 AW1029* NAD 83(2011) POSITION- 29 33 06.67704(N) 095 05 22.75228(W)   ADJUSTED
 AW1029* NAD 83(2011) ELLIP HT-   -22.330 (meters)        (06/27/12)   ADJUSTED
 AW1029* NAD 83(2011) EPOCH   -  2010.00
 AW1029* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AW1029  **This station is in an area of suspected vertical motion (see below).
 AW1029  ______________________________________________________________________
 AW1029  GEOID HEIGHT    -        -27.067 (meters)                     GEOID18
 AW1029  NAD 83(2011) X  -   -492,622.959 (meters)                     COMP
 AW1029  NAD 83(2011) Y  - -5,531,012.326 (meters)                     COMP
 AW1029  NAD 83(2011) Z  -  3,127,245.078 (meters)                     COMP
 AW1029  LAPLACE CORR    -          0.46  (seconds)                    DEFLEC18
 AW1029  DYNAMIC HEIGHT  -          4.77  (meters)       15.6   (feet) COMP
 AW1029  MODELED GRAVITY -    979,273.1   (mgal)                       NAVD 88
 AW1029  OBS GRAVITY     -    979,275.3   (mgal)                       GRAV_OBS
 AW1029
```

```
AW1029  VERT ORDER      -  * READJUSTED, SEE BELOW
AW1029
AW1029  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AW1029  Standards:
AW1029         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AW1029            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AW1029  ------------------------------------------------------------------
AW1029  NETWORK    3.64  21.95           1.51   1.45  11.20     -0.22194229
AW1029  ------------------------------------------------------------------
AW1029  Click here for local accuracies and other accuracy information.
AW1029
AW1029
AW1029.The horizontal coordinates were established by GPS observations
AW1029.and adjusted by the National Geodetic Survey in June 2012.
AW1029
AW1029.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AW1029.been affixed to the stable North American tectonic plate. See
AW1029.NA2011 for more information.
AW1029
AW1029.The horizontal coordinates are valid at the epoch date displayed above
AW1029.which is a decimal equivalence of Year/Month/Day.
AW1029
AW1029 ** This station is in an area of suspected vertical motion.  Due to the
AW1029 ** variability of land subsidence, uplift, and crustal motion, NGS
AW1029 ** recommends that all published orthometric heights in such areas be
AW1029 ** validated before used as control. In addition, NGS does not
AW1029 ** recommend using the following types of orthometric heights as
AW1029 ** vertical control: scaled, VERTCON, or superseded. Click here to
AW1029 ** see the list of stations with valid orthometric heights in this area.
AW1029 **
AW1029 ** If an established orthometric height is unavailable in the survey control
AW1029 ** section, it should be considered suspect. To view suspect heights,
AW1029 ** (in the superseded section), select "Include suspect heights in vertical
AW1029 ** motion areas" box from the datasheet retrieval page.
AW1029
AW1029.The orthometric height was determined by differential leveling
AW1029.and adjusted by the NATIONAL GEODETIC SURVEY in August 1995.
AW1029
AW1029.* This is a READJUSTED BENCH MARK height.
AW1029
AW1029.The height was derived from older observations constrained to new
AW1029.heights in a crustal motion area.  The height is approximate in
AW1029.relation to other heights in its vicinity.
AW1029
AW1029.Significant digits in the geoid height do not necessarily reflect accuracy.
AW1029.GEOID18 height accuracy estimate available here.
AW1029
AW1029.Click photographs - Photos may exist for this station.
AW1029
AW1029.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AW1029
AW1029.The Laplace correction was computed from DEFLEC18 derived deflections.
AW1029
AW1029.The ellipsoidal height was determined by GPS observations
AW1029.and is referenced to NAD 83.
AW1029
AW1029.The dynamic height is computed by dividing the NAVD 88
AW1029.geopotential number by the normal gravity value computed on the
AW1029.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AW1029.degrees latitude (g = 980.6199 gals.).
AW1029
AW1029.The modeled gravity was interpolated from observed gravity values.
AW1029
AW1029.The observed gravity was obtained from relative gravimeter ties
AW1029.to the IGSN71 gravity network.
AW1029
AW1029. The following values were computed from the NAD 83(2011) position.
AW1029
AW1029;                    North         East     Units Scale Factor Converg.
AW1029;SPC TXSC     - 4,196,792.220   978,858.741   MT  0.99987038   +1 54 56.6
AW1029;SPC TXSC     -13,768,975.81  3,211,472.39   sFT  0.99987038   +1 54 56.6
```

```
 AW1029;UTM  15      - 3,270,950.401   297,535.172   MT  1.00010582   -1 01 51.6
 AW1029
 AW1029!             -  Elev Factor  x  Scale Factor =   Combined Factor
 AW1029!SPC TXSC     -   1.00000351  x   0.99987038  =   0.99987389
 AW1029!UTM  15      -   1.00000351  x   1.00010582  =   1.00010933
 AW1029
 AW1029_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RTN9753570950(NAD 83)
 AW1029
 AW1029                        SUPERSEDED SURVEY CONTROL
 AW1029
 AW1029  NAD 83(2007)-  29 33 06.67655(N)     095 05 22.75329(W) AD(2002.00) 0
 AW1029  ELLIP H (02/10/07)  -22.328  (m)                        GP(2002.00)
 AW1029  NAD 83(1993)-  29 33 06.67619(N)     095 05 22.75313(W) AD(       ) 1
 AW1029  ELLIP H (12/03/01)  -22.263  (m)                        GP(       ) 4 2
 AW1029  ELLIP H (10/25/00)  -22.270  (m)                        GP(       ) 4 1
 AW1029  NAD 83(1993)-  29 33 06.67635(N)     095 05 22.75243(W) AD(       ) 1
 AW1029  ELLIP H (10/17/96)  -22.142  (m)                        GP(       ) 3 1
 AW1029  NAVD 88 (12/03/01)    4.77   (m)  GEOID99 model used   GPS OBS
 AW1029  NAVD 88 (10/17/96)    4.75   (m)  GEOID93 model used   GPS OBS
 AW1029  NAVD 88 (08/31/95)    4.777  (m)           15.67   (f) READJUSTED  3
 AW1029  NAVD 88 (06/15/91)    4.796  (m)           15.73   (f) SUPERSEDED  1 1
 AW1029  NGVD 29 (??/??/87)    4.857  (m)           15.94   (f) SUPERSEDED  1 1
 AW1029  NGVD 29 (12/23/87)    4.793  (m)           15.73   (f) ADJUSTED    1 1
 AW1029
 AW1029.Superseded values are not recommended for survey control.
 AW1029
...
```

Version 8.12.5.11 updated on 12/15/2020

Over the last two years, the National Geodetic Survey's Observation and Analysis Division has worked with the Natural Resources Canada and NGS' System Development Division to make publishable NGS' datasheets for marks found in Canada. The positional and height information provided upon these data sheets will not be officially recognized by the Government of Canada, the provincial governments within Canada, nor are they intended to replace or substitute for them. The intent of sharing these NGS datasheets is to allow access to positions or heights recognized by the United States Government. Passive control that is used by both nations may share the same or similar designations or descriptions but do not share official positions or heights. The "Station Description" may originate from a Canadian "Station Report" and if so contains information licensed under the "Open Government License - Canada".

In this version of datasheets for Canada, there is a new drop-down list box for the “Pick a State” field on the following web pages:
https://www.ngs.noaa.gov/cgi-bin/ds_county.prl
https://www.ngs.noaa.gov/cgi-bin/ds_county_sf.prl
https://www.ngs.noaa.gov/cgi-bin/ds_desig.prl
https://www.ngs.noaa.gov/cgi-bin/ds_desig_sf.prl

The *Pick a State* drop-down list box will now display the following states (Canadian states are highlighted in green):

```
ALABAMA
ALASKA
ARIZONA
ARKANSAS
CALIFORNIA
COLORADO
CONNECTICUT
DELAWARE
DISTRICT OF COLUMBIA
FLORIDA
```

GEORGIA
HAWAII
IDAHO
ILLINOIS
INDIANA
IOWA
KANSAS
KENTUCKY
LOUISIANA
MAINE
MARYLAND
MASSACHUSETTS
MICHIGAN
MISSISSIPPI
MISSOURI
MONTANA
MINNESOTA
NEBRASKA
NEVADA
NEW HAMPSHIRE
NEW JERSEY
NEW MEXICO
NEW YORK
NORTH CAROLINA
NORTH DAKOTA
OHIO
OKLAHOMA
OREGON
PENNSYLVANIA
RHODE ISLAND
SOUTH CAROLINA
SOUTH DAKOTA
TENNESSEE
TEXAS
UTAH
VERMONT
VIRGINIA
WASHINGTON
WEST VIRGINIA
WISCONSIN
WYOMING
US ECONOMIC EXCLUSION ZONE U1 FOR NAD83 2011
US ECONOMIC EXCLUSION ZONE U2 FOR NAD83 MA11
US ECONOMIC EXCLUSION ZONE U3 FOR NAD83 PA11
US TERRITORY, AMERICAN SAMOA
US TERRITORY, BAKER ISLAND
US TERRITORY, HOWLAND ISLAND
US TERRITORY, JARVIS ISLAND
US TERRITORY, KINGMAN REEF
US TERRITORY, NAVASSA ISLAND
US TERRITORY, PALMYRA ATOLL
US TERRITORY, PUERTO RICO
US TERRITORY, US VIRGIN ISLANDS
PACIFIC ISLAND STATE, GUAM
PACIFIC ISLAND STATE, JOHNSTON ATOLL
PACIFIC ISLAND STATE, MAJURO
PACIFIC ISLAND STATE, MIDWAY ISLANDS
PACIFIC ISLAND STATE, NORTHERN MARIANA ISLANDS
PACIFIC ISLAND STATE, REPUBLIC OF MARSHALL ISLANDS
PACIFIC ISLAND STATE, REPUBLIC OF PALAU
PACIFIC ISLAND STATE, FEDERATED STATES OF MICRONESIA
PACIFIC ISLAND STATE, WAKE ISLAND
CARIBBEAN ISLAND STATE, ANGUILLA

```
CARIBBEAN ISLAND STATE, ANTIGUA AND BARBUDA
CARIBBEAN ISLAND STATE, ARUBA
CARIBBEAN ISLAND STATE, BAHAMA ISLANDS
CARIBBEAN ISLAND STATE, BARBADOS
CARIBBEAN ISLAND STATE, BRITISH VIRGIN ISLANDS
CARIBBEAN ISLAND STATE, CAYMAN ISLANDS
CARIBBEAN ISLAND STATE, CURACAO
CARIBBEAN ISLAND STATE, DOMINICA
CARIBBEAN ISLAND STATE, DOMINICAN REPUBLIC
CARIBBEAN ISLAND STATE, GRENADA
CARIBBEAN ISLAND STATE, GUYANA
CARIBBEAN ISLAND STATE, HAITI
CARIBBEAN ISLAND STATE, JAMAICA
CARIBBEAN ISLAND STATE, ST KITTS AND NEVIS
CARIBBEAN ISLAND STATE, ST LUCIA
CARIBBEAN ISLAND STATE, ST MAARTEN
CARIBBEAN ISLAND STATE, ST VINCENT AND GRENADINES
CARIBBEAN ISLAND STATE, TRINIDAD AND TOBAGO
CANADA, ALBERTA
CANADA, BRITISH COLUMBIA
CANADA, MANITOBA
CANADA, NEW BRUNSWICK
CANADA, NEWFOUNDLAND
CANADA, NORTHWEST TERRITORIES
CANADA, NOVA SCOTIA
CANADA, NUNAVUT
CANADA, ONTARIO
CANADA, PRINCE EDWARD ISLAND
CANADA, QUEBEC
CANADA, SASKATCHEWAN
CANADA, YUKON
CENTRAL AMERICA, EL SALVADOR
CENTRAL AMERICA, GUATEMALA,
CENTRAL AMERICA, HONDURAS
CENTRAL AMERICA, NICARAGUA
SOUTH AMERICA, SURINAM
```

Additionally, you will note that some of the state in the list have been reordered to give a better grouping and are alphabetically listed within that grouping (i.e. all US states are grouped together, all Caribbean Island States are grouped together, all Candian provinces are grouped together, etc.).

Prior to this the *Pick a State* drop-down list box contained the following states:

```
ALABAMA
ALASKA
AMERICAN SAMOA
ANGUILLA
ANTIGUA AND BARBUDA
ARIZONA
ARKANSAS
ARUBA
BAHAMA ISLANDS
BAKER ISLAND
BARBADOS
BRITISH VIRGIN ISLANDS
CALIFORNIA
CAYMAN ISLANDS
COLORADO
CONNECTICUT
CURACAO
DELAWARE
```

DISTRICT OF COLUMBIA
DOMINICA
DOMINICAN REPUBLIC
El SALVADOR
FEDERATED STATES OF MICRONESIA
FLORIDA
GEORGIA
GRENADA
GUATEMALA
GUAM
GUYANA
HAITI
HAWAII
HONDURAS
HOWLAND ISLAND
IDAHO
ILLINOIS
INDIANA
IOWA
JAMAICA
JARVIS ISLAND
JOHNSTON ATOLL
KANSAS
KENTUCKY
LOUISIANA
MAINE
MARYLAND
MASSACHUSETTS
MICHIGAN
MIDWAY ISLANDS
MINNESOTA
MISSISSIPPI
MISSOURI
MONTANA
NAVASSA ISLAND
NEBRASKA
NEVADA
NEW HAMPSHIRE
NEW JERSEY
NEW MEXICO
NEW YORK
NORTH CAROLINA
NORTH DAKOTA
NORTHERN MARIANA ISLANDS
NICARAGUA
OHIO
OKLAHOMA
OREGON
PENNSYLVANIA
PUERTO RICO
REPUBLIC OF MARSHALL ISLANDS
REPUBLIC OF PALAU
RHODE ISLAND
SOUTH CAROLINA
SOUTH DAKOTA
ST KITTS AND NEVIS
ST LUCIA
ST MAARTEN
ST VINCENT AND GRENADINES
SURINAM
TENNESSEE
TEXAS
TRINIDAD and TOBAGO

```
US ECONOMIC EXCLUSION ZONE U1 FOR NAD83 2011
US ECONOMIC EXCLUSION ZONE U2 FOR NAD83 MA11
US ECONOMIC EXCLUSION ZONE U3 FOR NAD83 PA11
UTAH
US VIRGIN ISLANDS
VERMONT
VIRGINIA
WAKE ISLAND
WASHINGTON
WEST VIRGINIA
WISCONSIN
WYOMING
```

You will be able to retrieve *NST Map Sheets for Canada* in addition to *USGS Quads* via the following web pages:

https://www.ngs.noaa.gov/cgi-bin/ds_quads.prl
https://www.ngs.noaa.gov/cgi-bin/ds_quads_sf.prl

For example, entering a Quad Name of NIAGARA on the https://www.ngs.noaa.gov/cgi-bin/ds_quads.prl web page, and then pressing the [Submit] button, will result in the following output on the next page (Canadian state of Ontario is highlighted in green):

```
|ST|GDA.....|Min_Lat|Min_Long|Max_Lat|Max_Long|QuadName
|--|--------|-------|--------|-------|--------|--------
|NC|13840519|N350730|W0791500|N351500|W0792230|NIAGARA
|ND|10162744|N475230|W0974500|N480000|W0975230|NIAGARA
|ON|030M03  |N430000|W0790000|N431500|W0793000|NIAGARA
|ON|030M02  |N430000|W0783000|N431500|W0790000|NIAGARA
|OR|8836202 |N450730|W1233730|N451500|W1234500|NIAGARA CREEK
|NY|14106480|N430000|W0790000|N430730|W0790730|NIAGARA FALLS
|ID|8866592 |N423730|W1143730|N424500|W1144500|NIAGARA SPRINGS
|ND|10162746|N474500|W0975230|N475230|W0980000|NIAGARA SW
|ON|030M06  |N431500|W0790000|N433000|W0793000|NIAGARA-ON-THE-LAKE
```

Select `|ON|030M06  |N431500|W0790000|N433000|W0793000|NIAGARA-ON-THE-LAKE` and then press the *[Submit]* button. On the next page, a list of control points in this quad will display. Select the *PID* radio button and then press the *[Re-sort By]* button. The control points are now ordered by PID. Select `OG0289` from the list, then hold down the <*CTRL*> button while selecting `OG0322` from the list with your mouse or the <*Enter*> key, and then press the *[Get Datasheets]* button.

Station List Results for: NIAGARA-ON-THE-LAKE

Help

Re-Sort-By ○ Dist ◉ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ○ Designation

```
|....|OG0287|UNK.|USLS..|. 1|88/ADJUSTED|N431542......|W0790349......|D...|G|FORT
|....|OG0288|UNK.|USLS..|. 1|88/ADJUSTED|N431542......|W0790349......|C...|G|905 2090 PIT USLS
|....|OG0289|UNK.|USLS..|. 2|88/ADJUSTED|N431544.0....|W0790347.0....|D...|G|905 2090 SW GATE
|....|OG0290|UNK.|USLS..|. 1|88/ADJUSTED|N431533......|W0790310......|D...|G|NAVAL
|....|OG0291|UNK.|USLS..|. 1|88/ADJUSTED|N431612......|W0790148......|C...|G|DIEZ USLS
|....|OG0316|1977|NGS...|. 1|88/ADJUSTED|N431614......|W0790024......|B...|S|X 409
|....|OG0317|1977|NGS...|. 1|88/ADJUSTED|N431605......|W0790206......|B...|G|Y 409
|....|OG0318|1977|NGS...|. 1|88/ADJUSTED|N431516.7....|W0790300.4....|C...|G|Z 409
|....|OG0319|1976|NOS...|. 2|88/ADJUSTED|N431541......|W0790349......|D...|G|905 2090 FORT A
|....|OG0320|1977|NGS...|. 1|88/ADJUSTED|N431528.0....|W0790405.7....|B...|G|F 410
|....|OG0321|1977|......|. .|29/........|N431541......|W0790351......|....|S|TBM 905 2090 ETG READ MK
|....|OG0322|1963|GSC...|. 1|88/ADJUSTED|N431518.7....|W0790418.2....|B...|G|63U3536
|....|OG0323|1963|GSC...|. 1|88/ADJUSTED|N431518.3....|W0790418.8....|B...|G|63U3537
|....|OG0748|1941|IBC...|2 .|29/VERT ANG|N431517.21059|W0790306.43186|C...|G|VINCENT PIER
|....|OG0749|UNK.|......|3 .|...........|N431543.08090|W0790331.29768|....|G|FT NIAGARA WATER TANK
```

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

The datasheets will display on the next page.

Below are the partial datasheets for these two control points (one in Ontario, Canada and one in New York, USA) with the pertinent text highlighted in green:

```
1        National Geodetic Survey,   Retrieval Date = DECEMBER 10, 2020
 OG0289 ***********************************************************************
 OG0289  DESIGNATION -  905 2090 SW GATE
 OG0289  PID         -  OG0289
 OG0289  STATE/COUNTY-  NY/NIAGARA
 OG0289  COUNTRY     -  US
 OG0289  USGS QUAD   -  FORT NIAGARA (2019)
 OG0289
 OG0289                        *CURRENT SURVEY CONTROL
 OG0289 ______________________________________________________________________
 OG0289* NAD 83(1986) POSITION- 43 15 44.0     (N) 079 03 47.0     (W)    HD_HELD2
 OG0289* NAVD 88 ORTHO HEIGHT -     82.962 (meters)       272.18   (feet) ADJUSTED
 OG0289 ______________________________________________________________________
 OG0289  GEOID HEIGHT    -        -36.167 (meters)                       GEOID18
 OG0289  DYNAMIC HEIGHT  -         82.944 (meters)       272.13   (feet) COMP
 OG0289  MODELED GRAVITY -    980,405.2   (mgal)                         NAVD 88
 OG0289
 OG0289  VERT ORDER      -  SECOND    CLASS II
 OG0289
 OG0289.The horizontal coordinates were established by autonomous hand held GPS
 OG0289.observations and have an estimated accuracy of +/- 10 meters.
 OG0289.
 OG0289.The orthometric height was determined by differential leveling and
 OG0289.adjusted by the NATIONAL GEODETIC SURVEY
 OG0289.in April 2004.
 OG0289
 OG0289.Significant digits in the geoid height do not necessarily reflect accuracy.
 OG0289.GEOID18 height accuracy estimate available here.
```

```
 OG0289
 OG0289.Click photographs - Photos may exist for this station.

. . .

1        National Geodetic Survey,   Retrieval Date = DECEMBER 10, 2020
 OG0322 ***********************************************************************
 OG0322  DESIGNATION -  63U3536
 OG0322  PID         -  OG0322
 OG0322  STATE/COUNTY-  ON/NIAGARA
 OG0322  COUNTRY     -  CANADA
 OG0322  NTS MAPSHEET-  NIAGARA-ON-THE-LAKE (2020)
 OG0322
 OG0322                         *CURRENT SURVEY CONTROL
 OG0322 ______________________________________________________________________
 OG0322* NAD 83(1986) POSITION- 43 15 18.7    (N) 079 04 18.2    (W)    HD_HELD2
 OG0322* NAVD 88 ORTHO HEIGHT -    87.658 (meters)      287.59  (feet) ADJUSTED
 OG0322 ______________________________________________________________________
 OG0322  GEOID HEIGHT    -        -36.801 (meters)                     EGM08
 OG0322  DYNAMIC HEIGHT  -         87.639 (meters)      287.53  (feet) COMP
 OG0322  MODELED GRAVITY -    980,404.0   (mgal)                       NAVD 88
 OG0322
 OG0322  VERT ORDER      -  FIRST     CLASS 0
 OG0322
 OG0322.The positional and height information provided upon this datasheet are not
 OG0322.officially recognized by the Government of Canada, provincial governments
 OG0322.within Canada, nor are they intended to replace or substitute for them.
 OG0322.The intent of sharing this data is to allow access to positions or heights
 OG0322.recognized by the United States Government. Passive control that is used by
 OG0322.both nations may share the same or similar designations or descriptions but
 OG0322.do not share official positions or heights. The "Station Description" may
 OG0322.originate from a Canadian "Station Report" and if so contains information
 OG0322.licensed under the "Open Government License - Canada".
 OG0322
 OG0322
 OG0322.The horizontal coordinates were established by autonomous hand held GPS
 OG0322.observations and have an estimated accuracy of +/- 10 meters.
 OG0322.
 OG0322.The orthometric height was determined by differential leveling and
 OG0322.adjusted by the NATIONAL GEODETIC SURVEY
 OG0322.in June 1991.
 OG0322
 OG0322.Significant digits in the geoid height do not necessarily reflect accuracy.
 OG0322
 OG0322.Click photographs - Photos may exist for this station.
```

Version 8.12.5.10 updated on 09/15/2020

NGS has added a new Datum Origin Point for Maui, HI. It's PID is DK3427. Below is a partial datasheet for DK3427 showing the pertinent new paragraphs are highlighted in green.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  8, 2020
 DK3427 ***********************************************************************
 DK3427  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 DK3427  TIDAL BM    -  This is a Tidal Bench Mark.
 DK3427  DESIGNATION -  161 5680 C TIDAL
 DK3427  PID         -  DK3427
 DK3427  STATE/COUNTY-  HI/MAUI
 DK3427  COUNTRY     -  US
 DK3427  USGS QUAD   -  WAILUKU (2017)
 DK3427
 DK3427                         *CURRENT SURVEY CONTROL
 DK3427 ______________________________________________________________________
 DK3427* NAD 83(PA11) POSITION- 20 53 23.27684(N) 156 28 00.44673(W)   ADJUSTED
 DK3427* NAD 83(PA11) ELLIP HT-    18.007 (meters)        (06/27/12)   ADJUSTED
 DK3427* NAD 83(PA11) EPOCH   -  2010.00
 DK3427* LMSL    ORTHO HEIGHT -     1.461 (meters)        4.79  (feet) ADJUSTED
```

```
DK3427  _____________________________________________________________________
DK3427  GEOID HEIGHT    -         15.825 (meters)                     GEOID12B
DK3427  NAD 83(PA11) X  - -5,465,623.107 (meters)                     COMP
DK3427  NAD 83(PA11) Y  - -2,380,288.382 (meters)                     COMP
DK3427  NAD 83(PA11) Z  -  2,260,006.595 (meters)                     COMP
DK3427  LAPLACE CORR    -         -4.68  (seconds)                    DEFLEC12B
DK3427  VERT ORDER      -  SECOND    CLASS I
DK3427
DK3427  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DK3427  Standards:
DK3427         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DK3427            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DK3427  ---------------------------------------------------------------------
DK3427  NETWORK    1.46   1.39           0.53   0.65   0.71     -0.01813230
DK3427  ---------------------------------------------------------------------
DK3427  Click here for local accuracies and other accuracy information.
DK3427
DK3427
DK3427.The horizontal coordinates were established by GPS observations
DK3427.and adjusted by the National Geodetic Survey in June 2012.
DK3427
DK3427.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
DK3427.been affixed to the stable Pacific tectonic plate.
DK3427
DK3427.The horizontal coordinates are valid at the epoch date displayed above
DK3427.which is a decimal equivalence of Year/Month/Day.
DK3427
DK3427.The orthometric height was determined by differential leveling
DK3427.and adjusted by the National Geodetic Survey in June 2020
DK3427.holding the tidal station 161 5680 C TIDAL (DK3427) to the 1983/2001
DK3427.tidal station epoch value 1.461 meters.
DK3427
DK3427.Significant digits in the geoid height do not necessarily reflect accuracy.
DK3427.GEOID12B height accuracy estimate available here.
DK3427
DK3427.This bench mark was chosen by the National Geodetic Survey (NGS) to
DK3427.serve as the datum origin point for the island of Maui leveling done
DK3427.between October 2017 and January 2019. The height of this point was
DK3427.adopted by NGS to be exactly 1.461 meters which is identical to the
DK3427.LMSL height of this benchmark for the National Tidal Datum 1983-2001 as
DK3427.determined by the Center for Operational Oceanographics Products and
DK3427.Services (CO-OPS) in December 2017.
DK3427
DK3427.Information on the Tidal Bench Mark designated as VM 1485 and its datum origin
DK3427.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
DK3427
DK3427.Click photographs - Photos may exist for this station.
```

Two NGS projects were adjusted and tied to the Datum Origin Point of DK3427: 00000939/3 and 00000939/4. An example control point that was in project 00000939/3 is DR4441. Below is a partial datasheet for DR4441 showing the pertinent new paragaphs highlighted in green for this project.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  8, 2020
 DR4441 ***********************************************************************
 DR4441  DESIGNATION -  SOH 002
 DR4441  PID         -  DR4441
 DR4441  STATE/COUNTY-  HI/MAUI
 DR4441  COUNTRY     -  US
 DR4441  USGS QUAD   -  KAHAKULOA (2017)
 DR4441
 DR4441                        *CURRENT SURVEY CONTROL
 DR4441  _____________________________________________________________________
 DR4441* NAD 83(1986) POSITION- 21 00 33.33   (N) 156 34 04.36   (W)    HD_HELD1
 DR4441* LMSL    ORTHO HEIGHT -    15.227 (meters)       49.96  (feet) ADJUSTED
 DR4441  _____________________________________________________________________
 DR4441  GEOID HEIGHT    -         15.166 (meters)                     GEOID12B
 DR4441  VERT ORDER      -  SECOND    CLASS I
 DR4441
```

```
 DR4441.The horizontal coordinates were determined by differentially corrected
 DR4441.hand held GPS observations or other comparable positioning techniques
 DR4441.and have an estimated accuracy of +/- 3 meters.
 DR4441.
 DR4441.The orthometric height was determined by differential leveling
 DR4441.and adjusted by the National Geodetic Survey in June 2020
 DR4441.holding the tidal station 161 5680 C TIDAL to the 1983/2001
 DR4441.tidal station epoch value 1.461 meters.
 DR4441
 DR4441.Significant digits in the geoid height do not necessarily reflect accuracy.
 DR4441.GEOID12B height accuracy estimate available here.
 DR4441
 DR4441.Click photographs - Photos may exist for this station.
```

An example control pont that was in project 00000939/4 is TU0176. Below is a partial datasheet for TU0176 showing the pertinent new paragaphs highlighted in green for this project.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  8, 2020
 TU0176 ***********************************************************************
 TU0176  TIDAL BM    -  This is a Tidal Bench Mark.
 TU0176  DESIGNATION -  161 5680 TIDAL 2
 TU0176  PID         -  TU0176
 TU0176  STATE/COUNTY-  HI/MAUI
 TU0176  COUNTRY     -  US
 TU0176  USGS QUAD   -  WAILUKU (2017)
 TU0176
 TU0176                        *CURRENT SURVEY CONTROL
 TU0176  ______________________________________________________________________
 TU0176* NAD 83(1986) POSITION- 20 53 35.     (N) 156 27 59.     (W)   SCALED
 TU0176* LMSL    ORTHO HEIGHT -     2.397 (meters)        7.86  (feet) ADJUSTED
 TU0176  ______________________________________________________________________
 TU0176  GEOID HEIGHT    -         15.792 (meters)                     GEOID12B
 TU0176  VERT ORDER      -  SECOND    CLASS I
 TU0176
 TU0176.The horizontal coordinates were scaled from a map and have
 TU0176.an estimated accuracy of +/- 6 seconds.
 TU0176.
 TU0176.The orthometric height was determined by differential leveling
 TU0176.and adjusted by the National Geodetic Survey in July 2020
 TU0176.holding the tidal station 161 5680 C TIDAL to the 1983/2001
 TU0176.tidal station epoch value 1.461 meters.
 TU0176
 TU0176.Significant digits in the geoid height do not necessarily reflect accuracy.
 TU0176.GEOID12B height accuracy estimate available here.
 TU0176
 TU0176.This Tidal Bench Mark is designated as VM 51
 TU0176.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
 TU0176
 TU0176.Click photographs - Photos may exist for this station.
```

NGS has added a new Datum Origin Point for Lana'i, HI. It's PID is DL6323. Below is a partial datasheet for DL6323 showing the pertinent new paragraphs are highlighted in green.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  8, 2020
 DL6323 ***********************************************************************
 DL6323  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 DL6323  TIDAL BM    -  This is a Tidal Bench Mark.
 DL6323  DESIGNATION -  161 4465 TIDAL 2
 DL6323  PID         -  DL6323
 DL6323  STATE/COUNTY-  HI/MAUI
 DL6323  COUNTRY     -  US
 DL6323  USGS QUAD   -  LANAI SOUTH OE W (2017)
 DL6323
 DL6323                        *CURRENT SURVEY CONTROL
 DL6323  ______________________________________________________________________
 DL6323* NAD 83(PA11) POSITION- 20 47 13.18914(N) 156 59 26.99384(W)   ADJUSTED
 DL6323* NAD 83(PA11) ELLIP HT-    19.557 (meters)        (06/27/12)   ADJUSTED
 DL6323* NAD 83(PA11) EPOCH   -  2010.00
```

```
DL6323* LMSL    ORTHO HEIGHT -     3.478 (meters)       11.41  (feet) ADJUSTED
DL6323  ____________________________________________________________________
DL6323  GEOID HEIGHT    -         15.449 (meters)                     GEOID12B
DL6323  NAD 83(PA11) X  - -5,490,892.968 (meters)                     COMP
DL6323  NAD 83(PA11) Y  - -2,331,782.811 (meters)                     COMP
DL6323  NAD 83(PA11) Z  -  2,249,369.892 (meters)                     COMP
DL6323  LAPLACE CORR    -         10.07  (seconds)                    DEFLEC12B
DL6323  VERT ORDER      -  SECOND    CLASS I
DL6323
DL6323  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL6323  Standards:
DL6323         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
DL6323            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DL6323  ------------------------------------------------------------------
DL6323  NETWORK    0.73   2.06           0.21   0.35   1.05     -0.18726450
DL6323  ------------------------------------------------------------------
DL6323  Click here for local accuracies and other accuracy information.
DL6323
DL6323
DL6323.The horizontal coordinates were established by GPS observations
DL6323.and adjusted by the National Geodetic Survey in June 2012.
DL6323
DL6323.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
DL6323.been affixed to the stable Pacific tectonic plate.
DL6323
DL6323.The horizontal coordinates are valid at the epoch date displayed above
DL6323.which is a decimal equivalence of Year/Month/Day.
DL6323
DL6323.The orthometric height was determined by differential leveling
DL6323.and adjusted by the National Geodetic Survey in August 2020
DL6323.holding the tidal station 161 4465 TIDAL 2 (DL6323) to the 1983/2001
DL6323.tidal station epoch value 3.478 meters.
DL6323
DL6323.Significant digits in the geoid height do not necessarily reflect accuracy.
DL6323.GEOID12B height accuracy estimate available here.
DL6323
DL6323.This bench mark was chosen by the National Geodetic Survey (NGS) to
DL6323.serve as the datum origin point for the island of Lanai leveling done
DL6323.between September 2017 and October 2017. The height of this point was
DL6323.adopted by NGS to be exactly 3.478 meters which is identical to the
DL6323.LMSL height of this benchmark for the National Tidal Datum 1983-2001 as
DL6323.determined by the Center for Operational Oceanographics Products and
DL6323.Services (Co-OPS) in June 2018.
DL6323
DL6323.Information on the Tidal Bench Mark designated as VM 22588 and its datum origin
DL6323.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
DL6323
DL6323.Click photographs - Photos may exist for this station.
```

An NGS project that was adjusted and tied to the Datum Origin Point of DL6323 is 00000939/5. An example control point that was in project 00000939/5 is DR4422. Below is a partial datasheet for DR4422 showing the pertinent new paragaphs highlighted in green for this project.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  8, 2020
 DR4422 ***********************************************************************
 DR4422  DESIGNATION -  ATA 1 14
 DR4422  PID         -  DR4422
 DR4422  STATE/COUNTY-  HI/MAUI
 DR4422  COUNTRY     -  US
 DR4422  USGS QUAD   -  LANAI SOUTH (2017)
 DR4422
 DR4422                        *CURRENT SURVEY CONTROL
 DR4422  ____________________________________________________________________
 DR4422* NAD 83(1986) POSITION- 20 47 28.32   (N) 156 54 23.18   (W)   HD_HELD1
 DR4422* LMSL    ORTHO HEIGHT -   348.901 (meters)     1144.69  (feet) ADJUSTED
 DR4422  ____________________________________________________________________
 DR4422  GEOID HEIGHT    -         16.180 (meters)                     GEOID12B
 DR4422  VERT ORDER      -  SECOND    CLASS I
 DR4422
```

```
DR4422.The horizontal coordinates were determined by differentially corrected
DR4422.hand held GPS observations or other comparable positioning techniques
DR4422.and have an estimated accuracy of +/- 3 meters.
DR4422.
DR4422.The orthometric height was determined by differential leveling
DR4422.and adjusted by the National Geodetic Survey in August 2020
DR4422.holding the tidal station 161 4465 TIDAL 2 to the 1983/2001
DR4422.tidal station epoch value 3.478 meters.
DR4422
DR4422.Significant digits in the geoid height do not necessarily reflect accuracy.
DR4422.GEOID12B height accuracy estimate available here.
DR4422
DR4422.Click photographs - Photos may exist for this station.
```

Also in this release, the datasheets in the state-wide monthly archives (ZIP files) available at ftp://ftp.ngs.noaa.gov/pub/DS_ARCHIVE/DataSheets/ will no longer concatenate the nonpub report (with reason codes for why some marks are unpublishable) to the end of the publishable datasheets. Instead, the non pub report will be added as a separate file in the ZIP files. For example, in the ZIP file for the state of FM (Federated States of Micronesia), you would no longer see the text in yellow after the last datasheet (with AA4455).

```
...

 AA4455                          STATION DESCRIPTION
 AA4455
 AA4455'DESCRIBED BY NATIONAL OCEAN SERVICE 1993 (JGF)
 AA4455'THE STATION IS LOCATED ON YAP AIRPORT ON THE ISLAND OF YAP, YAP STATE,
 AA4455'FEDERATED STATES OF MICRONESIA. TO REACH THE STATION FROM THE TERMINAL
 AA4455'BUILDING OF THE AIRPORT, PROCEED ON THE JET PAD THROUGH THE GATE TO
 AA4455'THE LEFT SIDE OF THE TERMINAL. THE STATION IS LOCATED ON THE HIGH
 AA4455'PORTION OF GROUND TO THE LEFT SIDE OF THE TAXIWAY JUST BEFORE YOU
 AA4455'REACH THE RUNWAY, ABOUT 300 FT (91.4 M) FROM THE TERMINAL BUILDING.
 AA4455'THE STATION IS ON THE HIGHEST PORTION OF LAND THAT COMES TO A POINT AT
 AA4455'THE JUNCTION OF THE RUNWAY AND TAXIWAY. THE STATION IS A STANDARD LAND
 AA4455'MANAGEMENT DISK STAMPED -MN-3-.
 AA4455
 AA4455                          STATION RECOVERY (2011)
 AA4455
 AA4455'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (AKP)
 AA4455'RECOVERED IN GOOD CONDITION.

 *** retrieval complete.

        Retrieval Date = SEPTEMBER 8, 2020        Version = 8.12.5.10
-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
```

```
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)       -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)      -
-       O    = Horizontal Order                                             -
-       o    = Vertical Order                                               -
-       H    = Horizontal Nonpub Code                                       -
-       v    = Vertical Nonpub Code                                         -
-                                                                           -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                          -
-       -------- --------------------------------                          -
-       B        Station is a RBN antenna                                   -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       I        No NAD83 coordinates available, only IGS08 coordinates     -
-       L        CORS L1 Phase Center is not publishable                    -
-       N        No geodetic control                                        -
-       O        Outside NGS publication area                               -
-       P        Purpose of position is not for network control             -
-       R        Restricted position                                        -
-       T        Station is a temporary point/bench mark                    -
-       V        Station is a VOR antenna                                   -
-       W        Weakly determined position                                 -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
                                                                           -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                            -
-       -------- ------------------------------                            -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       F        Bench mark not yet adjusted                                -
-       N        No geodetic control                                        -
-       L        CORS L1 Phase Center is not publishable                    -
-       O        Outside NGS publication area                               -
-       R        Restricted elevation                                       -
-       S        Mark is in a subsidence area                               -
-       T        Station is a temporary point/bench mark                    -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
-       Z        Presumed destroyed                                         -
-                                                                           -
-                                                                           -
-   NOTE - Stations found in this listing may still have a valid            -
-          datasheet produced by use of other publishable values.           -
-          For example, an ADJUSTED height may be non-publishable           -
-          but a good GPS height might be found on the datasheet.           -
-                                                                           -
-          If a mark/control point is in a subsidence area, you can request -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section  -
-          of its datasheet by checking the 'Include suspect heights in     -
-          subsidence area' checkbox on the datasheet retrieval pages.      -
-                                                                           -
-------------------------------------------------------------------------------
 Pid    Name                          Lat        Lon        Elev      O o Hv
 ------ ----------------------------- ---------- ---------- --------- - - --
>TW0144 A 1                          09 30 51. /221 52 21.               DZ
```

```
>AE4340 AIRPORT BEACON                 05 21 13. /197 02 31.                NN
>AE4359 AIRPORT BEACON                 06 58 57. /201 47 41.                NN
>AE4366 AIRPORT BEACON                 07 27 31. /208 09 24.                NN
>TW0145 B 1                            09 30 46. /221 53 03.                DZ
>TW0146 C 1                            09 30 30. /221 53 20.                DZ
>TW0147 D 1                            09 30 14. /221 53 25.                DZ
>TW0148 E 1                            09 30 00. /221 53 51.                DZ
>TW0149 F 1                            09 29 48. /221 54 24.                DZ
>TW0150 G 1                            09 29 41. /221 54 55.                DZ
>TW0151 H 1                            09 29 21. /221 54 47.                DZ
>TW0153 ORC                            09 29 07. /221 54 55.                DZ
>AE4356 PNI A                          06 59 12. /201 47 48.                NN
>AE4357 PNI B                          06 59 12. /201 46 48.                NN
>AE4358 PNI C                          06 59 09. /201 47 00.                NN
>AE4360 SOKEHS ROCK LIGHT              06 58 46. /201 48 26.                NN
>AO5054 TBM PIN                        09 29 21. /221 54 47.                TT
>TW0139 TIDAL 2                        09 30 53. /221 51 56.                DZ
>TW0140 TIDAL 3                        09 30 53. /221 51 59.                DZ
>TW0141 TIDAL 4                        09 30 59. /221 52 05.                DZ
>TW0142 TIDAL 5                        09 31 00. /221 52 04.                DZ
>TW0143 TIDAL 6                        09 30 59. /221 52 06.                DZ
>AA4423 TKK A                          07 27 23. /208 09 47.                XX
>AE4367 TKK A                          07 27 28. /208 09 38.                NN
>AA4424 TKK B                          07 28 02. /208 09 02.                XX
>AE4368 TKK B                          07 28 07. /208 08 53.                NN
>AE4369 TKK C                          07 27 59. /208 09 02.                NN
>AA4440 TTK B                          05 21 15. /197 02 39.                XX
>AE4370 TTK B RESET                    05 21 20. /197 02 30.                NN
>TW0152 TTS 3                          09 29 07. /221 54 58.                DZ
```

Version 8.12.5.9 updated on 07/07/2020

NGS has updated American Samoa (AS) datasheets (post the 2009 earthquake). Projects that include these updates are GPS3350, GPS3350/B1, GPS3350/B2, GPS3350/B3.

Below are partial datasheets of several marks in AS showing the pertinent data highlighted in green.

```
1        National Geodetic Survey,   Retrieval Date = JULY 7, 2020
 AA3710 ***********************************************************************
 AA3710  DESIGNATION -  FITIUTA ET
 AA3710  PID         -  AA3710
 AA3710  STATE/COUNTY-  AS/MANU A (DISTRICT)
 AA3710  COUNTRY     -  US
 AA3710  USGS QUAD   -
 AA3710
 AA3710                        *CURRENT SURVEY CONTROL
 AA3710  ______________________________________________________________________
 AA3710* NAD 83(PA11) POSITION- 14 12 42.39024(S) 169 25 38.16768(W)   ADJUSTED
 AA3710* NAD 83(PA11) ELLIP HT-    38.308 (meters)        (05/15/19)   ADJUSTED
 AA3710* NAD 83(PA11) EPOCH   -  2010.00
 AA3710* LMSL    ORTHO HEIGHT -     8.4   (meters)       28.    (feet) GPS OBS
 AA3710  ______________________________________________________________________
 AA3710  LMSL orthometric height was determined with geoid model       USGG2012
 AA3710  GEOID HEIGHT    -         28.840 (meters)                     USGG2012
 AA3710  GEOID HEIGHT    -         29.790 (meters)                     GEOID12B
 AA3710  NAD 83(PA11) X  - -6,079,227.677 (meters)                     COMP
 AA3710  NAD 83(PA11) Y  - -1,134,702.181 (meters)                     COMP
```

```
AA3710  NAD 83(PA11) Z   - -1,555,715.559 (meters)                     COMP
AA3710  LAPLACE CORR     -          6.50  (seconds)                    DEFLEC12B
AA3710
AA3710  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AA3710  Standards:
AA3710         FGDC (95% conf, cm)      Standard deviation (cm)      CorrNE
AA3710            Horiz  Ellip           SD_N   SD_E   SD_h       (unitless)
AA3710  ------------------------------------------------------------------------
AA3710  NETWORK     1.72   4.43           0.70   0.71   2.26       0.08566907
AA3710  ------------------------------------------------------------------------
AA3710  Click here for local accuracies and other accuracy information.
AA3710
AA3710
AA3710.The horizontal coordinates were established by GPS observations
AA3710.and adjusted by the WOOLPERT CONSULTANTS in May 2019.
AA3710
AA3710.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
AA3710.been affixed to the stable Pacific tectonic plate.
AA3710
AA3710.The horizontal coordinates are valid at the epoch date displayed above
AA3710.which is a decimal equivalence of Year/Month/Day.
AA3710
AA3710.The current NAD 83 position and ellipsoid height are consistent
AA3710.with AMERICAN SAMOA CORS ASPA coordinates revised in February 2013
AA3710.to account for displacement due to the September 29, 2009 Samoa
AA3710.Island earthquake.
AA3710.The PID for the ASPA CORS ARP is AJ5871.
AA3710.The PID for the ASPA L1 Phase Center is DK7460.
AA3710
AA3710 ** The Pago Pago tide station is not formally a part of the current
AA3710 ** national tidal datum epoch (NTDE. A Station Datum (SD) has been
AA3710 ** determined by the NOS Center for Operational Oceanographic Products
AA3710 ** and Services (CO-OPS), and published for the National Water Levels
AA3710 ** Observation Network (NWLON) bench mark number 177 0000 W (4.345m meters
AA3710 ** or 14.255 ft), located in Pago Pago. Surveys requiring vertical control
AA3710 ** must incorporate bench marks around the tide gauge, preferentially
AA3710 ** 177 0000 W.
AA3710 **
AA3710 ** The heights of stations in this area may have changed
AA3710 ** by more than 10 cm due to earthquakes.  NGS strongly warns
AA3710 ** against the use of such suspect heights as control.
AA3710
AA3710.The orthometric height was determined by GPS observations and a
AA3710.high-resolution geoid model.
AA3710
AA3710.Significant digits in the geoid height do not necessarily reflect accuracy.
AA3710.GEOID12B height accuracy estimate available here.
AA3710
AA3710.Click photographs - Photos may exist for this station.
AA3710
AA3710.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA3710
AA3710.The Laplace correction was computed from DEFLEC12B derived deflections.
AA3710
AA3710.The ellipsoidal height was determined by GPS observations
AA3710.and is referenced to NAD 83.
AA3710
AA3710. The following values were computed from the NAD 83(PA11) position.
AA3710
AA3710;                    North         East     Units Scale Factor Converg.
AA3710;UTM  02      - 8,428,280.300   669,702.651   MT  0.99995623   +0 23 10.4
AA3710
AA3710!             -  Elev Factor  x  Scale Factor =   Combined Factor
AA3710!UTM  02      -   0.99999398  x   0.99995623  =   0.99995021
AA3710
AA3710_U.S. NATIONAL GRID SPATIAL ADDRESS: 2LPK6970228280(NAD 83)
AA3710
AA3710|-----------------------------------------------------------------------|
AA3710| PID    Reference Object                    Distance      Geod. Az   |
AA3710|                                                          dddmmss.s  |
AA3710| AA4463 TAU A                             229.274 METERS 15708      |
```

```
 AA3710|----------------------------------------------------------------------|
 AA3710
 AA3710                          SUPERSEDED SURVEY CONTROL
 AA3710
 AA3710  NAD 83(PA11)-  14 12 42.38811(S)    169 25 38.16511(W) AD(2010.00) 0
 AA3710  ELLIP H (06/13/13)   38.187  (m)                        GP(2010.00)
 AA3710  NAD 83(PA11)-  14 12 42.39098(S)    169 25 38.16787(W) AD(2010.00) 0
 AA3710  ELLIP H (06/27/12)   38.239  (m)                        GP(2010.00)
 AA3710  NAD 83(2002)-  14 12 42.39025(S)    169 25 38.16843(W) AD(2002.00) A
 AA3710  ELLIP H (02/05/03)   38.283  (m)                        GP(2002.00) 3 1
 AA3710  NAD 83(1993)-  14 12 42.38125(S)    169 25 38.16655(W) AD(1993.62) 1
 AA3710  ELLIP H (11/30/94)   38.722  (m)                        GP(1993.62) 5 1
 AA3710  ASD 62       -  14 13 00.72214(S)    169 25 33.72683(W) AD(       ) 3
 AA3710  ASVD02  (02/05/03)    8.3    (m)  UNKNOWN model used   GPS OBS
 AA3710  LMSL    (04/22/99)    8.2    (m)           27.     (f) VERT ANG
 AA3710  LMSL    (07/19/86)    8.2    (m)           27.     (f) VERT ANG
 AA3710
 AA3710.Superseded values are not recommended for survey control.
 AA3710

. . .

1        National Geodetic Survey,   Retrieval Date = JULY 7, 2020
 DR4147 ***********************************************************************
 DR4147  DESIGNATION -  OFU A RESET
 DR4147  PID         -  DR4147
 DR4147  STATE/COUNTY-  AS/MANU A (DISTRICT)
 DR4147  COUNTRY     -  US
 DR4147  USGS QUAD   -
 DR4147
 DR4147                        *CURRENT SURVEY CONTROL
 DR4147  ______________________________________________________________________
 DR4147* NAD 83(PA11) POSITION- 14 11 04.44486(S) 169 40 01.48879(W)   ADJUSTED
 DR4147* NAD 83(PA11) ELLIP HT-    34.907 (meters)        (05/15/19)   ADJUSTED
 DR4147* NAD 83(PA11) EPOCH    -  2010.00
 DR4147* LMSL    ORTHO HEIGHT -     3.6   (meters)       12.    (feet) GPS OBS
 DR4147  ______________________________________________________________________
 DR4147  LMSL orthometric height was determined with geoid model       USGG2012
 DR4147  GEOID HEIGHT    -         30.216 (meters)                     USGG2012
 DR4147  GEOID HEIGHT    -         31.116 (meters)                     GEOID12B
 DR4147  NAD 83(PA11) X  - -6,084,646.830 (meters)                     COMP
 DR4147  NAD 83(PA11) Y  - -1,109,379.559 (meters)                     COMP
 DR4147  NAD 83(PA11) Z  - -1,552,796.442 (meters)                     COMP
 DR4147  LAPLACE CORR    -         -0.32  (seconds)                    DEFLEC12B
 DR4147
 DR4147  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DR4147  Standards:
 DR4147         FGDC (95% conf, cm)      Standard deviation (cm)      CorrNE
 DR4147            Horiz  Ellip           SD_N   SD_E   SD_h       (unitless)
 DR4147  ------------------------------------------------------------------
 DR4147  NETWORK    1.14   2.90           0.48   0.45   1.48       0.02984445
 DR4147  ------------------------------------------------------------------
 DR4147  Click here for local accuracies and other accuracy information.
 DR4147
 DR4147
 DR4147.The horizontal coordinates were established by GPS observations
 DR4147.and adjusted by the WOOLPERT CONSULTANTS in May 2019.
 DR4147
 DR4147.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
 DR4147.been affixed to the stable Pacific tectonic plate.
 DR4147
 DR4147.The horizontal coordinates are valid at the epoch date displayed above
 DR4147.which is a decimal equivalence of Year/Month/Day.
 DR4147
 DR4147.The current NAD 83 position and ellipsoid height are consistent
 DR4147.with AMERICAN SAMOA CORS ASPA coordinates revised in February 2013
 DR4147.to account for displacement due to the September 29, 2009 Samoa
 DR4147.Island earthquake.
 DR4147.The PID for the ASPA CORS ARP is AJ5871.
 DR4147.The PID for the ASPA L1 Phase Center is DK7460.
 DR4147
```

```
DR4147 ** The Pago Pago tide station is not formally a part of the current
DR4147 ** national tidal datum epoch (NTDE. A Station Datum (SD) has been
DR4147 ** determined by the NOS Center for Operational Oceanographic Products
DR4147 ** and Services (CO-OPS), and published for the National Water Levels
DR4147 ** Observation Network (NWLON) bench mark number 177 0000 W (4.345m meters
DR4147 ** or 14.255 ft), located in Pago Pago. Surveys requiring vertical control
DR4147 ** must incorporate bench marks around the tide gauge, preferentially
DR4147 ** 177 0000 W.
DR4147 **
DR4147 ** The heights of stations in this area may have changed
DR4147 ** by more than 10 cm due to earthquakes.  NGS strongly warns
DR4147 ** against the use of such suspect heights as control.
DR4147
DR4147.The orthometric height was determined by GPS observations and a
DR4147.high-resolution geoid model.
DR4147
DR4147.Significant digits in the geoid height do not necessarily reflect accuracy.
DR4147.GEOID12B height accuracy estimate available here.
DR4147
DR4147.Click photographs - Photos may exist for this station.
DR4147
DR4147.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DR4147
DR4147.The Laplace correction was computed from DEFLEC12B derived deflections.
DR4147
DR4147.The ellipsoidal height was determined by GPS observations
DR4147.and is referenced to NAD 83.
DR4147
DR4147. The following values were computed from the NAD 83(PA11) position.
DR4147
DR4147;                    North         East     Units Scale Factor Converg.
DR4147;UTM  02      - 8,431,451.185   643,838.914   MT  0.99985591   +0 19 36.1
DR4147
DR4147!             -  Elev Factor  x  Scale Factor =   Combined Factor
DR4147!UTM  02      -   0.99999451  x   0.99985591  =   0.99985042
DR4147
DR4147_U.S. NATIONAL GRID SPATIAL ADDRESS: 2LPK4383831451(NAD 83)
DR4147
DR4147                           SUPERSEDED SURVEY CONTROL
DR4147
DR4147.No superseded survey control is available for this

. . .

1        National Geodetic Survey,   Retrieval Date = JULY 7, 2020
 DE8788 ***********************************************************************
 DE8788  TIDAL BM    -  This is a Tidal Bench Mark.
 DE8788  DESIGNATION -  177 0000 U TIDAL
 DE8788  PID         -  DE8788
 DE8788  STATE/COUNTY-  AS/EASTERN (DISTRICT)
 DE8788  COUNTRY     -  US
 DE8788  USGS QUAD   -
 DE8788
 DE8788                        *CURRENT SURVEY CONTROL
 DE8788 ______________________________________________________________________
 DE8788* NAD 83(PA11) POSITION- 14 16 35.77559(S) 170 41 29.61050(W)   ADJUSTED
 DE8788* NAD 83(PA11) ELLIP HT-    35.085 (meters)        (05/15/19)   ADJUSTED
 DE8788* NAD 83(PA11) EPOCH    -  2010.00
 DE8788* LMSL    ORTHO HEIGHT -     1.5   (meters)        5.    (feet) GPS OBS
 DE8788 ______________________________________________________________________
 DE8788  LMSL orthometric height was determined with geoid model       USGG2012
 DE8788  GEOID HEIGHT    -         32.551 (meters)                     USGG2012
 DE8788  GEOID HEIGHT    -         33.443 (meters)                     GEOID12B
 DE8788  NAD 83(PA11) X  - -6,101,039.289 (meters)                     COMP
 DE8788  NAD 83(PA11) Y  - -1,000,006.507 (meters)                     COMP
 DE8788  NAD 83(PA11) Z  - -1,562,667.093 (meters)                     COMP
 DE8788  LAPLACE CORR    -          0.02  (seconds)                    DEFLEC12B
 DE8788
 DE8788  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DE8788  Standards:
 DE8788         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
```

```
DE8788            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
DE8788  ------------------------------------------------------------------
DE8788  NETWORK    1.10   3.27           0.43   0.47   1.67      0.07991788
DE8788  ------------------------------------------------------------------
DE8788  Click here for local accuracies and other accuracy information.
DE8788
DE8788
DE8788.The horizontal coordinates were established by GPS observations
DE8788.and adjusted by the WOOLPERT CONSULTANTS in May 2019.
DE8788
DE8788.NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has
DE8788.been affixed to the stable Pacific tectonic plate.
DE8788
DE8788.The horizontal coordinates are valid at the epoch date displayed above
DE8788.which is a decimal equivalence of Year/Month/Day.
DE8788
DE8788.The current NAD 83 position and ellipsoid height are consistent
DE8788.with AMERICAN SAMOA CORS ASPA coordinates revised in February 2013
DE8788.to account for displacement due to the September 29, 2009 Samoa
DE8788.Island earthquake.
DE8788.The PID for the ASPA CORS ARP is AJ5871.
DE8788.The PID for the ASPA L1 Phase Center is DK7460.
DE8788
DE8788 ** The Pago Pago tide station is not formally a part of the current
DE8788 ** national tidal datum epoch (NTDE. A Station Datum (SD) has been
DE8788 ** determined by the NOS Center for Operational Oceanographic Products
DE8788 ** and Services (CO-OPS), and published for the National Water Levels
DE8788 ** Observation Network (NWLON) bench mark number 177 0000 W (4.345m meters
DE8788 ** or 14.255 ft), located in Pago Pago. Surveys requiring vertical control
DE8788 ** must incorporate bench marks around the tide gauge, preferentially
DE8788 ** 177 0000 W.
DE8788 **
DE8788 ** The heights of stations in this area may have changed
DE8788 ** by more than 10 cm due to earthquakes.  NGS strongly warns
DE8788 ** against the use of such suspect heights as control.
DE8788
DE8788.The orthometric height was determined by GPS observations and a
DE8788.high-resolution geoid model.
DE8788
DE8788.Significant digits in the geoid height do not necessarily reflect accuracy.
DE8788.GEOID12B height accuracy estimate available here.
DE8788
DE8788.This Tidal Bench Mark is designated as VM 12714
DE8788.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
DE8788
DE8788.Click photographs - Photos may exist for this station.
DE8788
DE8788.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DE8788
DE8788.The Laplace correction was computed from DEFLEC12B derived deflections.
DE8788
DE8788.The ellipsoidal height was determined by GPS observations
DE8788.and is referenced to NAD 83.
DE8788
DE8788. The following values were computed from the NAD 83(PA11) position.
DE8788
DE8788;                    North         East     Units Scale Factor Converg.
DE8788;UTM  02      - 8,421,660.194   533,268.757   MT  0.99961369   +0 04 33.8
DE8788
DE8788!             -  Elev Factor  x  Scale Factor =   Combined Factor
DE8788!UTM  02      -   0.99999448  x   0.99961369  =   0.99960818
DE8788
DE8788_U.S. NATIONAL GRID SPATIAL ADDRESS: 2LNK3326821660(NAD 83)
DE8788
DE8788                           SUPERSEDED SURVEY CONTROL
DE8788
DE8788  ASVD02  (04/24/03)     1.662  (m)            5.45   (f) ADJUSTED    1 2
DE8788
DE8788.Superseded values are not recommended for survey control.

1        National Geodetic Survey,   Retrieval Date = JULY 7, 2020
```

```
AI9956 ***********************************************************************
AI9956  DESIGNATION -  VAITELE
AI9956  PID         -  AI9956
AI9956  STATE/COUNTY-  AS/EASTERN (DISTRICT)
AI9956  COUNTRY     -  US
AI9956  USGS QUAD   -
AI9956
AI9956                        *CURRENT SURVEY CONTROL
AI9956  ______________________________________________________________________
AI9956* NAD 83(2002) POSITION- 14 15 38.78336(S) 170 33 45.72154(W)   ADJUSTED
AI9956* NAD 83(2002) EPOCH   -  2002.00
AI9956* LMSL    ORTHO HEIGHT -          **(meters)           **(feet)
AI9956  ______________________________________________________________________
AI9956  GEOID HEIGHT    -         32.965 (meters)                     GEOID12B
AI9956  LAPLACE CORR    -          3.54  (seconds)                    DEFLEC12B
AI9956  HORZ ORDER      -  THIRD
AI9956  VERT ORDER      -  FIRST     CLASS II
AI9956
AI9956.The horizontal coordinates were established by classical geodetic methods
AI9956.and adjusted by the National Geodetic Survey in December 2003.
AI9956.
AI9956 ** The heights of stations in this area may have changed
AI9956 ** by more than 10 cm due to earthquakes.  NGS strongly warns
AI9956 ** against the use of such suspect heights as control.
AI9956
AI9956.The orthometric height was determined by differential leveling and
AI9956.adjusted by the NATIONAL GEODETIC SURVEY
AI9956.in April 2003.
AI9956
AI9956.No vertical observational check was made to the station.
AI9956
AI9956.Significant digits in the geoid height do not necessarily reflect accuracy.
AI9956.GEOID12B height accuracy estimate available here.
AI9956
AI9956.Click photographs - Photos may exist for this station.
AI9956
AI9956.The Laplace correction was computed from DEFLEC12B derived deflections.
AI9956
AI9956. The following values were computed from the NAD 83(2002) position.
AI9956
AI9956;                    North         East     Units Scale Factor Converg.
AI9956;UTM  02      - 8,423,388.822   547,170.989   MT  0.99962752   +0 06 27.8
AI9956
AI9956!             -  Elev Factor  x  Scale Factor =   Combined Factor
AI9956!UTM  02      -   0.99999426  x   0.99962752  =   0.99962178
AI9956
AI9956:                Primary Azimuth Mark                    Grid Az
AI9956:UTM  02      -  AUNUU ISLAND LIGHTHOUSE                 145 43 24.6
AI9956
AI9956_U.S. NATIONAL GRID SPATIAL ADDRESS: 2LNK4717023388(NAD 83)
AI9956
AI9956|----------------------------------------------------------------------|
AI9956| PID    Reference Object                     Distance      Geod. Az  |
AI9956|                                                           dddmmss.s |
AI9956| AJ2283 VAITELE RM 1                        31.372 METERS 06342     |
AI9956| AI9898 AUNUU ISLAND LIGHTHOUSE            APPROX. 2.6 KM 1454952.4 |
AI9956| AI9899 AUNUU IS END SUBMERGED CABLE       APPROX. 2.2 KM 1674338.2 |
AI9956| AJ2282 VAITELE RM 2                         9.383 METERS 20038     |
AI9956|----------------------------------------------------------------------|
AI9956
AI9956                          SUPERSEDED SURVEY CONTROL
AI9956
AI9956  NAD 83(1993)-  14 15 38.77411(S)    170 33 45.72045(W) AD(1993.62) 3
AI9956  ASD 62      -  14 15 56.59604(S)    170 33 41.34113(W) AD(       ) 3
AI9956  ASVD02  (04/24/03)    3.527  (m)           11.57   (f) ADJUSTED    1 2
AI9956  LMSL    (04/22/99)    3.3    (m)           11.     (f) VERT ANG
AI9956  LMSL    (07/19/86)    3.3    (m)           11.     (f) VERT ANG
AI9956
AI9956.Superseded values are not recommended for survey control.
```

Version 8.12.5.8 updated on 05/21/2020

NGS has added a new Datum Origin Point for Oahu, HI. It's PID is TU0291. Below is a partial datasheet for TU0291 showing the pertinent new paragraphs are highlighted in green.

```
1        National Geodetic Survey,   Retrieval Date = MAY 11, 2020
 TU0291 ***********************************************************************
 TU0291  DATUM ORIG  -  This is a Vertical Datum Origin Point.
 TU0291  TIDAL BM    -  This is a Tidal Bench Mark.
 TU0291  DESIGNATION -  161 2340 TIDAL 21
 TU0291  PID         -  TU0291
 TU0291  STATE/COUNTY-  HI/HONOLULU
 TU0291  COUNTRY     -  US
 TU0291  USGS QUAD   -  HONOLULU (2017)
 TU0291
 TU0291                        *CURRENT SURVEY CONTROL
 TU0291  ______________________________________________________________________
 TU0291* NAD 83(1986) POSITION- 21 18 13.92   (N) 157 51 49.14   (W)    HD_HELD1
 TU0291* LMSL    ORTHO HEIGHT -     2.042 (meters)        6.70  (feet) ADJUSTED
 TU0291  ______________________________________________________________________
 TU0291  GEOID HEIGHT    -         15.504 (meters)                     GEOID12B
 TU0291  DYNAMIC HEIGHT  -          2.038 (meters)        6.69  (feet) COMP
 TU0291  MODELED GRAVITY -    978,931.8   (mgal)                       NAVD 88
 TU0291
 TU0291  VERT ORDER      -  SECOND    CLASS I
 TU0291
 TU0291.The horizontal coordinates were determined by differentially corrected
 TU0291.hand held GPS observations or other comparable positioning techniques
 TU0291.and have an estimated accuracy of +/- 3 meters.
 TU0291.
 TU0291.The orthometric height was determined by differential leveling and
 TU0291.adjusted by the National Geodetic Survey in May 2019 holding
 TU0291.the tidal station 161 2340 C TIDAL 21 (TU0291) to the 1983/2001 tidal
 TU0291.station epoch value 2.042 meters.
 TU0291
 TU0291.Significant digits in the geoid height do not necessarily reflect accuracy.
 TU0291.GEOID12B height accuracy estimate available here.
 TU0291
 TU0291.This bench mark was chosen by the National Geodetic Survey (NGS) to
 TU0291.serve as the datum origin point for the island of Oahu leveling done
 TU0291.between February 2016 and March 2017. The height of this point was
 TU0291.adopted by NGS to be exactly 2.042 meters which is identical to the
 TU0291.LMSL height of this benchmark for the National Tidal Datum 1983-2001 as
 TU0291.determined by the Center for Operational Oceanographics Products and
 TU0291.Services (CO-OPS) in December 2017.
 TU0291
 TU0291.Information on the Tidal Bench Mark designated as VM 30 and its datum origin
 TU0291.point is located at CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
 TU0291
 TU0291.Click photographs - Photos may exist for this station.
 TU0291
```

Two NGS projects were adjusted and tied to the Datum Origin Point of TU0291: 00000939/1 and 00000939/2. An example control point that was in project 00000939/1 is DR2140. Below is a partial datasheet for DR2140 showing the pertinent new paragaphs highlighted in green for this project.

```
1        National Geodetic Survey,   Retrieval Date = MAY 11, 2020
 DR2140 ***********************************************************************
 DR2140  DESIGNATION -  SOH 71
 DR2140  PID         -  DR2140
 DR2140  STATE/COUNTY-  HI/HONOLULU
 DR2140  COUNTRY     -  US
 DR2140  USGS QUAD   -  HONOLULU (2017)
 DR2140
 DR2140                        *CURRENT SURVEY CONTROL
 DR2140  ______________________________________________________________________
 DR2140* NAD 83(1986) POSITION- 21 18 25.7    (N) 157 51 50.3    (W)    HD_HELD2
```

```
DR2140* LMSL    ORTHO HEIGHT -     1.601 (meters)        5.25  (feet) ADJUSTED
DR2140  ____________________________________________________________________
DR2140  GEOID HEIGHT    -         15.526 (meters)                     GEOID12B
DR2140  VERT ORDER      -  SECOND    CLASS I
DR2140
DR2140.The horizontal coordinates were established by autonomous hand held GPS
DR2140.observations and have an estimated accuracy of +/- 10 meters.
DR2140.
DR2140.The orthometric height was determined by differential leveling
DR2140.and adjusted by the National Geodetic Survey in June 2019
DR2140.holding the tidal station 161 2340 TIDAL 21 to the 1983/2001
DR2140.tidal station epoch value 2.042 meters.
DR2140
DR2140.Significant digits in the geoid height do not necessarily reflect accuracy.
DR2140.GEOID12B height accuracy estimate available here.
DR2140
DR2140.Click photographs - Photos may exist for this station.
```

An example control pont that was in project 00000939/2 is TU0341. Below is a partial datasheet for TU0341 showing the pertinent new paragaphs highlighted in green for this project.

```
1        National Geodetic Survey,   Retrieval Date = MAY 11, 2020
 TU0341 ***********************************************************************
 TU0341  DESIGNATION -  S 11
 TU0341  PID         -  TU0341
 TU0341  STATE/COUNTY-  HI/HONOLULU
 TU0341  COUNTRY     -  US
 TU0341  USGS QUAD   -  KOKO HEAD (2017)
 TU0341
 TU0341                        *CURRENT SURVEY CONTROL
 TU0341  ____________________________________________________________________
 TU0341* NAD 83(1986) POSITION- 21 18 10.     (N) 157 39 24.     (W)    SCALED
 TU0341* LMSL    ORTHO HEIGHT -    15.484 (meters)       50.80  (feet) ADJUSTED
 TU0341  ____________________________________________________________________
 TU0341  GEOID HEIGHT    -         15.280 (meters)                     GEOID12B
 TU0341  VERT ORDER      -  SECOND    CLASS I
 TU0341
 TU0341.The horizontal coordinates were scaled from a map and have
 TU0341.an estimated accuracy of +/- 6 seconds.
 TU0341.
 TU0341.The orthometric height was determined by differential leveling
 TU0341.and adjusted by the National Geodetic Survey in September 2019
 TU0341.holding the tidal station 161 2340 TIDAL 21 to the 1983/2001
 TU0341.tidal station epoch value 2.042 meters.
 TU0341
 TU0341.Significant digits in the geoid height do not necessarily reflect accuracy.
 TU0341.GEOID12B height accuracy estimate available here.
 TU0341
 TU0341.Click photographs - Photos may exist for this station.
```

Version 8.12.5.7 updated on 04/02/2020

There are three change to datasheets in this version.

For the first change, the message:

```
<PID>.WARNING-Repeat measurements at this control monument indicate possible
<PID>.vertical movement.
```

is no longer displayed on datasheets. Three marks that formerly displayed this message on their datasheets are:

```
LG0017
MA0834
```

RB0353

Below are partial datasheets showing what was removed (with the pertinent text highlighted in red):

1.2 The NGS Data Sheet

```
1.2.1.1.1 See file dsdata.pdf for more information about the datasheet.
PROGRAM = datasheet95, VERSION = 8.12.5.6
Starting Datasheet Retrieval...
1        National Geodetic Survey,   Retrieval Date = MARCH 26, 2020
 LG0017 ***********************************************************************
 LG0017  DESIGNATION -  N 12
 LG0017  PID         -  LG0017
 LG0017  STATE/COUNTY-  NE/OTOE
 LG0017  COUNTRY     -  US
 LG0017  USGS QUAD   -  SYRACUSE (2017)
 LG0017
 LG0017                        *CURRENT SURVEY CONTROL
 LG0017 ______________________________________________________________________
 LG0017* NAD 83(1986) POSITION- 40 39 24.18    (N) 096 11 15.48    (W)    HD_HELD1
 LG0017* NAVD 88 ORTHO HEIGHT -   318.703 (meters)     1045.61   (feet) ADJUSTED
 LG0017 ______________________________________________________________________
 LG0017  GEOID HEIGHT    -        -27.691 (meters)                      GEOID18
 LG0017  DYNAMIC HEIGHT  -        318.544 (meters)     1045.09   (feet) COMP
 LG0017  MODELED GRAVITY -    980,116.3   (mgal)                        NAVD 88
 LG0017
 LG0017  VERT ORDER      -  FIRST     CLASS II
 LG0017
 LG0017.The horizontal coordinates were determined by differentially corrected
 LG0017.hand held GPS observations or other comparable positioning techniques
 LG0017.and have an estimated accuracy of +/- 3 meters.
 LG0017.
 LG0017.The orthometric height was determined by differential leveling and
 LG0017.adjusted by the NATIONAL GEODETIC SURVEY
 LG0017.in June 1991.
 LG0017
 LG0017.WARNING-Repeat measurements at this control monument indicate possible
 LG0017.vertical movement.
 LG0017
 LG0017.Significant digits in the geoid height do not necessarily reflect accuracy.
 LG0017.GEOID18 height accuracy estimate available here.
 LG0017
 LG0017.Click photographs - Photos may exist for this station.
 LG0017

  . . .


1        National Geodetic Survey,   Retrieval Date = MARCH 26, 2020
 MA0834 ***********************************************************************
 MA0834  DESIGNATION -  1244
 MA0834  PID         -  MA0834
 MA0834  STATE/COUNTY-  PA/WARREN
 MA0834  COUNTRY     -  US
 MA0834  USGS QUAD   -  PITTSFIELD (2019)
 MA0834
 MA0834                        *CURRENT SURVEY CONTROL
 MA0834 ______________________________________________________________________
 MA0834* NAD 83(1986) POSITION- 41 50 00.2     (N) 079 23 02.1     (W)    HD_HELD2
 MA0834* NAVD 88 ORTHO HEIGHT -   378.990 (meters)     1243.40   (feet) ADJUSTED
 MA0834 ______________________________________________________________________
 MA0834  GEOID HEIGHT    -        -33.039 (meters)                      GEOID18
```

```
 MA0834  DYNAMIC HEIGHT  -        378.834 (meters)     1242.89  (feet) COMP
 MA0834  MODELED GRAVITY -    980,200.8   (mgal)                      NAVD 88
 MA0834
 MA0834  VERT ORDER      -  FIRST     CLASS II
 MA0834
 MA0834.The horizontal coordinates were established by autonomous hand held GPS
 MA0834.observations and have an estimated accuracy of +/- 10 meters.
 MA0834.
 MA0834.The orthometric height was determined by differential leveling and
 MA0834.adjusted by the NATIONAL GEODETIC SURVEY
 MA0834.in June 1991.
 MA0834
 MA0834.WARNING-Repeat measurements at this control monument indicate possible
 MA0834.vertical movement.
 MA0834
 MA0834.Significant digits in the geoid height do not necessarily reflect accuracy.
 MA0834.GEOID18 height accuracy estimate available here.
 MA0834
 MA0834.Click photographs - Photos may exist for this station.
 MA0834

. . .

1        National Geodetic Survey,   Retrieval Date = MARCH 26, 2020
 RB0353 ***********************************************************************
 RB0353  DESIGNATION -  299 A
 RB0353  PID         -  RB0353
 RB0353  STATE/COUNTY-  OR/UMATILLA
 RB0353  COUNTRY     -  US
 RB0353  USGS QUAD   -  MISSION (2017)
 RB0353
 RB0353                        *CURRENT SURVEY CONTROL
 RB0353 ______________________________________________________________________
 RB0353* NAD 83(1986) POSITION- 45 40 05.7    (N) 118 38 42.2    (W)    HD_HELD2
 RB0353* NAVD 88 ORTHO HEIGHT -   390.960 (meters)     1282.67  (feet) ADJUSTED
 RB0353  ______________________________________________________________________
 RB0353  GEOID HEIGHT    -        -20.499 (meters)                      GEOID18
 RB0353  DYNAMIC HEIGHT  -        390.914 (meters)     1282.52  (feet) COMP
 RB0353  MODELED GRAVITY -    980,489.5   (mgal)                      NAVD 88
 RB0353
 RB0353  VERT ORDER      -  FIRST     CLASS II
 RB0353
 RB0353.The horizontal coordinates were established by autonomous hand held GPS
 RB0353.observations and have an estimated accuracy of +/- 10 meters.
 RB0353.
 RB0353.The orthometric height was determined by differential leveling and
 RB0353.adjusted by the NATIONAL GEODETIC SURVEY
 RB0353.in June 1991.
 RB0353
 RB0353.WARNING-Repeat measurements at this control monument indicate possible
 RB0353.vertical movement.
 RB0353
 RB0353.Significant digits in the geoid height do not necessarily reflect accuracy.
 RB0353.GEOID18 height accuracy estimate available here.
 RB0353
 RB0353.Click photographs - Photos may exist for this station.
 RB0353

 . . .
```

For the second change to datasheets, paragraphs in the STATION DESCRIPTION are now separated by a blank line (highlighted in green) for better readability .

```
AK6304                          STATION DESCRIPTION
AK6304
AK6304'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 (DWC)
AK6304'LOCATED ON THE MERRITT ISLAND LAUNCH AREA, ON THE ROOF AND NORTH
AK6304'SIDE OF THE CIF ANTENNA BUILDING NO L 7 1557.  ONE BOLT OF 25
AK6304'BOLTS (1/2 INCH) IN THE CENTER OF A CONCRETE ANTENNA PAD, HAS A
AK6304'PUNCH HOLE THAT MARKS THE STATION.  THE PAD PROJECTS ABOUT 10
AK6304'INCHES ABOVE THE ROOF SURFACE.
AK6304'
AK6304'A TRAVERSE CONNECTION WAS MADE FROM TRIANGULATION STATION PETTEY
AK6304'AND THE DISTANCE IS 3.6306 METERS OR 11.91 FEET.
AK6304'
AK6304'TO REACH FROM THE JUNCTION OF THE NASA CAUSEWAY AND C
AK6304'AVE. S.E., GO NORTHEASTERLY FOR 1.3 MILES TO THE CIF ANTENNA
AK6304'BUILDING AND THE STATION AS DESCRIBED.
```

For the third change to datasheets, the monthly generated archived state-wide datasheets will now display the reason code report, which shows why some marks in a state might be horizontally or vertically unpublishable, immediately after the datasheets that are publishable for that state.

For example, when the monthly generated archived state-wide datasheets are extracted for the state of FM (Federated States of Micronesia), one would see the following reason code report appended to the end of the datasheets for FM:

```
-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- -----------------------------------                          -
-       B        Station is a RBN antenna                                     -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       I        No NAD83 coordinates available, only IGS08 coordinates       -
-       L        CORS L1 Phase Center is not publishable                      -
-       N        No geodetic control                                          -
-       O        Outside NGS publication area                                 -
-       P        Purpose of position is not for network control               -
-       R        Restricted position                                          -
-       T        Station is a temporary point/bench mark                      -
-       V        Station is a VOR antenna                                     -
```

```
-       W         Weakly determined position                                  -
-       X         Surface mark reported destroyed                             -
-       Y         Surface and underground mark reported destroyed             -
-                                                                             -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ------------------------------                               -
-       C         Not a publishable datum within the state                    -
-       D         No descriptive text available                               -
-       F         Bench mark not yet adjusted                                 -
-       N         No geodetic control                                         -
-       L         CORS L1 Phase Center is not publishable                     -
-       O         Outside NGS publication area                                -
-       R         Restricted elevation                                        -
-       S         Mark is in a subsidence area                                -
-       T         Station is a temporary point/bench mark                     -
-       X         Surface mark reported destroyed                             -
-       Y         Surface and underground mark reported destroyed             -
-       Z         Presumed destroyed                                          -
-                                                                             -
-                                                                             -
-   NOTE - Stations found in this listing may still have a valid              -
-          datasheet produced by use of other publishable values.             -
-          For example, an ADJUSTED height may be non-publishable             -
-          but a good GPS height might be found on the datasheet.             -
-                                                                             -
-          If a mark/control point is in a subsidence area, you can request   -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section    -
-          of its datasheet by checking the 'Include suspect heights in       -
-          subsidence area' checkbox on the datasheet retrieval pages.        -
-                                                                             -
-------------------------------------------------------------------------------
 Pid    Name                           Lat         Lon         Elev      O o Hv
 ------ ------------------------------ ----------- ----------- --------- - - --
>TW0144 A 1                            09 30 51. /221 52 21.                DZ
>AE4340 AIRPORT BEACON                 05 21 13. /197 02 31.                NN
>AE4359 AIRPORT BEACON                 06 58 57. /201 47 41.                NN
>AE4366 AIRPORT BEACON                 07 27 31. /208 09 24.                NN
>TW0145 B 1                            09 30 46. /221 53 03.                DZ
>TW0146 C 1                            09 30 30. /221 53 20.                DZ
>TW0147 D 1                            09 30 14. /221 53 25.                DZ
>TW0148 E 1                            09 30 00. /221 53 51.                DZ
>TW0149 F 1                            09 29 48. /221 54 24.                DZ
>TW0150 G 1                            09 29 41. /221 54 55.                DZ
>TW0151 H 1                            09 29 21. /221 54 47.                DZ
>TW0153 ORC                            09 29 07. /221 54 55.                DZ
>AE4356 PNI A                          06 59 12. /201 47 48.                NN
>AE4357 PNI B                          06 59 12. /201 46 48.                NN
>AE4358 PNI C                          06 59 09. /201 47 00.                NN
>AE4360 SOKEHS ROCK LIGHT              06 58 46. /201 48 26.                NN
>AO5054 TBM PIN                        09 29 21. /221 54 47.                TT
>TW0139 TIDAL 2                        09 30 53. /221 51 56.                DZ
>TW0140 TIDAL 3                        09 30 53. /221 51 59.                DZ
>TW0141 TIDAL 4                        09 30 59. /221 52 05.                DZ
>TW0142 TIDAL 5                        09 31 00. /221 52 04.                DZ
>TW0143 TIDAL 6                        09 30 59. /221 52 06.                DZ
>AA4423 TKK A                          07 27 23. /208 09 47.                XX
>AE4367 TKK A                          07 27 28. /208 09 38.                NN
>AA4424 TKK B                          07 28 02. /208 09 02.                XX
>AE4368 TKK B                          07 28 07. /208 08 53.                NN
>AE4369 TKK C                          07 27 59. /208 09 02.                NN
>AA4440 TTK B                          05 21 15. /197 02 39.                XX
>AE4370 TTK B RESET                    05 21 20. /197 02 30.                NN
>TW0152 TTS 3                          09 29 07. /221 54 58.                DZ
```

Please note, that each state at ftp://ftp.ngs.noaa.gov/pub/DS_ARCHIVE/DataSheets/ is on a monthly schedule to be re-generated from the NGS database. You can expect that within a month's time that the reason code report for each state will appear in the monthly archived state-wide datasheet ZIP files.

Version 8.12.5.6 updated on 02/19/2020

There is one change to datasheets in this version:

In this change request, a new Texas suspect area for datasheets was added:

$$N282900 \leq \text{latitude} \leq N303000 \text{ and } W0934000 \leq \text{longitude} \leq W0961500$$

Out of approximately 7500 control points in this suspect area, only 25 are considered to have valid heights. New leveling and/or GNSS data are required in order to densify the network. The NGS is not ready to categorize the orthometric heights on these suspect datasheets as "NOT PUB" as it did with control points in the subsidence areas in Alabama, Florida, Louisiana, and Mississippi. However, in order to designate orthometric heights in this Texas area as suspect, the following message is displayed beneath the "ORTHO HEIGHT −" line:

```
<PID>  **This station is in an area of suspected vertical motion (see below).
```

along with the paragraph:

```
 <PID> ** This station is in an area of suspected vertical motion.  Due to the
 <PID> ** variability of land subsidence, uplift, and crustal motion, NGS
 <PID> ** recommends that all published orthometric heights in such areas be
 <PID> ** validated before used as control. In addition, NGS does not
 <PID> ** recommend using the following types of orthometric heights as
 <PID> ** vertical control: scaled, VERTCON, or superseded. Click here to
 <PID> ** see the list of stations with valid orthometric heights in this area.
```

The link (*here*) in this paragraph will go to the *https://www.ngs.noaa.gov/datasheets/southeastTXValidHeights/index.html* page.

Example PIDs with these messages are: AW0590, BL2015, and BK1739.

AW0590's partial datasheet is shown below, with pertinent text highlighted in green:

```
1        National Geodetic Survey,   Retrieval Date = FEBRUARY  5, 2020
 AW0590 ***********************************************************************
 AW0590  FBN         -  This is a Federal Base Network Control Station.
 AW0590  TIDAL BM    -  This is a Tidal Bench Mark.
 AW0590  DESIGNATION -  E 168
 AW0590  PID         -  AW0590
 AW0590  STATE/COUNTY-  TX/GALVESTON
 AW0590  COUNTRY     -  US
 AW0590  USGS QUAD   -  GALVESTON (2019)
 AW0590
 AW0590                        *CURRENT SURVEY CONTROL
 AW0590  ______________________________________________________________________
 AW0590* NAD 83(2011) POSITION- 29 17 20.54501(N) 094 47 21.14978(W)   ADJUSTED
 AW0590* NAD 83(2011) ELLIP HT-   -22.204 (meters)        (06/27/12)   ADJUSTED
 AW0590* NAD 83(2011) EPOCH   -  2010.00
 AW0590* NAVD 88 ORTHO HEIGHT -     4.400 (meters)       14.44  (feet) ADJUSTED
 AW0590  **This station is in an area of suspected vertical motion (see below).
 AW0590  ______________________________________________________________________
 AW0590  GEOID HEIGHT    -        -26.607 (meters)                    GEOID18
 AW0590  NAD 83(2011) X  -   -464,807.750 (meters)                    COMP
```

```
AW0590  NAD 83(2011) Y  - -5,547,779.163 (meters)                     COMP
AW0590  NAD 83(2011) Z  -  3,101,870.964 (meters)                     COMP
AW0590  LAPLACE CORR    -          1.26  (seconds)                    DEFLEC18
AW0590  DYNAMIC HEIGHT  -          4.394 (meters)       14.42  (feet) COMP
AW0590  MODELED GRAVITY -    979,261.6   (mgal)                       NAVD 88
AW0590  OBS GRAVITY     -    979,258.8   (mgal)                       GRAV_OBS
AW0590
AW0590  VERT ORDER      -  FIRST     CLASS II
AW0590
AW0590  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AW0590  Standards:
AW0590         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AW0590            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AW0590  ------------------------------------------------------------------
AW0590  NETWORK    0.35   0.88           0.14   0.15   0.45      0.03950528
AW0590  ------------------------------------------------------------------
AW0590  Click here for local accuracies and other accuracy information.
AW0590
AW0590
AW0590.The horizontal coordinates were established by GPS observations
AW0590.and adjusted by the National Geodetic Survey in June 2012.
AW0590
AW0590.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AW0590.been affixed to the stable North American tectonic plate. See
AW0590.NA2011 for more information.
AW0590
AW0590.The horizontal coordinates are valid at the epoch date displayed above
AW0590.which is a decimal equivalence of Year/Month/Day.
AW0590
AW0590 ** This station is in an area of suspected vertical motion.  Due to the
AW0590 ** variability of land subsidence, uplift, and crustal motion, NGS
AW0590 ** recommends that all published orthometric heights in such areas be
AW0590 ** validated before used as control. In addition, NGS does not
AW0590 ** recommend using the following types of orthometric heights as
AW0590 ** vertical control: scaled, VERTCON, or superseded. Click here to
AW0590 ** see the list of stations with valid orthometric heights in this area.
AW0590
AW0590.The orthometric height was determined by differential leveling and
AW0590.adjusted by the NATIONAL GEODETIC SURVEY
AW0590.in March 1997.
AW0590
AW0590.Significant digits in the geoid height do not necessarily reflect accuracy.
AW0590.GEOID18 height accuracy estimate available here.
AW0590
AW0590.This Tidal Bench Mark is designated as VM 856
AW0590.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
AW0590
AW0590.Click photographs - Photos may exist for this station.
AW0590

. . .
```

Version 8.12.5.5 updated on 01/15/2020

There are 2 changes to datasheets in this version:

(1) NGS has updated the USGS quads in our database for CONUS, Alaska, Hawaii, and Puerto Rico. Example PIDs showing this update of the "*USGS QUAD -*" line on their respective datasheet is:

```
MY6006  USGS QUAD   -  BOSTON NORTH (2018)
UV8168  USGS QUAD   -  BAIRD INLET A-1 NE (2017)
AA3584  USGS QUAD   -  HANAPEPE (2017)
TV1295  USGS QUAD   -  CAMUY (2018)
```

Prior to this update, the "USGS QUAD -" line on their respective datasheet was:

```
MY6006  USGS QUAD   -
```

```
UV8168  USGS QUAD    -  BAIRD INLET A-1
AA3584  USGS QUAD    -  HANAPEPE (1996)
TV1295  USGS QUAD    -  CAMUY (1982)
```

(2) NGS has updated the text line for photographs/images on datasheets. An example PID showing this update is BH1212:

```
BH1212.Click photographs - Photos may exist for this station.
```

Prior to this, update the text line for photographs/images on its datasheet was:

```
BH1212.Click here to see if photographs exist for this station.
```

Version 8.12.5.4 updated on 09/10/2019

There are 8 changes to datasheets in this version:

(1) The datasheets were updated to use the new GEOID18/DEFLEC18 grids. These grids affect *only* CONUS, Puerto Rico (PR) and the US Virgin Islands (VQ). Example PIDs in these areas are: AB9517 (VQ), BZ0269 (TX), and TV1516 (PR). Partial datasheets are shown below with special emphasis on the highlighted green text.

```
1        National Geodetic Survey,   Retrieval Date = JULY 2, 2019
 AB9517 ***********************************************************************
 AB9517  DESIGNATION -  126+00
 AB9517  PID         -  AB9517
 AB9517  STATE/COUNTY-  VQ/ST CROIX
 AB9517  COUNTRY     -  US
 AB9517  USGS QUAD   -  CHRISTIANSTED (1958)
 AB9517
 AB9517                        *CURRENT SURVEY CONTROL
 AB9517  ______________________________________________________________________
 AB9517* NAD 83(2011) POSITION- 17 42 12.69099(N) 064 47 15.91942(W)   ADJUSTED
 AB9517* NAD 83(2011) ELLIP HT-   -35.703 (meters)        (06/27/12)   ADJUSTED
 AB9517* NAD 83(2011) EPOCH   -  2010.00
 AB9517* LMSL    ORTHO HEIGHT -     6.6   (meters)       22.    (feet) GPS OBS
 AB9517  ______________________________________________________________________
 AB9517  LMSL orthometric height was determined with geoid model       EGM96
 AB9517  GEOID HEIGHT    -        -45.347 (meters)                     EGM96
 AB9517  GEOID HEIGHT    -        -41.292 (meters)                     GEOID18
 AB9517  NAD 83(2011) X  -  2,589,033.512 (meters)                     COMP
 AB9517  NAD 83(2011) Y  - -5,498,925.619 (meters)                     COMP
 AB9517  NAD 83(2011) Z  -  1,927,140.087 (meters)                     COMP
 AB9517  LAPLACE CORR    -          0.80  (seconds)                    DEFLEC18
 AB9517
 AB9517  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AB9517  Standards:
 AB9517         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AB9517            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 AB9517  ------------------------------------------------------------------
 AB9517  NETWORK    3.09   5.35           1.13   1.37   2.73     -0.13725825
 AB9517  ------------------------------------------------------------------
 AB9517  Click here for local accuracies and other accuracy information.
 AB9517
 AB9517
 AB9517.This mark is at Alexander Hamilton Airport (STX)
 AB9517
 AB9517.The horizontal coordinates were established by GPS observations
 AB9517.and adjusted by the National Geodetic Survey in June 2012.
 AB9517
 AB9517.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AB9517.been affixed to the stable North American tectonic plate. See
 AB9517.NA2011 for more information.
 AB9517
```

```
AB9517.The horizontal coordinates are valid at the epoch date displayed above
AB9517.which is a decimal equivalence of Year/Month/Day.
AB9517
AB9517.The orthometric height was determined by GPS observations and a
AB9517.high-resolution geoid model.
AB9517
AB9517.Significant digits in the geoid height do not necessarily reflect accuracy.
AB9517.GEOID18 height accuracy estimate available here.
```

...

```
 BZ0269 ***********************************************************************
BZ0269  DESIGNATION -  WELL
BZ0269  PID         -  BZ0269
BZ0269  STATE/COUNTY-  TX/ANDERSON
BZ0269  COUNTRY     -  US
BZ0269  USGS QUAD   -  ROUSTABOUT CAMP (1982)
BZ0269
BZ0269                        *CURRENT SURVEY CONTROL
BZ0269  ______________________________________________________________________
BZ0269* NAD 83(1993) POSITION- 31 58 01.04401(N) 096 02 14.41676(W)   ADJUSTED
BZ0269* NAD 83(1993) ELLIP HT-    64.463 (meters)        (02/16/96)   ADJUSTED
BZ0269* NAVD 88 ORTHO HEIGHT -    89.950 (meters)      295.11  (feet) ADJUSTED
BZ0269  ______________________________________________________________________
BZ0269  GEOID HEIGHT    -       -25.635 (meters)                     GEOID18
BZ0269  NAD 83(1993) X  -   -569,641.796 (meters)                     COMP
BZ0269  NAD 83(1993) Y  - -5,386,013.883 (meters)                     COMP
BZ0269  NAD 83(1993) Z  -  3,357,357.704 (meters)                     COMP
BZ0269  LAPLACE CORR    -         -1.12  (seconds)                    DEFLEC18
BZ0269  DYNAMIC HEIGHT  -         89.845 (meters)      294.77  (feet) COMP
BZ0269  MODELED GRAVITY -    979,467.4   (mgal)                       NAVD 88
BZ0269
BZ0269  HORZ ORDER      -  SECOND
BZ0269  VERT ORDER      -  SECOND    CLASS 0
BZ0269  ELLP ORDER      -  FIFTH     CLASS I
BZ0269
BZ0269.The horizontal coordinates were established by classical geodetic methods
BZ0269.and adjusted by the National Geodetic Survey in February 1996.
BZ0269.
BZ0269.The orthometric height was determined by differential leveling and
BZ0269.adjusted by the NATIONAL GEODETIC SURVEY
BZ0269.in June 1991.
BZ0269
BZ0269.Significant digits in the geoid height do not necessarily reflect accuracy.
BZ0269.GEOID18 height accuracy estimate available here.
```

...

```
TV1516 ***********************************************************************
TV1516  DESIGNATION -  BQN C
TV1516  PID         -  TV1516
TV1516  STATE/COUNTY-  PR/AGUADILLA
TV1516  COUNTRY     -  US
TV1516  USGS QUAD   -  MOCA (1964)
TV1516
TV1516                        *CURRENT SURVEY CONTROL
TV1516  ______________________________________________________________________
TV1516* NAD 83(2011) POSITION- 18 29 53.33863(N) 067 07 15.36607(W)   NO CHECK
TV1516* NAD 83(2011) ELLIP HT-    18.154 (meters)        (06/27/12)   NO CHECK
TV1516* NAD 83(2011) EPOCH   -  2010.00
TV1516* LMSL    ORTHO HEIGHT -    62.9   (meters)      206.    (feet) GPS OBS
TV1516  ______________________________________________________________________
TV1516  LMSL orthometric height was determined with geoid model       GEOID96
TV1516  GEOID HEIGHT    -       -46.479 (meters)                     GEOID96
TV1516  GEOID HEIGHT    -       -44.864 (meters)                     GEOID18
TV1516  NAD 83(2011) X  -  2,352,419.909 (meters)                     COMP
TV1516  NAD 83(2011) Y  - -5,574,639.411 (meters)                     COMP
TV1516  NAD 83(2011) Z  -  2,010,753.737 (meters)                     COMP
TV1516  LAPLACE CORR    -          2.38  (seconds)                    DEFLEC18
```

```
TV1516
TV1516  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
TV1516  Standards:
TV1516         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
TV1516            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
TV1516  ------------------------------------------------------------------
TV1516  NETWORK    1.77   6.74           0.64   0.79   3.44      0.14744717
TV1516  ------------------------------------------------------------------
TV1516  Click here for local accuracies and other accuracy information.
TV1516
TV1516
TV1516.The horizontal coordinates were established by GPS observations
TV1516.and adjusted by the National Geodetic Survey in June 2012.
TV1516
TV1516.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
TV1516.been affixed to the stable North American tectonic plate. See
TV1516.NA2011 for more information.
TV1516
TV1516.The horizontal coordinates are valid at the epoch date displayed above
TV1516.which is a decimal equivalence of Year/Month/Day.
TV1516
TV1516.No horizontal observational check was made to the station.
TV1516.
TV1516.The orthometric height was determined by GPS observations and a
TV1516.high-resolution geoid model.
TV1516
TV1516.Significant digits in the geoid height do not necessarily reflect accuracy.
TV1516.GEOID18 height accuracy estimate available here.
```

(1) Datasheets now incorporate IGS14 (realization of ITRF2014 at epoch 2010.0 which replaces IGS08) for CORS. CORS that are part of this realization will show the message:

```
<PID>.Due to the release of the International GNSS Service (IGS) 2014
<PID>.realization of the International Terrestrial Reference Frame of 2014
<PID>.(ITRF2014), NGS reprocessed all NOAA CORS Network and some IGS stations
<PID>.using data collected between 1/1/1996 and 1/30/2017. The resulting ITRF2014
<PID>.epoch 2010.00 coordinates, referred to as Multi-Year CORS Solution 2
<PID>.(MYCS2), were transformed to NAD 83 (2011/PA11/MA11) maintaining the
<PID>.currently published epoch of 2010.00.
<PID>
<PID>.Additional information on MYCS2 is available at
<PID>.https://geodesy.noaa.gov/CORS/coords.shtml
```

Prior to this it was:

```
<PID>***Due to the release of the International GNSS Service (IGS) 2014
<PID>***realization of the International Terrestrial Reference Frame of 2014
<PID>***(ITRF2014), NGS reprocessed all NOAA CORS Network and some IGS stations
<PID>***using datacollected between 1/1/1996 and 1/30/2017. The resulting ITRF2014
<PID>***epoch 2010.00 coordinates, referred to as Multi-Year CORS Solution 2
<PID>***(MYCS2), were transformed to NAD 83 (2011/PA11/MA11) maintaining the
<PID>***currently published epoch of 2010.00.
<PID>
<PID>***The MYCS2 NAD 83 coordinates are shown with adjustment dates of June,
<PID>***July, or August 2019. Previous CORS NAD 83 coordinates (if any) are
<PID>***given in the superseded section of the datasheet.
<PID>
<PID>***Additional information on MYCS2 is available at
<PID>***https://geodesy.noaa.goc/CORS/coords.shtml
```

CORS that are part of this realization will also show an updated link for the coordinates page on their datasheets:

```
<PID>'   ftp://cors.ngs.noaa.gov/cors/coord/coord_14
```

Prior to this it was:

<PID>' ftp://cors.ngs.noaa.gov/cors/coord/coord_08

Additionally, datasheets for modeled CORS will now display the following paragraph on their datasheets:

```
<PID>.Formal positional accuracy estimates are not available for this CORS
<PID>.because its coordinates were determined in part using modeled
<PID>.velocities. Approximate one-sigma accuracies for latitude, longitude,
<PID>.and ellipsoid height can be obtained from the short-term time series.
<PID>.Additional information regarding modeled velocities is available on
<PID>.the CORS Coordinates for MYCS2 web page: https://www.ngs.noaa.gov/CORS/coords.shtml.
```

Prior to this it was:

```
<PID>.Formal positional accuracy estimates are not available for this CORS
<PID>.because its coordinates were determined in part using modeled
<PID>.velocities. Approximate one-sigma accuracies for latitude, longitude,
<PID>.and ellipsoid height can be obtained from the short-term time series.
<PID>.Additional information regarding modeled velocities is available on
<PID>.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
```

A datasheet displaying all of the above changes is shown below with special emphasis on the highlighted green text.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2019
 DQ6620 ***********************************************************************
 DQ6620  CORS         -  This is a GPS Continuously Operating Reference Station.
 DQ6620  DESIGNATION -  SEWARD CORS ARP
 DQ6620  CORS_ID      -  AKSE
 DQ6620  PID          -  DQ6620
 DQ6620  STATE/COUNTY-  AK/KENAI PENINSULA BOROUGH
 DQ6620  COUNTRY      -  US
 DQ6620  USGS QUAD    -  SEWARD A-7
 DQ6620
 DQ6620                         *CURRENT SURVEY CONTROL
 DQ6620  ______________________________________________________________________
 DQ6620* NAD 83(2011) POSITION- 60 07 56.99193(N) 149 26 11.25906(W)   ADJUSTED
 DQ6620* NAD 83(2011) ELLIP HT-    43.947 (meters)        (10/??/17)   ADJUSTED
 DQ6620* NAD 83(2011) EPOCH   -  2010.00
 DQ6620  ______________________________________________________________________
 DQ6620  GEOID HEIGHT    -         12.026 (meters)                     GEOID12B
 DQ6620  NAD 83(2011) X  - -2,741,920.769 (meters)                     COMP
 DQ6620  NAD 83(2011) Y  - -1,619,213.188 (meters)                     COMP
 DQ6620  NAD 83(2011) Z  -  5,507,881.469 (meters)                     COMP
 DQ6620
 DQ6620.Formal positional accuracy estimates are not available for this CORS
 DQ6620.because its coordinates were determined in part using modeled
 DQ6620.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DQ6620.and ellipsoid height can be obtained from the short-term time series.
 DQ6620.Additional information regarding modeled velocities is available on
 DQ6620.the CORS Coordinates for MYCS2 web page: https://www.ngs.noaa.gov/CORS/coords.shtml.
 DQ6620
 DQ6620.The coordinates were established by GPS observations
 DQ6620.and adjusted by the National Geodetic Survey in October 2017.
 DQ6620
 DQ6620.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DQ6620.been affixed to the stable North American Tectonic Plate.
 DQ6620
 DQ6620.The coordinates are valid at the epoch date displayed above
 DQ6620.which is a decimal equivalence of Year/Month/Day.
 DQ6620
 DQ6620.Due to the release of the International GNSS Service (IGS) 2014
 DQ6620.realization of the International Terrestrial Reference Frame of 2014
 DQ6620.(ITRF2014), NGS reprocessed all NOAA CORS Network and some IGS stations
 DQ6620.using data collected between 1/1/1996 and 1/30/2017. The resulting ITRF2014
 DQ6620.epoch 2010.00 coordinates, referred to as Multi-Year CORS Solution 2
 DQ6620.(MYCS2), were transformed to NAD 83 (2011/PA11/MA11) maintaining the
 DQ6620.currently published epoch of 2010.00.
 DQ6620
 DQ6620.Additional information on MYCS2 is available at
```

```
 DQ6620.https://geodesy.noaa.gov/CORS/coords.shtml
 DQ6620
 DQ6620.Significant digits in the geoid height do not necessarily reflect accuracy.
 DQ6620.GEOID12B height accuracy estimate available here.
 DQ6620
 DQ6620.The PID for the CORS L1 Phase Center is DQ6621.
 DQ6620
 DQ6620.Click here to see if photographs exist for this station.
 DQ6620
 DQ6620.The XYZ, and position/ellipsoidal ht. are equivalent.
 DQ6620
 DQ6620.The ellipsoidal height was determined by GPS observations
 DQ6620.and is referenced to NAD 83.
 DQ6620
 DQ6620. The following values were computed from the NAD 83(2011) position.
 DQ6620
 DQ6620;                    North         East     Units Scale Factor Converg.
 DQ6620;UTM  06      - 6,668,663.209   364,664.203   MT  0.99982446   -2 06 47.4
 DQ6620
 DQ6620!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DQ6620!UTM  06      -   0.99999312  x   0.99982446  =   0.99981758
 DQ6620
 DQ6620_U.S. NATIONAL GRID SPATIAL ADDRESS: 6VUM6466468663(NAD 83)
 DQ6620
 DQ6620                           SUPERSEDED SURVEY CONTROL
 DQ6620
 DQ6620.No superseded survey control is available for this station.
 DQ6620
 DQ6620_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DQ6620
 DQ6620                           STATION DESCRIPTION
 DQ6620
 DQ6620'DESCRIBED BY NATIONAL GEODETIC SURVEY 2017
 DQ6620'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DQ6620'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DQ6620'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DQ6620'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DQ6620'   ftp://cors.ngs.noaa.gov/cors/coord/coord_14
 DQ6620'   ftp://cors.ngs.noaa.gov/cors/station_log
 DQ6620'   http://geodesy.noaa.gov/CORS
```

(2) A mark with PID AI4494 had its State Plane Coordinate System corrected from SPC CA 6 to SPC CA 5 as shown below in the highlighted green text.

```
1        National Geodetic Survey,   Retrieval Date = JULY  2, 2019
 AI4494 ***********************************************************************
 AI4494  DESIGNATION -  LONG LONGDON YARD BASE GRM
 AI4494  PID         -  AI4494
 AI4494  STATE/COUNTY-  CA/LOS ANGELES
 AI4494  COUNTRY     -  US
 AI4494  USGS QUAD   -  EL MONTE (1994)
 AI4494
 AI4494                         *CURRENT SURVEY CONTROL
 AI4494  ______________________________________________________________________
 AI4494* NAD 83(2011) POSITION- 34 06 42.82806(N) 118 00 12.22905(W)   ADJUSTED
 AI4494* NAD 83(2011) ELLIP HT-    74.984 (meters)        (06/27/12)   ADJUSTED
 AI4494* NAD 83(2011) EPOCH   -  2010.00
 AI4494* NAVD 88 ORTHO HEIGHT -   109.1   (meters)      358.    (feet) GPS OBS
 AI4494  ______________________________________________________________________
 AI4494  NAVD 88 orthometric height was determined with an earlier geoid model
 AI4494  GEOID HEIGHT    -        -34.078 (meters)                    GEOID18
 AI4494  NAD 83(2011) X  - -2,482,076.970 (meters)                    COMP
 AI4494  NAD 83(2011) Y  - -4,667,440.247 (meters)                    COMP
 AI4494  NAD 83(2011) Z  -  3,556,771.813 (meters)                    COMP
 AI4494  LAPLACE CORR    -          3.61  (seconds)                   DEFLEC18
 AI4494
 AI4494  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AI4494  Standards:
 AI4494         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
```

```
AI4494            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AI4494  ------------------------------------------------------------------
AI4494  NETWORK    0.10   0.24           0.04   0.04   0.12      0.01843142
AI4494  ------------------------------------------------------------------
AI4494  Click here for local accuracies and other accuracy information.
AI4494
AI4494
AI4494.The horizontal coordinates were established by GPS observations
AI4494.and adjusted by the National Geodetic Survey in June 2012.
AI4494
AI4494.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AI4494.been affixed to the stable North American tectonic plate. See
AI4494.NA2011 for more information.
AI4494
AI4494.The horizontal coordinates are valid at the epoch date displayed above
AI4494.which is a decimal equivalence of Year/Month/Day.
AI4494
AI4494.The orthometric height was determined by GPS observations and a
AI4494.high-resolution geoid model.
AI4494
AI4494.Significant digits in the geoid height do not necessarily reflect accuracy.
AI4494.GEOID18 height accuracy estimate available here.
AI4494
AI4494.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AI4494
AI4494.The Laplace correction was computed from DEFLEC18 derived deflections.
AI4494
AI4494.The ellipsoidal height was determined by GPS observations
AI4494.and is referenced to NAD 83.
AI4494
AI4494. The following values were computed from the NAD 83(2011) position.
AI4494
AI4494;                    North         East     Units Scale Factor Converg.
AI4494;SPC CA 5     -   567,875.095 1,999,686.590   MT  0.99998390   -0 00 07.0
AI4494;SPC CA 5     - 1,863,103.54  6,560,638.42   sFT  0.99998390   -0 00 07.0
AI4494;UTM  11      - 3,775,017.438   407,458.373   MT  0.99970557   -0 33 45.9
AI4494
AI4494!             -  Elev Factor  x  Scale Factor =   Combined Factor
AI4494!SPC CA 5     -   0.99998823  x   0.99998390  =   0.99997213
AI4494!UTM  11      -   0.99998823  x   0.99970557  =   0.99969380
AI4494
AI4494_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SMT0745875017(NAD 83)
AI4494
AI4494                           SUPERSEDED SURVEY CONTROL
AI4494
AI4494  NAD 83(2007)-  34 06 42.82599(N)    118 00 12.22679(W) AD(2007.00) 0
AI4494  ELLIP H (02/10/07)   74.970  (m)                       GP(2007.00)
AI4494  NAD 83(1998)-  34 06 42.82025(N)    118 00 12.22058(W) AD(2000.35) A
AI4494  ELLIP H (04/03/01)   74.989  (m)                       GP(2000.35) 1 1
AI4494  NAD 83(1998)-  34 06 42.81835(N)    118 00 12.21862(W) AD(1998.50) A
AI4494  ELLIP H (04/06/00)   75.026  (m)                       GP(1998.50) 3 1
AI4494  NAVD 88 (04/06/00)  109.2    (m)  GEOID99 model used   GPS OBS
AI4494
AI4494.Superseded values are not recommended for survey control.
AI4494
AI4494.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AI4494.See file dsdata.pdf to determine how the superseded data were derived.
AI4494
AI4494_MARKER: Z = SEE DESCRIPTION
AI4494_SETTING: 0 = UNSPECIFIED SETTING
AI4494_MARK LOGO: NONE
AI4494_MAGNETIC: N = NO MAGNETIC MATERIAL
AI4494_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
AI4494+STABILITY: POSITION/ELEVATION WELL
AI4494_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AI4494+SATELLITE: SATELLITE OBSERVATIONS - 1998
AI4494
AI4494  HISTORY     - Date     Condition        Report By
AI4494  HISTORY     - 1998     MONUMENTED       NGS
AI4494
AI4494                           STATION DESCRIPTION
```

```
 AI4494
 AI4494'DESCRIBED BY NATIONAL GEODETIC SURVEY 1998
 AI4494'THESE COORDINATES ARE FOR THE GEODETIC REFERENCE MARK OF A
 AI4494'CALIFORNIA CORS.  INFORMATION ABOUT THE GRM, ANTENNA TYPE
 AI4494'AND ANTENNA HEIGHT CAN BE FOUND AT THE SOPAC WEBSITE:
 AI4494'HTTP://SOPAC.UCSD.EDU/SCRIPTS/SIMPL.CGI
```

(3) The word “topographic” was removed from the paragraph that appears on some datasheets:

```
<PID>.The horizontal coordinates were scaled from a topographic map and have
<PID>.an estimated accuracy of +/- 6 seconds.
```

An example datasheet is shown below with the new paragraph highlighted in green text:

```
1        National Geodetic Survey,   Retrieval Date = JULY  2, 2019
 LF0938 ***********************************************************************
 LF0938  DESIGNATION -  MM 158
 LF0938  PID         -  LF0938
 LF0938  STATE/COUNTY-  IA/FREMONT
 LF0938  COUNTRY     -  US
 LF0938  USGS QUAD   -  TABOR SW (1957)
 LF0938
 LF0938                         *CURRENT SURVEY CONTROL
 LF0938  ______________________________________________________________________
 LF0938* NAD 83(1986) POSITION- 40 52 23.     (N) 095 39 15.     (W)    SCALED
 LF0938* NAVD 88 ORTHO HEIGHT -   352.791 (meters)     1157.45  (feet) ADJUSTED
 LF0938  ______________________________________________________________________
 LF0938  GEOID HEIGHT    -        -29.030 (meters)                     GEOID18
 LF0938  DYNAMIC HEIGHT  -        352.616 (meters)     1156.87  (feet) COMP
 LF0938  MODELED GRAVITY -    980,116.8   (mgal)                       NAVD 88
 LF0938
 LF0938  VERT ORDER      -  SECOND    CLASS 0
 LF0938
 LF0938.The horizontal coordinates were scaled from a map and have
 LF0938.an estimated accuracy of +/- 6 seconds.
 LF0938.
 LF0938.The orthometric height was determined by differential leveling and
 LF0938.adjusted by the NATIONAL GEODETIC SURVEY
 LF0938.in June 1991.
 LF0938
 LF0938.Significant digits in the geoid height do not necessarily reflect accuracy.
 LF0938.GEOID18 height accuracy estimate available here.
 LF0938
 LF0938.The dynamic height is computed by dividing the NAVD 88
 LF0938.geopotential number by the normal gravity value computed on the
 LF0938.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 LF0938.degrees latitude (g = 980.6199 gals.).
 LF0938
 LF0938.The modeled gravity was interpolated from observed gravity values.
 LF0938
 LF0938;                    North         East     Units  Estimated Accuracy
 LF0938;SPC IA S     -    99,200.      318,440.      MT  (+/- 180 meters Scaled)
 LF0938
 LF0938_U.S. NATIONAL GRID SPATIAL ADDRESS: 15TTF763280(NAD 83)
 LF0938
 LF0938                           SUPERSEDED SURVEY CONTROL
 LF0938
 LF0938  NGVD 29 (??/??/92)  352.691   (m)         1157.12   (f) ADJ UNCH    2 0
 LF0938
 LF0938.Superseded values are not recommended for survey control.
 LF0938
 LF0938.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 LF0938.See file dsdata.pdf to determine how the superseded data were derived.
 LF0938
 LF0938_MARKER: DB = BENCH MARK DISK
 LF0938_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 LF0938_STAMPING: MM 158 1949
 LF0938_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
```

```
LF0938+STABILITY: SURFACE MOTION
LF0938
LF0938  HISTORY     - Date     Condition        Report By
LF0938  HISTORY     - 1949     MONUMENTED       CGS
LF0938  HISTORY     - 1950     GOOD             CGS
LF0938  HISTORY     - 1950     GOOD             CGS
LF0938
LF0938                          STATION DESCRIPTION
LF0938
LF0938'DESCRIBED BY COAST AND GEODETIC SURVEY 1950
LF0938'5 MI W FROM RANDOLPH.
LF0938'5.0 MILES WEST ALONG STATE HIGHWAY 184 FROM THE SCHOOLHOUSE AT
LF0938'RANDOLPH, 111 FEET WEST OF THE CENTER LINE OF A PRIVATE DRIVEWAY
LF0938'WHICH LEADS TO THE JOHN HALOM RESIDENCE, 60 FEET NORTH OF THE
LF0938'CENTER LINE OF THE HIGHWAY, 10 FEET EAST OF A GATE POST, 3.0
LF0938'FEET EAST OF A WITNESS POST, 1.4 FEET SOUTH OF A FENCE, AND SET
LF0938'IN THE TOP OF A CONCRETE POST PROJECTING 0.7 FOOT ABOVE THE
LF0938'GROUND.
LF0938
LF0938                          STATION RECOVERY (1950)
LF0938
LF0938'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1950
LF0938'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:12
```

(4) When retrieving datasheets, marks with a *Set_By* or a *Designation* that contained the word "SRC" were being eliminated from the list of available marks to choose from, and shouldn't have been. Below is a sampling of marks that were not displaying in the listing of marks, but now are. This issue was not present in the monthly archived datasheets; only datasheets retrieved on the fly.

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
|....|AA8859|1995|BDE...|0 .|88/GPS OBS.|N304932.48510|W0871634.81631|C...|S|SRC 1003
|....|DG6883|2002|CSRC..|0 k|88/GPS OBS.|N373116.20314|W1220203.95080|D...|N|FILBERT
|....|DH4116|....|......|0 .|...........|N344707.56103|W1171603.30880|....|.|DEVRIESRCHCS2005
GRP
|....|DH8059|2003|CSRC..|. 2|88/ADJUSTED|N343322......|W1203659......|A...|G|VNDP VANDENBERG
CORS ARD
|....|DL7760|....|......|0 .|...........|N452725.98575|W1093415.58671|....|.|YNPBASSRCHMT2005
GRP
|....|HV0859|UNK.|MDSRC.|. 2|88/ADJUSTED|N383011......|W0765735......|D...|G|A MDSRC
|....|JV0910|1961|MDSRC.|0 2|88/ADJUSTED|N391159.46359|W0764416.04830|D...|G|HARWOOD RESET
|....|JV1335|1965|MDSRC.|0 2|88/ADJUSTED|N391150.45229|W0764739.07118|C...|G|J 109
|....|SW1124|UNK.|......|W .|29/VERT ANG|N475539.09338|W1181116.61210|....|O|SRCP 16 SRN
```

(5) The paragraph for the photographs was changed from:

```
<PID>.Photographs are available for this station.
```

to

```
<PID>. Click here to see if photographs exist for this station.
```

An Example PID is DE9752:

```
DE9752.Click here to see if photographs exist for this station.
```

(6) Marks can now be retrieved by designation where the first character is a hyphen/dash/minus sign.

Example:

a. In your favorite browser, enter the URL: *https://www.ngs.noaa.gov/cgi-bin/ds_desig.prl*.

b. In the *Station Name* field, enter `-*`, select `California` from the *Pick a State* drop-down list box, and then press the *[Submit]* button.

c. You should see the following list of marks:

```
|PID...|St|Cty|Set.|Set By|C|Latitude.....|Longitude.....|DtmTag|H V|Vert_Source|Stab|Dist|Designation
|------|--|---|----|------|-|-------------|--------------|------|- -|-----------|----|----|-----------
|DW0206|CA|025|UNK.|BOR...|X|N331434......|W1153043......|......|. 1|29/ADJUSTED|B...|....|-121
|DW0106|CA|025|UNK.|USGS..|X|N330405......|W1153035......|......|. 1|29/ADJUSTED|D...|....|-162 Y
|DW0028|CA|025|UNK.|USE...|X|N332104......|W1153756......|......|. .|29/........|D...|....|-189
|DX0606|CA|065|UNK.|USGS..|N|N333411......|W1160442......|......|. 1|29/ADJUSTED|D...|....|-189 T
|DW0252|CA|025|UNK.|USGS..|G|N331135......|W1154957......|......|. 1|29/ADJUSTED|B...|....|-227.10
|GS0314|CA|027|1907|USGS..|X|N363341......|W1165433......|......|. 1|88/ADJUSTED|D...|....|-248
|DW0233|CA|025|UNK.|USGS..|G|N331839......|W1155920......|......|. m|88/READJUST|C...|....|-39 T
|DB0612|CA|025|UNK.|USGS..|G|N324757......|W1152955......|......|. 1|88/ADJUSTED|D...|....|-47
|DB0687|CA|025|1927|USGS..|S|N324741......|W1153207......|......|. 1|29/ADJUSTED|....|....|-50 Y
|DB0629|CA|025|UNK.|USGS..|N|N324808......|W1152638......|......|. 1|29/ADJUSTED|D...|....|-59 Y
```

(7) A new project was added to the list of valid projects in the Gulf Coast dynamic region/subsidence area:

00000729/1A with epoch 2009.55.

This project is valid in the state of Texas (TX).

Below is the list of all the valid projects for the Gulf Coast Dynamic Region/Subsidence Area (new record is highlighted in green).

Project	Epoch
00000729	2009.55
00000729/1	2009.55
00000729/1A	2009.55
00000729/2	2009.55
00000729/3	2009.55
00000729/4	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000730/5	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
00000803	2009.55
00000840	2009.55
00000857	2009.55
GPS2021/C	2004.65
GPS2100	2004.65
GPS2212	2004.65
GPS2262	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2329	2006.81
GPS2896/B	2009.55
GPS2896/C	2009.55
GPS2995	2009.55
GPS2995/B	2009.55

Additionally, below is a list of the valid project/state combinations within the Gulf Coast Dynamic Region/Subsidence Area (new record is highlighted in green).

Subsidence Project	State
00000729	LA
00000729	MS
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/1A	TX
00000729/2	AL
00000729/2	MS
00000729/3	MS
00000729/4	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000730/5	AL
00000730/5	MS
00000731	FL
00000732	TX
00000772	MS
00000803	MS
00000840	MS
00000857	FL
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL
GPS2995	LA
GPS2995/B	LA

Below is a list of specific control points that are publishable in the Gulf Coast Dynamic Region/Subsidence Area.

UID	PID	EPOCH
10484553	BG1724	2009.55
10166440	BW0856	2009.55

Version 8.12.5.3 updated on 05/22/2019

The Observation & Analysis Division (OAD) recently added 1,500 historical elevations/heights in Louisiana and Mississippi to the NGS database under project 00000729. These marks are in the Gulf Coast dynamic region/subsidence area which extends through parts of Alabama, Florida, Louisiana, Mississippi, and Texas. These historical elevations/heights are not normally displayed on datasheets unless the checkbox *Include suspect heights in vertical motion areas* is checked on the datasheet retrieval web pages. Example PIDs are AU0965, AU1306, and AU2210. The historical elevation/height can be seen in the examples below for each of these PIDs when this checkbox is checked.

```
AU0965                          SUPERSEDED SURVEY CONTROL
AU0965
AU0965  NAD 83(2007)-  29 54 34.72186(N)    090 05 03.11162(W) AD(       ) 0
AU0965  ELLIP H (02/10/07)  -19.436  (m)                       GP(       )
AU0965  NAD 83(1992)-  29 54 34.72202(N)    090 05 03.11162(W) AD(       ) B
AU0965  ELLIP H (05/09/05)  -19.429  (m)                       GP(       ) 4 2
AU0965  NAD 83(1992)-  29 54 34.72091(N)    090 05 03.11135(W) AD(       ) 2
AU0965  NAD 83(1986)-  29 54 34.73568(N)    090 05 03.11148(W) AD(       ) 2
AU0965  NAD 27      -  29 54 33.99737(N)    090 05 02.85239(W) AD(       ) 2
AU0965  NAVD 88 (05/17/09)    6.476  (m)           21.25   (f) SUPERSEDED  1 2
AU0965  NAVD 88 (01/05/06)    6.49   (m)  GEOID03 model used   GP(2004.65)
AU0965  NAVD 88 (05/09/05)    6.62   (m)  USGG200 model used   GPS OBS
AU0965  NAVD 88 (12/05/96)    6.663  (m)           21.86   (f) ADJUSTED    1 2
AU0965  NAVD 88 (02/14/94)    6.647  (m)           21.81   (f) SUPERSEDED  1 2
AU0965  NGVD 29               6.87   (m)           22.5    (f) LEVELING    3
AU0965  NGVD 29 (11/26/84)    6.745  (m)           22.13   (f) ADJUSTED    1 2

AU1306                          SUPERSEDED SURVEY CONTROL
AU1306
AU1306  NAVD 88 (05/17/09)    0.558  (m)            1.83   (f) SUPERSEDED  2 1
AU1306  NAVD 88 (02/14/94)    0.849  (m)            2.79   (f) ADJUSTED    1 2
AU1306  NGVD 29 (11/26/84)    0.907  (m)            2.98   (f) ADJUSTED    1 2

AU2210                          SUPERSEDED SURVEY CONTROL
AU2210
AU2210  NAVD 88 (12/05/96)    0.631  (m)            2.07   (f) ADJUSTED    1 2
AU2210  NAVD 88 (02/14/94)    0.612  (m)            2.01   (f) SUPERSEDED  1 2
AU2210  NGVD 29 (05/21/91)    0.672  (m)            2.20   (f) ADJUSTED    1 2
AU2210  NGVD 29 (??/??/87)    0.736  (m)            2.41   (f) SUPERSEDED  1 2
```

As a result of loading these 1,500 historical elevations/heights into the NGS database, several messages displayed on the datasheets that have a historical elevation/height that is in project 00000729 were modified. An example PID showing these message changes is BK0694; its partial datasheet is shown below with the highlighted changes for the messages in green.

```
PROGRAM = datasheet95, VERSION = 8.12.5.3
1        National Geodetic Survey,   Retrieval Date = MAY  3, 2019
 BK0694 ***********************************************************************
 BK0694  DESIGNATION -  W 162
```

```
BK0694  PID         -  BK0694
BK0694  STATE/COUNTY-  LA/JEFFERSON DAVIS
BK0694  COUNTRY     -  US
BK0694  USGS QUAD   -  JENNINGS (1993)
BK0694
BK0694                        *CURRENT SURVEY CONTROL
BK0694  ______________________________________________________________________
BK0694* NAD 83(1986) POSITION- 30 11 49.     (N) 092 37 35.     (W)   SCALED
BK0694* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
BK0694  **This station is located in a suspected subsidence area (see below).
BK0694  ______________________________________________________________________
BK0694  GEOID HEIGHT    -        -27.287 (meters)                      GEOID12B
BK0694  DYNAMIC HEIGHT  -          4.582 (meters)       15.03  (feet) COMP
BK0694  MODELED GRAVITY -    979,306.4   (mgal)                        NAVD 88
BK0694
BK0694  VERT ORDER      -  FIRST     CLASS II
BK0694
BK0694.The horizontal coordinates were scaled from a map and have
BK0694.an estimated accuracy of +/- 6 seconds.
BK0694.
BK0694 ** This station is in an area of known vertical motion. If an
BK0694 ** orthometric height was ever established but is not available
BK0694 ** in the current survey control section, the orthometric height
BK0694 ** is considered suspect.  Suspect heights are available in the
BK0694 ** superseded section only if requested.
BK0694
BK0694.The 2009 superseded orthometric height was determined using a crustal movement
BK0694.model based on published report NOAA Technical Report NOS/NGS 50
BK0694.https://www.ngs.noaa.gov/heightmod/NOAANOSNGSTR50.pdf and
BK0694.adjusted by the NATIONAL GEODETIC SURVEY in May 2009
BK0694.in a special adjustment to evaluate GNSS-derived orthometric heights
BK0694
BK0694.WARNING-Repeat measurements at this control monument indicate possible
BK0694.vertical movement.
BK0694
BK0694.Significant digits in the geoid height do not necessarily reflect accuracy.
BK0694.GEOID12B height accuracy estimate available here.
BK0694
BK0694.The dynamic height is computed by dividing the NAVD 88
BK0694.geopotential number by the normal gravity value computed on the
BK0694.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BK0694.degrees latitude (g = 980.6199 gals.).
BK0694
BK0694.The modeled gravity was interpolated from observed gravity values.
BK0694
BK0694;                    North         East     Units  Estimated Accuracy
BK0694;SPC LA S     -   188,800.      875,500.      MT  (+/- 180 meters Scaled)
BK0694
BK0694_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RWP359406(NAD 83)
BK0694
BK0694                           SUPERSEDED SURVEY CONTROL
BK0694
BK0694  NAVD 88 (05/17/09)    4.210  (m)           13.81   (f) SUPERSEDED  1 2
BK0694  NAVD 88 (02/14/94)    4.588  (m)           15.05   (f) ADJUSTED    1 2
BK0694  NAVD 88 (06/15/91)    4.587  (m)           15.05   (f) SUPERSEDED  1 2
BK0694  NGVD 29 (11/26/84)    4.547  (m)           14.92   (f) ADJUSTED    1 2
BK0694
BK0694.Superseded values are not recommended for survey control.
```

…

```
TV1516 ***********************************************************************
TV1516  DESIGNATION -  BQN C
TV1516  PID         -  TV1516
TV1516  STATE/COUNTY-  PR/AGUADILLA
TV1516  COUNTRY     -  US
TV1516  USGS QUAD   -  MOCA (1964)
TV1516
TV1516                        *CURRENT SURVEY CONTROL
TV1516  ______________________________________________________________________
TV1516* NAD 83(2011) POSITION- 18 29 53.33863(N) 067 07 15.36607(W)   NO CHECK
```

```
TV1516* NAD 83(2011) ELLIP HT-    18.154 (meters)        (06/27/12)   NO CHECK
TV1516* NAD 83(2011) EPOCH   -  2010.00
TV1516* LMSL    ORTHO HEIGHT -    62.9   (meters)      206.    (feet) GPS OBS
TV1516
TV1516  LMSL orthometric height was determined with geoid model       GEOID96
TV1516  GEOID HEIGHT    -        -46.479 (meters)                     GEOID96
TV1516  GEOID HEIGHT    -        -44.864 (meters)                     GEOID18
TV1516  NAD 83(2011) X  -  2,352,419.909 (meters)                     COMP
TV1516  NAD 83(2011) Y  - -5,574,639.411 (meters)                     COMP
TV1516  NAD 83(2011) Z  -  2,010,753.737 (meters)                     COMP
TV1516  LAPLACE CORR    -          2.38  (seconds)                    DEFLEC18
TV1516
TV1516  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
TV1516  Standards:
TV1516         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
TV1516            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
TV1516  ------------------------------------------------------------------
TV1516  NETWORK    1.77   6.74           0.64   0.79   3.44      0.14744717
TV1516  ------------------------------------------------------------------
TV1516  Click here for local accuracies and other accuracy information.
TV1516
TV1516
TV1516.The horizontal coordinates were established by GPS observations
TV1516.and adjusted by the National Geodetic Survey in June 2012.
TV1516
TV1516.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
TV1516.been affixed to the stable North American tectonic plate. See
TV1516.NA2011 for more information.
TV1516
TV1516.The horizontal coordinates are valid at the epoch date displayed above
TV1516.which is a decimal equivalence of Year/Month/Day.
TV1516
TV1516.No horizontal observational check was made to the station.
TV1516.
TV1516.The orthometric height was determined by GPS observations and a
TV1516.high-resolution geoid model.
TV1516
TV1516.Significant digits in the geoid height do not necessarily reflect accuracy.
TV1516.GEOID18 height accuracy estimate available here.
```

…

Version 8.12.5.2 updated on 11/01/2018

In this version of datasheet95 V8.12.5.2, two issues have been corrected.

Issue #1: Marks whose best position had a weak position quality (i.e. POSITION.POS_QUALITY='W') were flagged as unpublishable and would not display a datasheet. Now, these marks display a datasheet if they are not flagged as unpublishable for other reasons (i.e. lack of descriptive text, etc.). If they are unpublishable for other reasons, then the datasheet reason codes are displayed. As a result of this change, the following marks now generate datasheets:

BH2805
BJ1303
BJ1337
BJ1519
BJ1550
BJ1931
CO0892
DB1521
DW0998
EB3056
EC1323

```
EC1328
EC1341
EC1377
EC1418
EG0595
FA1981
FA2011
FA2032
FA2172
FA2839
FA2850
FD1000
GC2313
GW1322
GZ1493
HT3454
JD0047
JD2086
KD1261
KE1342
LW5588
PE0221
PP2995
PQ0663
QP0438
QP1096
QP1243
SW1078
SW1547
TH0194
TO0484
TP0019
TP0023
TP0074
TP0156
TP0201
TR0824
TV0742
TV1488
TV1490
```

Issue #2: Marks that were presumed destroyed (i.e. HISTORY.COND='Z') now display the message:

```
*** NOTE - The station below is presumed destroyed.
```

Example PIDs are:

```
JA1410
JA1433
SB0953
KD0865
```

Prior to this they said:

```
*** NOTE - The station below is destroyed.
```

Marks that are actually destroyed (HISTORY.COND='X' or 'Y') still display the message:

```
*** NOTE - The station below is destroyed.
```

Example PIDs are:

```
TB0830
```

```
BJ1338
BJ1521
BJ3774
HV1673
DC1999
TP0912
```

The definitions of these condition codes mentioned here are:

X - Surface mark reported destroyed
Y - Surface and underground mark reported destroyed
Z - Presumed destroyed

Version 8.12.5.1 updated on 10/03/2018

In this version of datasheet95 V8.12.5.1, five issues have been corrected. This version of datasheet95 was updated in coordination with the get_mark_list V2.28.5 program, the program which displays the listing of marks on the datasheet retrieval pages.

Issue #1: Puerto Rican datasheets that formerly had a blank USGS QUADS field are no longer blank. An example PID is AB9749.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 21, 2018
 AB9749 ***********************************************************************
 AB9749  SACS        -  This is a Secondary Airport Control Station.
 AB9749  DESIGNATION -  PSE F
 AB9749  PID         -  AB9749
 AB9749  STATE/COUNTY-  PR/PONCE
 AB9749  COUNTRY     -  US
 AB9749  USGS QUAD   -  PONCE (1982)
. . .
```

Issue #2: No datasheet will be produced for control points/marks that are L1 Phase Centers. They will instead produce a datasheet reason code of 'L' both horizontally and vertically as shown below for PIDs AA9859, AE1860, CQ5983, and DM2003

```
Elapsed Time = 00:00:09
Msg=FATAL_ERROR - No Marks found


 ------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
 -   associated with a horizontal control Nonpub code shown under             -
 -   the heading 'H' and/or a vertical control Nonpub code shown under        -
 -   the heading 'v'                                                          -
 -                                                                            -
 -   The format of the records are as follows:                                -
 -       Pid  = Station Permanent Identifier)                                 -
 -       Name = Station Designation                                           -
 -       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)        -
 -       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)       -
 -       O    = Horizontal Order                                              -
 -       o    = Vertical Order                                                -
 -       H    = Horizontal Nonpub Code                                        -
 -       v    = Vertical Nonpub Code                                          -
 -                                                                            -
 -       H Nonpub HORIZONTAL CONTROL NONPUB REASON                            -
 -       -------- --------------------------------                            -
 -       B        Station is a RBN antenna                                    -
```

```
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       I        No NAD83 coordinates available, only IGS08 coordinates     -
-       L        CORS L1 Phase Center is not publishable                    -
-       N        No geodetic control                                        -
-       O        Outside NGS publication area                               -
-       P        Purpose of position is not for network control             -
-       R        Restricted position                                        -
-       T        Station is a temporary point/bench mark                    -
-       V        Station is a VOR antenna                                   -
-       W        Weakly determined position                                 -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
-                                                                           -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                             -
-       -------- -----------------------------                              -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       F        Bench mark not yet adjusted                                -
-       N        No geodetic control                                        -
-       L        CORS L1 Phase Center is not publishable                    -
-       O        Outside NGS publication area                               -
-       R        Restricted elevation                                       -
-       S        Mark is in a subsidence area                               -
-       T        Station is a temporary point/bench mark                    -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
-       Z        Presumed destroyed                                         -
-                                                                           -
-                                                                           -
-   NOTE - Stations found in this listing may still have a valid            -
-          datasheet produced by use of other publishable values.           -
-          For example, an ADJUSTED height may be non-publishable           -
-          but a good GPS height might be found on the datasheet.           -
-                                                                           -
-          If a mark/control point is in a subsidence area, you can request -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section  -
-          of its datasheet by checking the 'Include suspect heights in     -
-          subsidence area' checkbox on the datasheet retrieval pages.      -
-                                                                           -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
>AA9859 NORTHEAST 2250 CORS L1 PHS CT 29 47 28. /095 20 03.                LL
>AE1860 LUTZ L 1 PHASE CENTER         37 17 12. /121 51 54.                LL
>CQ5983 ANNETTE ISLAND 2 CORS L1 PHAS 55 04 07. /131 35 57.                LL
>DM2003 NORTHWESTERN S.U. CORS L1 PHA 31 45 02. /093 05 51.                LL
```

Issue #3: Prior to this version of the get_mark_list V2.28.5 program, user would see a destroyed mark only if its horizontal order and vertical order were not null/blank. This rule has been eliminated. Users should now see all destroyed marks regardless of their horizontal/vertical order. Example PIDs: DC2000, HV1673, KB0434, JA0689, JA1410, and JD2350. Previously, 4 of the 6 PIDs (DC2000, HV1673, KB0434, and JD2350) in this example would appear in the get_mark_list.w output while JA0689 and JA1410 did not.

Steps:

(1) Go to https://test.nosngs.noaa/cgi-bin/ds_pid.prl, enter

```
DC2000
HV1673
KB0434
JA0689
JA1410
JD2350
```

into the PID box, check the `Include Destroyed Marks` checkbox, and press the *[Submit]* button. You should see the following output (6 records in total and no less) in the get_mark_list output:

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|-------------|----|-|-----------
|....|DC2000|UNK.|......|3 .|...........|N324404.22319|W1163439.54188|....|Y|LOS PINOS FOREST
SERV LOOKOUT
|....|HV1673|1946|CGS...|. 2|88/ADJUSTED|N384957.02...|W0770224.62...|C...|Y|BOUNDARY WITNESS
MK 12 DC VA
|....|KB0434|1959|CGS...|. 2|88/ADJUSTED|N391026.77...|W0882149.29...|C...|X|KINGERY RM 1
|....|JA0689|UNK.|BORR..|. .|...........|N384002......|W0864738......|B...|X|Z 10 RESET
|....|JA1410|UNK.|......|. .|...........|N384003......|W0864728......|....|Z|GAGE BM
|....|JD2350|1934|CGS...|. 2|88/ADJUSTED|N381022......|W0931859......|....|Z|J 35
```

Issue #4: Prior to the update of the get_mark_list V2.28.5 program, the user would see "SORRY - No Station Found" for non-destroyed marks if a mark's horizontal order and vertical order were both null/blank. Example PIDs (all TBMs): JA0534, KA0024, LB1018, RD0191. This rule on horizontal/vertical order is no longer in place. Users will now see these previously curtailed marks in the list of marks.

Note: these marks will not have publishable datasheets because they are temporary benchmarks (TBMs). They will instead show the datasheet reason code of T both horizontally and vertically.

Steps:

(1) Go to https://test.nosngs.noaa/cgi-bin/ds_pid.prl, enter

```
JA0534
KA0024
LB1018
RD0191
```

into the PID box, and press the *[Submit]* button.

You should see the following output (must show all 4 records) in the get_mark_list output:

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|-------------|----|-|-----------
|....|JA0534|UNK.|USGS..|. .|...........|N382006......|W0863723......|B...|G|TBM 617.2 U
|....|KA0024|UNK.|CGS...|. u|29/ADJ UNCH|N394001......|W0861050......|B...|G|TBM 351
|....|LB1018|UNK.|DOD...|. 3|29/RESET...|N404006......|W0863750......|B...|G|TBM 236 B
|....|RD0191|UNK.|CGS...|. u|29/ADJ UNCH|N451214......|W1220906......|D...|N|TBM 1 W
```

(2) On the next page, press the `[Select All]` button, followed by the `[Get Datasheets]` button. You should see the following output (with special emphasis on the highlighted text in green):

```
1.3 The NGS Data Sheet - PRODUCTION

1.3.1.1.1 See file dsdata.pdf for more information about the datasheet.
WARNING: This is the PRODUCTION site and the data displayed below may not be accurate and
current.
```

```
WARNING: Use only for testing.

DATABASE = ngstest.NGSIDB, PROGRAM = datasheet95, VERSION = 8.12.5.1

 *** retrieval complete.
 Elapsed Time = 00:00:05
Msg=FATAL_ERROR - No Marks found


 ------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
 -   associated with a horizontal control Nonpub code shown under             -
 -   the heading 'H' and/or a vertical control Nonpub code shown under        -
 -   the heading 'v'                                                          -
 -                                                                            -
 -   The format of the records are as follows:                                -
 -       Pid  = Station Permanent Identifier)                                 -
 -       Name = Station Designation                                           -
 -       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)        -
 -       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)       -
 -       O    = Horizontal Order                                              -
 -       o    = Vertical Order                                                -
 -       H    = Horizontal Nonpub Code                                        -
 -       v    = Vertical Nonpub Code                                          -
 -                                                                            -
 -       H Nonpub HORIZONTAL CONTROL NONPUB REASON                            -
 -       -------- --------------------------------                            -
 -       B        Station is a RBN antenna                                    -
 -       C        Not a publishable datum within the state                    -
 -       D        No descriptive text available                               -
 -       I        No NAD83 coordinates available, only IGS08 coordinates      -
 -       L        CORS L1 Phase Center is not publishable                     -
 -       N        No geodetic control                                         -
 -       O        Outside NGS publication area                                -
 -       P        Purpose of position is not for network control              -
 -       R        Restricted position                                         -
 -       T        Station is a temporary point/bench mark                     -
 -       V        Station is a VOR antenna                                    -
 -       W        Weakly determined position                                  -
 -       X        Surface mark reported destroyed                             -
 -       Y        Surface and underground mark reported destroyed             -
                                                                              -
 -       v Nonpub VERTICAL CONTROL NONPUB REASON                              -
 -       -------- ------------------------------                              -
 -       C        Not a publishable datum within the state                    -
 -       D        No descriptive text available                               -
 -       F        Bench mark not yet adjusted                                 -
 -       N        No geodetic control                                         -
 -       L        CORS L1 Phase Center is not publishable                     -
 -       O        Outside NGS publication area                                -
 -       R        Restricted elevation                                        -
 -       S        Mark is in a subsidence area                                -
 -       T        Station is a temporary point/bench mark                     -
 -       X        Surface mark reported destroyed                             -
 -       Y        Surface and underground mark reported destroyed             -
 -       Z        Presumed destroyed                                          -
 -                                                                            -
 -                                                                            -
 -   NOTE - Stations found in this listing may still have a valid             -
 -          datasheet produced by use of other publishable values.           -
 -          For example, an ADJUSTED height may be non-publishable           -
 -          but a good GPS height might be found on the datasheet.           -
 -                                                                           -
 -          If a mark/control point is in a subsidence area, you can request -
 -          to see suspect heights in the SUPERSEDED SURVEY CONTROL section  -
 -          of its datasheet by checking the 'Include suspect heights in     -
 -          subsidence area' checkbox on the datasheet retrieval pages.      -
 -                                                                           -
 ------------------------------------------------------------------------------
```

```
 Pid    Name                          Lat        Lon        Elev      O o Hv
 ------ ----------------------------- ---------- ---------- --------- - - --
>JA0534 TBM 617.2 U                   38 20 06. /086 37 23.               TT
>KA0024 TBM 351                       39 40 01. /086 10 50.               TT
>LB1018 TBM 236 B                     40 40 06. /086 37 50.               TT
>RD0191 TBM 1 W                       45 12 14. /122 09 06.               TT
```

Issue #5: No CORS can be set by or recovered by anyone other than the CORS team/members. However, CORS that were "recovered" using the NGS Recovery page at http://ngs-vsu-io.ngs.noaa.gov/cgi-bin/recvy_entry_www.prl would end up displaying a Set (Date) that was a "recovered" date and also a Set_By (Agency) of the agency that "recovered" the mark/control point. With this latest get_mark_list V2.28.5 program, any mark/control point that is a CORS will no longer display a "recovery" date or the agency it was "recovered" by in the output.

Steps:

(1) Go to https://test.nosngs.noaa/cgi-bin/ds_pid.prl, enter

```
AF9513
AF9536
AF9579
AF9594
AM7017
AW5607
DE8088
DF6318
DG6513
DI2224
```

into the PID box, and press the *[Submit]* button.

You should see the following output in the get_mark_list output:

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
|....|AF9513|....|......|0 .|...........|N341805.40400|W1080708.09562|D...|G|PIETOWN CORS
MONUMENT
|....|AF9536|....|......|0 k|88/GPS OBS.|N324532.49950|W0970336.99046|....|G|ARLINGTON RRP
CORS ARP
|....|AF9579|....|......|0 k|88/GPS OBS.|N340638.34519|W0941723.60553|....|G|DEQUEEN 1 CORS
ARP
|....|AF9594|....|......|0 .|...........|N344150.59984|W0764059.22274|....|G|FORT MACON 1
CORS ARP
|....|AM7017|....|......|0 1|88/ADJUSTED|N424025.95225|W0843947.88445|B...|G|LANSING CORS ARP
|....|AW5607|....|......|0 k|88/GPS OBS.|N294645.89203|W0952558.74040|....|G|HOUSTON RRP CORS
L1 PHASE CENTER
|....|DE8088|....|......|A k|88/GPS OBS.|N414743.92516|W0875139.57042|....|G|KARA CO COOP
CORS ARP
|....|DF6318|....|......|0 k|88/GPS OBS.|N350721.25422|W0805458.46768|....|G|I77 WELCOME CNTR
CORS ARP
|....|DG6513|....|......|0 k|88/GPS OBS.|N332930.46340|W1115521.44778|....|G|CNTR FOR ARTS
CORS ARP
|....|DI2224|....|......|0 2|88/ADJUSTED|N344237.12915|W0873945.73609|D...|G|ALDOT 2 DIV OFF
CORS ARP
```

Prior to this, the user would have seen the below output:

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
```

```
|....|AF9513|1992|JPL...|0 .|...........|N341805.40400|W1080708.09562|D...|G|PIETOWN CORS
MONUMENT
|....|AF9536|2006|GEOCAC|0 k|88/GPS OBS.|N324532.49950|W0970336.99046|....|G|ARLINGTON RRP
CORS ARP
|....|AF9579|2007|PB....|0 k|88/GPS OBS.|N340638.34519|W0941723.60553|....|G|DEQUEEN 1 CORS
ARP
|....|AF9594|2004|USPSQD|0 .|...........|N344150.59984|W0764059.22274|....|G|FORT MACON 1
CORS ARP
|....|AM7017|2005|GEOCAC|0 1|88/ADJUSTED|N424025.95225|W0843947.88445|B...|G|LANSING CORS ARP
|....|AW5607|1996|TXDOT.|0 k|88/GPS OBS.|N294645.89203|W0952558.74040|....|G|HOUSTON RRP CORS
L1 PHASE CENTER
|....|DE8088|2006|GEOCAC|A k|88/GPS OBS.|N414743.92516|W0875139.57042|....|G|KARA CO COOP
CORS ARP
|....|DF6318|2005|USPSQD|0 k|88/GPS OBS.|N350721.25422|W0805458.46768|....|G|I77 WELCOME CNTR
CORS ARP
|....|DG6513|2007|USPSQD|0 k|88/GPS OBS.|N332930.46340|W1115521.44778|....|G|CNTR FOR ARTS
CORS ARP
|....|DI2224|2006|LOCENG|0 2|88/ADJUSTED|N344237.12915|W0873945.73609|D...|G|ALDOT 2 DIV OFF
CORS ARP
```

Version 8.12.5 updated on 06/05/2018

In this version of datasheet95 V8.12.5, the algorithm for how we select the best height was updated to accommodate changes in how NGS is receiving/processing the data. There were 69 US states/territories and 1,560,625 marks examined. Of these, 4,129 marks were identified as potentially displaying a different best height on their datasheets. In actuality, only 150 of these 4,129 marks actually changed their best height on their datasheet. Below is a table showing the breakdown by state of the potential and actual marks affected by this algorithm change.

Table 1
Marks in the US States/Territories Affected By The New Best Height Algorithm

STATE	STATE_NAME	DATUM	Total # of Marks in State	Potentially Affected by new Best Height Algorithm	Actually Affected by new Best Height Algorithm	% Affected
AK	ALASKA	88	59,377	0	0	0.0000%
AL	ALABAMA	88	28,718	62	3	0.0104%
AR	ARKANSAS	88	27,447	0	0	0.0000%
AS	AMERICAN SAMOA	AS	537	0	0	0.0000%
AZ	ARIZONA	88	37,880	36	2	0.0053%
BQ	NAVASSA ISLAND	LT	14	0	0	0.0000%
CA	CALIFORNIA	88	147,813	48	4	0.0027%
CO	COLORADO	88	26,466	2	0	0.0000%
CQ	PROVINCE OF NORTHERN MARIANA ISLANDS	NM	370	53	1	0.2703%
CT	CONNECTICUT	88	12,981	0	0	0.0000%
DC	DISTRICT OF COLUMBIA	88	1,834	0	0	0.0000%
DE	DELAWARE	88	3,330	2	0	0.0000%
FL	FLORIDA	88	79,604	1,663	24	0.0301%
FQ	KINGMAN REEF	N/A	0	0	0	0.0000%
GA	GEORGIA	88	39,310	1	1	0.0025%
GU	GUAM	GU	606	1	0	0.0000%

HI	HAWAII	LT	6,374	0	0	0.0000%
HQ	HOWLAND ISLAND	N/A	0	0	0	0.0000%
IA	IOWA	88	13,648	0	0	0.0000%
ID	IDAHO	88	29,144	1	0	0.0000%
IL	ILLINOIS	88	27,835	9	1	0.0036%
IN	INDIANA	88	22,774	3	0	0.0000%
IQ	JARVIS ISLAND	N/A	0	0	0	0.0000%
JQ	JOHNSTON ATOLL	LT	81	0	0	0.0000%
KQ	BAKER ISLAND	N/A	0	0	0	0.0000%
KS	KANSAS	88	23,256	0	0	0.0000%
KY	KENTUCKY	88	25,547	12	0	0.0000%
LA	LOUISIANA	88	38,993	270	8	0.0205%
LQ	PALMYRA ATOLL	N/A	0	0	0	0.0000%
MA	MASSACHUSETTS	88	12,503	0	0	0.0000%
MD	MARYLAND	88	23,184	4	0	0.0000%
ME	MAINE	88	21,357	0	0	0.0000%
MI	MICHIGAN	88	24,036	39	2	0.0083%
MN	MINNESOTA	88	59,791	661	35	0.0585%
MO	MISSOURI	88	24,976	20	0	0.0000%
MQ	MIDWAY ISLANDS	LT	112	0	0	0.0000%
MS	MISSISSIPPI	88	24,283	208	10	0.0412%
MT	MONTANA	88	36,169	5	0	0.0000%
NC	NORTH CAROLINA	88	56,767	107	23	0.0405%
ND	NORTH DAKOTA	88	26,306	0	0	0.0000%
NE	NEBRASKA	88	21,413	2	0	0.0000%
NH	NEW HAMPSHIRE	88	3,539	0	0	0.0000%
NJ	NEW JERSEY	88	13,448	6	0	0.0000%
NM	NEW MEXICO	88	28,733	0	0	0.0000%
NV	NEVADA	88	27,513	1	0	0.0000%
NY	NEW YORK	88	46,467	1	0	0.0000%
OH	OHIO	88	25,261	1	0	0.0000%
OK	OKLAHOMA	88	15,905	0	0	0.0000%
OR	OREGON	88	40,617	0	0	0.0000%
PA	PENNSYLVANIA	88	28,925	0	0	0.0000%
PR	PUERTO RICO	LT	2,659	0	0	0.0000%
RI	RHODE ISLAND	88	3,852	0	0	0.0000%
SC	SOUTH CAROLINA	88	28,398	144	4	0.0141%
SD	SOUTH DAKOTA	88	24,124	0	0	0.0000%
TN	TENNESSEE	88	23,957	36	0	0.0000%
TX	TEXAS	88	95,311	575	32	0.0336%
UM	MINOR OUTLYING ISLANDS	N/A	0	0	0	0.0000%
UT	UTAH	88	17,699	2	0	0.0000%
VA	VIRGINIA	88	40,549	23	0	0.0000%

VQ	US VIRGIN ISLANDS	88	626	0	0	0.0000%
VT	VERMONT	88	5,799	9	0	0.0000%
WA	WASHINGTON	88	45,620	25	0	0.0000%
WI	WISCONSIN	88	23,349	97	0	0.0000%
WQ	WAKE ISLAND	LT	41	0	0	0.0000%
WV	WEST VIRGINIA	88	16,242	0	0	0.0000%
WY	WYOMING	88	17,155	0	0	0.0000%
	TOTALS		1,560,625	4,129	150	0.0096%

Table 2 shows the list of the States and PIDs that *actually* are affected.

Table 2
Affected States & PIDs

State	PID
AL	AB3306, AB3310, BH1561
AZ	GP0178, GQ0054
CQ	DG3982
FL	AB5487, AF0476, AF7410, AJ6629, AJ6643, AJ6647, AJ6687, AJ6689, AL7872, AL7876, AL8027, AQ0346, AQ2646, BG1750, BG3613, BG3614, BG3640, DF6708, DF6717, DI7517, DI7519, DI7607, DI7623, DI9228
GA	AI8598
IL	MF1778
LA	AU3276, AU3543, AU3544, BJ0001, BJ0052, BJ0196, BJ1400, BW0055
MI	DI6132, NE0983
MN	AB2420, AB9908, AB9930, AB9936, AB9943, AB9948, AB9949, AB9982, AB9997, AC4901, AC4993, AE6896, AJ4402, AJ8924, DE6518, DH9102, DK6315, DM4991, DO7885, DO8117, DP5780, DP5915, DP5919, DP5937, DP5940, DP5945, ON0922, OO0510, PP0679, QP1712, RO0886, RO0981, RO1226, TD0965, WA0165
MS	BH2532, BH2999, BV0475, BV0984, BV1123, BV1335, BV1717, BV1824 BW1978, CO1081
NC	AJ5600, AJ5602, DG4388, DG4391, DG5682, DG5723, DG8921, DL3991, DL9706, DL9707, DL9708, DL9709, DL9710, DN8741, FA2477, FA2478, FA2594, FA4518, FA4520, FA4523, FA4542, FA4613, FA4790
SC	AE2748, AI7195, CK4309, DE7966

The "ORTHO HEIGHT –" lines for these 150 datasheets in the new release for datasheet95 V8.12.5 show:

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AB2420* NAVD 88 ORTHO HEIGHT -   382.87  (meters)     1256.1   (feet) GPS OBS
AB3206* NAVD 88 ORTHO HEIGHT -   159.92  (meters)      524.7   (feet) GPS OBS
AB3306* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AB3310* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AB5487* NAVD 88 ORTHO HEIGHT -    21.51  (meters)       70.6   (feet) GPS OBS
AB9908* NAVD 88 ORTHO HEIGHT -   343.43  (meters)     1126.7   (feet) GPS OBS
AB9930* NAVD 88 ORTHO HEIGHT -   358.34  (meters)     1175.7   (feet) GPS OBS
AB9936* NAVD 88 ORTHO HEIGHT -   346.81  (meters)     1137.8   (feet) GPS OBS
AB9943* NAVD 88 ORTHO HEIGHT -   240.73  (meters)      789.8   (feet) GPS OBS
AB9948* NAVD 88 ORTHO HEIGHT -   323.05  (meters)     1059.9   (feet) GPS OBS
AB9949* NAVD 88 ORTHO HEIGHT -   343.68  (meters)     1127.6   (feet) GPS OBS
AB9982* NAVD 88 ORTHO HEIGHT -   417.65  (meters)     1370.2   (feet) GPS OBS
AB9997* NAVD 88 ORTHO HEIGHT -   395.65  (meters)     1298.1   (feet) GPS OBS
AC4901* NAVD 88 ORTHO HEIGHT -   325.61  (meters)     1068.3   (feet) GPS OBS
AC4993* NAVD 88 ORTHO HEIGHT -   193.00  (meters)      633.2   (feet) GPS OBS
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AC5706* NAVD 88 ORTHO HEIGHT -   161.34  (meters)      529.3   (feet) GPS OBS
AC5707* NAVD 88 ORTHO HEIGHT -   159.18  (meters)      522.2   (feet) GPS OBS
AE2748* NAVD 88 ORTHO HEIGHT -     4.55  (meters)       14.9   (feet) GPS OBS
AE6896* NAVD 88 ORTHO HEIGHT -   277.71  (meters)      911.1   (feet) GPS OBS
AF0476* NAVD 88 ORTHO HEIGHT -    38.88  (meters)      127.6   (feet) GPS OBS
AF7410* NAVD 88 ORTHO HEIGHT -    17.48  (meters)       57.3   (feet) GPS OBS
AI7195* NAVD 88 ORTHO HEIGHT -     2.49  (meters)        8.2   (feet) GPS OBS
AI8598* NAVD 88 ORTHO HEIGHT -     2.84  (meters)        9.3   (feet) GPS OBS
AJ4402* NAVD 88 ORTHO HEIGHT -   349.70  (meters)     1147.3   (feet) GPS OBS
AJ5600* NAVD 88 ORTHO HEIGHT -   497.25  (meters)     1631.4   (feet) GPS OBS
AJ5602* NAVD 88 ORTHO HEIGHT -   487.73  (meters)     1600.2   (feet) GPS OBS
AJ6629* NAVD 88 ORTHO HEIGHT -    18.60  (meters)       61.0   (feet) GPS OBS
AJ6643* NAVD 88 ORTHO HEIGHT -    17.18  (meters)       56.4   (feet) GPS OBS
AJ6647* NAVD 88 ORTHO HEIGHT -    16.50  (meters)       54.1   (feet) GPS OBS
AJ6687* NAVD 88 ORTHO HEIGHT -    16.49  (meters)       54.1   (feet) GPS OBS
AJ6689* NAVD 88 ORTHO HEIGHT -    15.97  (meters)       52.4   (feet) GPS OBS
AJ8924* NAVD 88 ORTHO HEIGHT -   343.69  (meters)     1127.6   (feet) GPS OBS
AL7872* NAVD 88 ORTHO HEIGHT -    12.07  (meters)       39.6   (feet) GPS OBS
AL7876* NAVD 88 ORTHO HEIGHT -    24.65  (meters)       80.9   (feet) GPS OBS
AL8027* NAVD 88 ORTHO HEIGHT -    25.74  (meters)       84.4   (feet) GPS OBS
AQ0346* NAVD 88 ORTHO HEIGHT -     3.01  (meters)        9.9   (feet) GPS OBS
AQ2646* NAVD 88 ORTHO HEIGHT -    20.74  (meters)       68.0   (feet) GPS OBS
AU3276* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
AU3543* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
AU3544* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
AW0215* NAVD 88 ORTHO HEIGHT -    14.49  (meters)       47.5   (feet) GPS OBS
AW0222* NAVD 88 ORTHO HEIGHT -    17.18  (meters)       56.4   (feet) GPS OBS
AW0332* NAVD 88 ORTHO HEIGHT -    15.76  (meters)       51.7   (feet) GPS OBS
AW5568* NAVD 88 ORTHO HEIGHT -    21.95  (meters)       72.0   (feet) GPS OBS
AW5609* NAVD 88 ORTHO HEIGHT -    14.01  (meters)       46.0   (feet) GPS OBS
AW5634* NAVD 88 ORTHO HEIGHT -    21.41  (meters)       70.2   (feet) GPS OBS
BG1750* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BG3613* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BG3614* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BG3640* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BH1561* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BH2532* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BH2999* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BJ0001* NAVD 88 ORTHO HEIGHT -    15.84  (meters)       52.0   (feet) GPS OBS
BJ0052* NAVD 88 ORTHO HEIGHT -    10.65  (meters)       34.9   (feet) GPS OBS
BJ0196* NAVD 88 ORTHO HEIGHT -    11.54  (meters)       37.9   (feet) GPS OBS
BJ1400* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV0475* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV0984* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV1123* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV1335* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV1717* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BV1824* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
BW0055* NAVD 88 ORTHO HEIGHT -    14.32  (meters)       47.0   (feet) GPS OBS
BW1978* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
CK4309* NAVD 88 ORTHO HEIGHT -    12.83  (meters)       42.1   (feet) GPS OBS
CO1081* NAVD 88 ORTHO HEIGHT -          **(meters)            **(feet) NOT PUB
DE6518* NAVD 88 ORTHO HEIGHT -   357.70  (meters)     1173.6   (feet) GPS OBS
DE7966* NAVD 88 ORTHO HEIGHT -   236.12  (meters)      774.7   (feet) GPS OBS
DF6708* NAVD 88 ORTHO HEIGHT -    23.50  (meters)       77.1   (feet) GPS OBS
DF6717* NAVD 88 ORTHO HEIGHT -    15.69  (meters)       51.5   (feet) GPS OBS
DG3982* NMVD03  ORTHO HEIGHT -    65.65  (meters)      215.4   (feet) GPS OBS
DG4388* NAVD 88 ORTHO HEIGHT -   644.74  (meters)     2115.3   (feet) GPS OBS
DG4391* NAVD 88 ORTHO HEIGHT -   665.88  (meters)     2184.6   (feet) GPS OBS
DG5682* NAVD 88 ORTHO HEIGHT -   210.51  (meters)      690.6   (feet) GPS OBS
DG5723* NAVD 88 ORTHO HEIGHT -   254.94  (meters)      836.4   (feet) GPS OBS
DG8921* NAVD 88 ORTHO HEIGHT -     1.78  (meters)        5.8   (feet) GPS OBS
DH9102* NAVD 88 ORTHO HEIGHT -   342.45  (meters)     1123.5   (feet) GPS OBS
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DI6132* NAVD 88 ORTHO HEIGHT - 185.46 (meters) 608.5 (feet) GPS OBS
DI7517* NAVD 88 ORTHO HEIGHT - 1.52 (meters) 5.0 (feet) GPS OBS
DI7519* NAVD 88 ORTHO HEIGHT - 28.94 (meters) 94.9 (feet) GPS OBS
DI7607* NAVD 88 ORTHO HEIGHT - 25.36 (meters) 83.2 (feet) GPS OBS
DI7623* NAVD 88 ORTHO HEIGHT - 12.56 (meters) 41.2 (feet) GPS OBS
DI9228* NAVD 88 ORTHO HEIGHT - 6.68 (meters) 21.9 (feet) GPS OBS
DK6315* NAVD 88 ORTHO HEIGHT - 302.92 (meters) 993.8 (feet) GPS OBS
DL3991* NAVD 88 ORTHO HEIGHT - 50.24 (meters) 164.8 (feet) GPS OBS
DL9706* NAVD 88 ORTHO HEIGHT - 482.86 (meters) 1584.2 (feet) GPS OBS
DL9707* NAVD 88 ORTHO HEIGHT - 508.94 (meters) 1669.7 (feet) GPS OBS
DL9708* NAVD 88 ORTHO HEIGHT - 522.72 (meters) 1715.0 (feet) GPS OBS
DL9709* NAVD 88 ORTHO HEIGHT - 495.93 (meters) 1627.1 (feet) GPS OBS
DL9710* NAVD 88 ORTHO HEIGHT - 478.20 (meters) 1568.9 (feet) GPS OBS
DM4991* NAVD 88 ORTHO HEIGHT - 304.08 (meters) 997.6 (feet) GPS OBS
DN7645* NAVD 88 ORTHO HEIGHT - 177.95 (meters) 583.8 (feet) GPS OBS
DN7652* NAVD 88 ORTHO HEIGHT - 1.22 (meters) 4.0 (feet) GPS OBS
DN7654* NAVD 88 ORTHO HEIGHT - 177.36 (meters) 581.9 (feet) GPS OBS
DN7656* NAVD 88 ORTHO HEIGHT - 134.35 (meters) 440.8 (feet) GPS OBS
DN7657* NAVD 88 ORTHO HEIGHT - 113.36 (meters) 371.9 (feet) GPS OBS
DN7676* NAVD 88 ORTHO HEIGHT - 107.62 (meters) 353.1 (feet) GPS OBS
DN7683* NAVD 88 ORTHO HEIGHT - 129.10 (meters) 423.6 (feet) GPS OBS
DN7702* NAVD 88 ORTHO HEIGHT - 114.26 (meters) 374.9 (feet) GPS OBS
DN7710* NAVD 88 ORTHO HEIGHT - 134.90 (meters) 442.6 (feet) GPS OBS
DN7723* NAVD 88 ORTHO HEIGHT - 153.35 (meters) 503.1 (feet) GPS OBS
DN7724* NAVD 88 ORTHO HEIGHT - 135.38 (meters) 444.2 (feet) GPS OBS
DN7748* NAVD 88 ORTHO HEIGHT - 123.02 (meters) 403.6 (feet) GPS OBS
DN7755* NAVD 88 ORTHO HEIGHT - 124.25 (meters) 407.6 (feet) GPS OBS
DN7761* NAVD 88 ORTHO HEIGHT - 166.79 (meters) 547.2 (feet) GPS OBS
DN7771* NAVD 88 ORTHO HEIGHT - 113.78 (meters) 373.3 (feet) GPS OBS
DN7772* NAVD 88 ORTHO HEIGHT - 105.31 (meters) 345.5 (feet) GPS OBS
DN7778* NAVD 88 ORTHO HEIGHT - 126.22 (meters) 414.1 (feet) GPS OBS
DN7780* NAVD 88 ORTHO HEIGHT - 89.88 (meters) 294.9 (feet) GPS OBS
DN7793* NAVD 88 ORTHO HEIGHT - 143.34 (meters) 470.3 (feet) GPS OBS
DN7814* NAVD 88 ORTHO HEIGHT - 135.06 (meters) 443.1 (feet) GPS OBS
DN7820* NAVD 88 ORTHO HEIGHT - 155.99 (meters) 511.8 (feet) GPS OBS
DN7821* NAVD 88 ORTHO HEIGHT - 129.86 (meters) 426.0 (feet) GPS OBS
DN7827* NAVD 88 ORTHO HEIGHT - 162.66 (meters) 533.7 (feet) GPS OBS
DN8741* NAVD 88 ORTHO HEIGHT - 14.18 (meters) 46.5 (feet) GPS OBS
DO7885* NAVD 88 ORTHO HEIGHT - 230.79 (meters) 757.2 (feet) GPS OBS
DO8117* NAVD 88 ORTHO HEIGHT - 333.58 (meters) 1094.4 (feet) GPS OBS
DP5780* NAVD 88 ORTHO HEIGHT - 389.98 (meters) 1279.5 (feet) GPS OBS
DP5915* NAVD 88 ORTHO HEIGHT - 387.02 (meters) 1269.7 (feet) GPS OBS
DP5919* NAVD 88 ORTHO HEIGHT - 399.70 (meters) 1311.3 (feet) GPS OBS
DP5937* NAVD 88 ORTHO HEIGHT - 377.86 (meters) 1239.7 (feet) GPS OBS
DP5940* NAVD 88 ORTHO HEIGHT - 398.30 (meters) 1306.8 (feet) GPS OBS
DP5945* NAVD 88 ORTHO HEIGHT - 398.62 (meters) 1307.8 (feet) GPS OBS
FA2477* NAVD 88 ORTHO HEIGHT - 175.98 (meters) 577.4 (feet) GPS OBS
FA2478* NAVD 88 ORTHO HEIGHT - 175.00 (meters) 574.1 (feet) GPS OBS
FA2594* NAVD 88 ORTHO HEIGHT - 210.85 (meters) 691.8 (feet) GPS OBS
FA4518* NAVD 88 ORTHO HEIGHT - 237.09 (meters) 777.9 (feet) GPS OBS
FA4520* NAVD 88 ORTHO HEIGHT - 237.81 (meters) 780.2 (feet) GPS OBS
FA4523* NAVD 88 ORTHO HEIGHT - 248.38 (meters) 814.9 (feet) GPS OBS
FA4542* NAVD 88 ORTHO HEIGHT - 217.77 (meters) 714.5 (feet) GPS OBS
FA4613* NAVD 88 ORTHO HEIGHT - 234.87 (meters) 770.6 (feet) GPS OBS
FA4790* NAVD 88 ORTHO HEIGHT - 293.06 (meters) 961.5 (feet) GPS OBS
GP0178* NAVD 88 ORTHO HEIGHT - 2201.33 (meters) 7222.2 (feet) GPS OBS
GQ0054* NAVD 88 ORTHO HEIGHT - 2092.06 (meters) 6863.7 (feet) GPS OBS
MF1778* NAVD 88 ORTHO HEIGHT - 241.87 (meters) 793.5 (feet) GPS OBS
NE0983* NAVD 88 ORTHO HEIGHT - 232.79 (meters) 763.7 (feet) GPS OBS
ON0922* NAVD 88 ORTHO HEIGHT - 373.34 (meters) 1224.9 (feet) GPS OBS
OO0510* NAVD 88 ORTHO HEIGHT - 386.18 (meters) 1267.0 (feet) GPS OBS
PP0679* NAVD 88 ORTHO HEIGHT - 311.60 (meters) 1022.3 (feet) GPS OBS
QP1712* NAVD 88 ORTHO HEIGHT - 322.73 (meters) 1058.8 (feet) GPS OBS

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RO0886* NAVD 88 ORTHO HEIGHT -   407.50  (meters)     1336.9   (feet) GPS OBS
RO0981* NAVD 88 ORTHO HEIGHT -   413.12  (meters)     1355.4   (feet) GPS OBS
RO1226* NAVD 88 ORTHO HEIGHT -   425.69  (meters)     1396.6   (feet) GPS OBS
TD0965* NAVD 88 ORTHO HEIGHT -   315.67  (meters)     1035.7   (feet) GPS OBS
WA0165* NAVD 88 ORTHO HEIGHT -   242.29  (meters)      794.9   (feet) GPS OBS
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The "ORTHO HEIGHT –" lines for these 150 datasheets in the prior release (datasheet95 V8.12.4.1) showed:

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AB2420* NAVD 88 ORTHO HEIGHT -   382.801 (meters)     1255.91  (feet) ADJUSTED
AB3206* NAVD 88 ORTHO HEIGHT -   159.927 (meters)      524.69  (feet) ADJUSTED
AB3306* NAVD 88 ORTHO HEIGHT -     3.283 (meters)       10.77  (feet) ADJUSTED
AB3310* NAVD 88 ORTHO HEIGHT -     3.306 (meters)       10.85  (feet) ADJUSTED
AB5487* NAVD 88 ORTHO HEIGHT -    21.499 (meters)       70.53  (feet) ADJUSTED
AB9908* NAVD 88 ORTHO HEIGHT -   343.413 (meters)     1126.68  (feet) ADJUSTED
AB9930* NAVD 88 ORTHO HEIGHT -   358.321 (meters)     1175.59  (feet) ADJUSTED
AB9936* NAVD 88 ORTHO HEIGHT -   346.798 (meters)     1137.79  (feet) ADJUSTED
AB9943* NAVD 88 ORTHO HEIGHT -   240.737 (meters)      789.82  (feet) ADJUSTED
AB9948* NAVD 88 ORTHO HEIGHT -   323.005 (meters)     1059.73  (feet) ADJUSTED
AB9949* NAVD 88 ORTHO HEIGHT -   343.635 (meters)     1127.41  (feet) ADJUSTED
AB9982* NAVD 88 ORTHO HEIGHT -   417.646 (meters)     1370.23  (feet) ADJUSTED
AB9997* NAVD 88 ORTHO HEIGHT -   395.653 (meters)     1298.07  (feet) ADJUSTED
AC4901* NAVD 88 ORTHO HEIGHT -   325.610 (meters)     1068.27  (feet) ADJUSTED
AC4993* NAVD 88 ORTHO HEIGHT -   192.958 (meters)      633.06  (feet) ADJUSTED
AC5706* NAVD 88 ORTHO HEIGHT -   161.347 (meters)      529.35  (feet) ADJUSTED
AC5707* NAVD 88 ORTHO HEIGHT -   159.190 (meters)      522.28  (feet) ADJUSTED
AE2748* NAVD 88 ORTHO HEIGHT -     4.529 (meters)       14.86  (feet) ADJUSTED
AE6896* NAVD 88 ORTHO HEIGHT -   277.717 (meters)      911.14  (feet) ADJUSTED
AF0476* NAVD 88 ORTHO HEIGHT -    38.915 (meters)      127.67  (feet) ADJUSTED
AF7410* NAVD 88 ORTHO HEIGHT -    17.478 (meters)       57.34  (feet) ADJUSTED
AI7195* NAVD 88 ORTHO HEIGHT -     2.513 (meters)        8.24  (feet) ADJUSTED
AI8598* NAVD 88 ORTHO HEIGHT -     2.822 (meters)        9.26  (feet) ADJUSTED
AJ4402* NAVD 88 ORTHO HEIGHT -   349.698 (meters)     1147.30  (feet) ADJUSTED
AJ5600* NAVD 88 ORTHO HEIGHT -   497.244 (meters)     1631.37  (feet) ADJUSTED
AJ5602* NAVD 88 ORTHO HEIGHT -   487.719 (meters)     1600.12  (feet) ADJUSTED
AJ6629* NAVD 88 ORTHO HEIGHT -    18.600 (meters)       61.02  (feet) ADJUSTED
AJ6643* NAVD 88 ORTHO HEIGHT -    17.180 (meters)       56.36  (feet) ADJUSTED
AJ6647* NAVD 88 ORTHO HEIGHT -    16.504 (meters)       54.15  (feet) ADJUSTED
AJ6687* NAVD 88 ORTHO HEIGHT -    16.474 (meters)       54.05  (feet) ADJUSTED
AJ6689* NAVD 88 ORTHO HEIGHT -    15.949 (meters)       52.33  (feet) ADJUSTED
AJ8924* NAVD 88 ORTHO HEIGHT -   343.684 (meters)     1127.57  (feet) ADJUSTED
AL7872* NAVD 88 ORTHO HEIGHT -    12.054 (meters)       39.55  (feet) ADJUSTED
AL7876* NAVD 88 ORTHO HEIGHT -    24.619 (meters)       80.77  (feet) ADJUSTED
AL8027* NAVD 88 ORTHO HEIGHT -    25.703 (meters)       84.33  (feet) ADJUSTED
AQ0346* NAVD 88 ORTHO HEIGHT -     3.069 (meters)       10.07  (feet) ADJUSTED
AQ2646* NAVD 88 ORTHO HEIGHT -    20.741 (meters)       68.05  (feet) ADJUSTED
AU3276* NAVD 88 ORTHO HEIGHT -     1.821 (meters)        5.97  (feet) ADJUSTED
AU3543* NAVD 88 ORTHO HEIGHT -     1.289 (meters)        4.23  (feet) ADJUSTED
AU3544* NAVD 88 ORTHO HEIGHT -     1.422 (meters)        4.67  (feet) ADJUSTED
AW0215* NAVD 88 ORTHO HEIGHT -    14.526 (meters)       47.66  (feet) ADJUSTED
AW0222* NAVD 88 ORTHO HEIGHT -    17.163 (meters)       56.31  (feet) ADJUSTED
AW0332* NAVD 88 ORTHO HEIGHT -    15.776 (meters)       51.76  (feet) ADJUSTED
AW5568* NAVD 88 ORTHO HEIGHT -    21.956 (meters)       72.03  (feet) ADJUSTED
AW5609* NAVD 88 ORTHO HEIGHT -    14.018 (meters)       45.99  (feet) ADJUSTED
AW5634* NAVD 88 ORTHO HEIGHT -    21.461 (meters)       70.41  (feet) ADJUSTED
BG1750* NAVD 88 ORTHO HEIGHT -    28.262 (meters)       92.72  (feet) ADJUSTED
BG3613* NAVD 88 ORTHO HEIGHT -     3.359 (meters)       11.02  (feet) ADJUSTED
BG3614* NAVD 88 ORTHO HEIGHT -     3.348 (meters)       10.98  (feet) ADJUSTED
BG3640* NAVD 88 ORTHO HEIGHT -     3.519 (meters)       11.55  (feet) ADJUSTED
BH1561* NAVD 88 ORTHO HEIGHT -    45.597 (meters)      149.60  (feet) ADJUSTED
BH2532* NAVD 88 ORTHO HEIGHT -    97.742 (meters)      320.68  (feet) ADJUSTED
BH2999* NAVD 88 ORTHO HEIGHT -     4.777 (meters)       15.67  (feet) ADJUSTED
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BJ0001* NAVD 88 ORTHO HEIGHT - 15.80 (meters) 51.8 (feet) GPS OBS
BJ0052* NAVD 88 ORTHO HEIGHT - 10.55 (meters) 34.6 (feet) GPS OBS
BJ0196* NAVD 88 ORTHO HEIGHT - 11.42 (meters) 37.5 (feet) GPS OBS
BJ1400* NAVD 88 ORTHO HEIGHT - 2.824 (meters) 9.27 (feet) ADJUSTED
BV0475* NAVD 88 ORTHO HEIGHT - 74.592 (meters) 244.72 (feet) ADJUSTED
BV0984* NAVD 88 ORTHO HEIGHT - 89.325 (meters) 293.06 (feet) ADJUSTED
BV1123* NAVD 88 ORTHO HEIGHT - 58.117 (meters) 190.67 (feet) ADJUSTED
BV1335* NAVD 88 ORTHO HEIGHT - 28.222 (meters) 92.59 (feet) ADJUSTED
BV1717* NAVD 88 ORTHO HEIGHT - 146.053 (meters) 479.18 (feet) ADJUSTED
BV1824* NAVD 88 ORTHO HEIGHT - 50.808 (meters) 166.69 (feet) ADJUSTED
BW0055* NAVD 88 ORTHO HEIGHT - 14.28 (meters) 46.9 (feet) GPS OBS
BW1978* NAVD 88 ORTHO HEIGHT - 86.159 (meters) 282.67 (feet) ADJUSTED
CK4309* NAVD 88 ORTHO HEIGHT - 12.830 (meters) 42.09 (feet) ADJUSTED
CO1081* NAVD 88 ORTHO HEIGHT - 82.812 (meters) 271.69 (feet) ADJUSTED
DE6518* NAVD 88 ORTHO HEIGHT - 357.712 (meters) 1173.59 (feet) ADJUSTED
DE7966* NAVD 88 ORTHO HEIGHT - 236.040 (meters) 774.41 (feet) ADJUSTED
DF6708* NAVD 88 ORTHO HEIGHT - 23.528 (meters) 77.19 (feet) ADJUSTED
DF6717* NAVD 88 ORTHO HEIGHT - 15.681 (meters) 51.45 (feet) ADJUSTED
DG3982* NMVD03 ORTHO HEIGHT - 65.677 (meters) 215.48 (feet) ADJUSTED
DG4388* NAVD 88 ORTHO HEIGHT - 644.755 (meters) 2115.33 (feet) ADJUSTED
DG4391* NAVD 88 ORTHO HEIGHT - 665.886 (meters) 2184.66 (feet) ADJUSTED
DG5682* NAVD 88 ORTHO HEIGHT - 210.492 (meters) 690.59 (feet) ADJUSTED
DG5723* NAVD 88 ORTHO HEIGHT - 254.933 (meters) 836.39 (feet) ADJUSTED
DG8921* NAVD 88 ORTHO HEIGHT - 1.779 (meters) 5.84 (feet) ADJUSTED
DH9102* NAVD 88 ORTHO HEIGHT - 342.446 (meters) 1123.51 (feet) ADJUSTED
DI6132* NAVD 88 ORTHO HEIGHT - 185.457 (meters) 608.45 (feet) ADJUSTED
DI7517* NAVD 88 ORTHO HEIGHT - 1.526 (meters) 5.01 (feet) ADJUSTED
DI7519* NAVD 88 ORTHO HEIGHT - 28.925 (meters) 94.90 (feet) ADJUSTED
DI7607* NAVD 88 ORTHO HEIGHT - 25.389 (meters) 83.30 (feet) ADJUSTED
DI7623* NAVD 88 ORTHO HEIGHT - 12.614 (meters) 41.38 (feet) ADJUSTED
DI9228* NAVD 88 ORTHO HEIGHT - 6.648 (meters) 21.81 (feet) ADJUSTED
DK6315* NAVD 88 ORTHO HEIGHT - 302.935 (meters) 993.88 (feet) ADJUSTED
DL3991* NAVD 88 ORTHO HEIGHT - 50.234 (meters) 164.81 (feet) ADJUSTED
DL9706* NAVD 88 ORTHO HEIGHT - 482.847 (meters) 1584.14 (feet) ADJUSTED
DL9707* NAVD 88 ORTHO HEIGHT - 508.940 (meters) 1669.75 (feet) ADJUSTED
DL9708* NAVD 88 ORTHO HEIGHT - 522.721 (meters) 1714.96 (feet) ADJUSTED
DL9709* NAVD 88 ORTHO HEIGHT - 495.927 (meters) 1627.05 (feet) ADJUSTED
DL9710* NAVD 88 ORTHO HEIGHT - 478.202 (meters) 1568.90 (feet) ADJUSTED
DM4991* NAVD 88 ORTHO HEIGHT - 304.067 (meters) 997.59 (feet) ADJUSTED
DN7645* NAVD 88 ORTHO HEIGHT - 177.965 (meters) 583.87 (feet) ADJUSTED
DN7652* NAVD 88 ORTHO HEIGHT - 1.208 (meters) 3.96 (feet) ADJUSTED
DN7654* NAVD 88 ORTHO HEIGHT - 177.372 (meters) 581.93 (feet) ADJUSTED
DN7656* NAVD 88 ORTHO HEIGHT - 134.350 (meters) 440.78 (feet) ADJUSTED
DN7657* NAVD 88 ORTHO HEIGHT - 113.350 (meters) 371.88 (feet) ADJUSTED
DN7676* NAVD 88 ORTHO HEIGHT - 107.620 (meters) 353.08 (feet) ADJUSTED
DN7683* NAVD 88 ORTHO HEIGHT - 129.102 (meters) 423.56 (feet) ADJUSTED
DN7702* NAVD 88 ORTHO HEIGHT - 114.249 (meters) 374.83 (feet) ADJUSTED
DN7710* NAVD 88 ORTHO HEIGHT - 134.892 (meters) 442.56 (feet) ADJUSTED
DN7723* NAVD 88 ORTHO HEIGHT - 153.369 (meters) 503.18 (feet) ADJUSTED
DN7724* NAVD 88 ORTHO HEIGHT - 135.382 (meters) 444.17 (feet) ADJUSTED
DN7748* NAVD 88 ORTHO HEIGHT - 123.028 (meters) 403.63 (feet) ADJUSTED
DN7755* NAVD 88 ORTHO HEIGHT - 124.249 (meters) 407.64 (feet) ADJUSTED
DN7761* NAVD 88 ORTHO HEIGHT - 166.820 (meters) 547.31 (feet) ADJUSTED
DN7771* NAVD 88 ORTHO HEIGHT - 113.785 (meters) 373.31 (feet) ADJUSTED
DN7772* NAVD 88 ORTHO HEIGHT - 105.313 (meters) 345.51 (feet) ADJUSTED
DN7778* NAVD 88 ORTHO HEIGHT - 126.204 (meters) 414.05 (feet) ADJUSTED
DN7780* NAVD 88 ORTHO HEIGHT - 89.855 (meters) 294.80 (feet) ADJUSTED
DN7793* NAVD 88 ORTHO HEIGHT - 143.330 (meters) 470.24 (feet) ADJUSTED
DN7814* NAVD 88 ORTHO HEIGHT - 135.052 (meters) 443.08 (feet) ADJUSTED
DN7820* NAVD 88 ORTHO HEIGHT - 155.977 (meters) 511.73 (feet) ADJUSTED
DN7821* NAVD 88 ORTHO HEIGHT - 129.845 (meters) 426.00 (feet) ADJUSTED
DN7827* NAVD 88 ORTHO HEIGHT - 162.680 (meters) 533.73 (feet) ADJUSTED
DN8741* NAVD 88 ORTHO HEIGHT - 14.182 (meters) 46.53 (feet) ADJUSTED

```
DO7885* NAVD 88 ORTHO HEIGHT -   230.806 (meters)      757.24  (feet) ADJUSTED
DO8117* NAVD 88 ORTHO HEIGHT -   333.584 (meters)     1094.43  (feet) ADJUSTED
DP5780* NAVD 88 ORTHO HEIGHT -   389.983 (meters)     1279.47  (feet) ADJUSTED
DP5915* NAVD 88 ORTHO HEIGHT -   387.017 (meters)     1269.74  (feet) ADJUSTED
DP5919* NAVD 88 ORTHO HEIGHT -   399.686 (meters)     1311.30  (feet) ADJUSTED
DP5937* NAVD 88 ORTHO HEIGHT -   377.845 (meters)     1239.65  (feet) ADJUSTED
DP5940* NAVD 88 ORTHO HEIGHT -   398.287 (meters)     1306.71  (feet) ADJUSTED
DP5945* NAVD 88 ORTHO HEIGHT -   398.587 (meters)     1307.70  (feet) ADJUSTED
FA2477* NAVD 88 ORTHO HEIGHT -   175.969 (meters)      577.33  (feet) ADJUSTED
FA2478* NAVD 88 ORTHO HEIGHT -   174.989 (meters)      574.11  (feet) ADJUSTED
FA2594* NAVD 88 ORTHO HEIGHT -   210.851 (meters)      691.77  (feet) ADJUSTED
FA4518* NAVD 88 ORTHO HEIGHT -   237.096 (meters)      777.87  (feet) ADJUSTED
FA4520* NAVD 88 ORTHO HEIGHT -   237.818 (meters)      780.24  (feet) ADJUSTED
FA4523* NAVD 88 ORTHO HEIGHT -   248.387 (meters)      814.92  (feet) ADJUSTED
FA4542* NAVD 88 ORTHO HEIGHT -   217.726 (meters)      714.32  (feet) ADJUSTED
FA4613* NAVD 88 ORTHO HEIGHT -   234.874 (meters)      770.58  (feet) ADJUSTED
FA4790* NAVD 88 ORTHO HEIGHT -   293.092 (meters)      961.59  (feet) ADJUSTED
GP0178* NAVD 88 ORTHO HEIGHT -  2201.253 (meters)     7221.94  (feet) ADJUSTED
GQ0054* NAVD 88 ORTHO HEIGHT -  2091.918 (meters)     6863.23  (feet) ADJUSTED
MF1778* NAVD 88 ORTHO HEIGHT -   241.871 (meters)      793.54  (feet) ADJUSTED
NE0983* NAVD 88 ORTHO HEIGHT -   232.785 (meters)      763.73  (feet) ADJUSTED
ON0922* NAVD 88 ORTHO HEIGHT -   373.335 (meters)     1224.85  (feet) ADJUSTED
OO0510* NAVD 88 ORTHO HEIGHT -   386.098 (meters)     1266.72  (feet) ADJUSTED
PP0679* NAVD 88 ORTHO HEIGHT -   311.641 (meters)     1022.44  (feet) ADJUSTED
QP1712* NAVD 88 ORTHO HEIGHT -   322.701 (meters)     1058.73  (feet) ADJUSTED
RO0886* NAVD 88 ORTHO HEIGHT -   407.493 (meters)     1336.92  (feet) ADJUSTED
RO0981* NAVD 88 ORTHO HEIGHT -   413.149 (meters)     1355.47  (feet) ADJUSTED
RO1226* NAVD 88 ORTHO HEIGHT -   425.696 (meters)     1396.64  (feet) ADJUSTED
TD0965* NAVD 88 ORTHO HEIGHT -   315.644 (meters)     1035.58  (feet) ADJUSTED
WA0165* NAVD 88 ORTHO HEIGHT -   242.292 (meters)      794.92  (feet) ADJUSTED
```

Version 8.12.4.1 updated on 03/12/2018

The datasheet95 V8.12.4.1 was updated to correct an issue with generating the monthly (archived) state-wide datasheets. Duplicate datasheets were appearing in the output.

Version 8.12.4 updated on 01/25/2018

The datasheet95 V8.12.4 was updated to implement a security patch. Users should not notice any changes.

Version 8.12.3 updated on 09/12/2017

The Observation & Analysis Division (OAD) in NGS recently added a new elevation technique code of "E" (ELEV_TECH='E') to the NGS database to better describe this method of determining orthometric heights in AK as well as for future projects in other areas. The definition of the new "E" code is "OHT ESTABLISHED BY SUBTRACTING A GEOID_HT FROM AN ELLIP_HT". Data in the NGS database for this new elevation technique did not exist until very recently. In datasheet95 V8.12.2 an elevation with this new type of elevation technique, DM5205, was added to the NGS database. The ORTHOMETRIC HEIGHT line for this mark displayed "N-H COMP":

```
DM5205* NAVD 88 ORTHO HEIGHT -    48.53   (meters)      159.2    (feet) N-H COMP
```

When it should have displayed h-N COMP. This release of datasheet95 V8.12.3 corrects this to h-N COMP for marks that have an elevation technique of 'E', as shown in the example below:

```
DM5205* NAVD 88 ORTHO HEIGHT -    48.53   (meters)      159.2    (feet) h-N COMP
```

Version 8.12.2 updated on 07/19/2017

This release of datasheet95 V8.12.2 applies change requests, CM-268, CM-357, CM-410, and CM-411.

The change requests can be found in JIRA at:
https://euclid.ngs.noaa.gov/jira/browse/CM-268
https://euclid.ngs.noaa.gov/jira/browse/CM-357
https://euclid.ngs.noaa.gov/jira/browse/CM-410
https://euclid.ngs.noaa.gov/jira/browse/CM-411

CM-268: CORS coordinates (i.e. positions) whose coordinates are held fixed during a major readjustment, are considered to be duplicates of the best position for a mark. Because of this, the coordinates and matching ellipsoid height info are not normally printed in the SUPERSEDED SURVEY CONTROL section of the datasheet. Li Jian Sun of the CORS team had a single special case CORS whose previously held coordinate with matching ellipsoid height was needed on its datasheet for historical purposes. For CORS site TXDA (i.e. PID=DF8984), the SUPERSEDED SURVEY CONTROL section of its datasheet will now display the following lines in the SUPERSEDED SURVEY CONTROL section:

```
DF8984                          SUPERSEDED SURVEY CONTROL
DF8984
DF8984  NAD 83(2011)-  32 47 59.92785(N)    096 40 22.45344(W) AD(2010.00) c
DF8984  ELLIP H (09/??/14)  161.847  (m)                       GP(2010.00) c c
DF8984  NAD 83(2011)-  32 47 59.92724(N)    096 40 22.45331(W) AD(2010.00) c
DF8984  ELLIP H (08/??/11)  161.889  (m)                       GP(2010.00) c c
DF8984  NAD 83(CORS)-  32 47 59.92727(N)    096 40 22.45388(W) AD(2002.00) c
DF8984  ELLIP H (11/??/03)  161.907  (m)                       GP(2002.00) c c
DF8984
DF8984.Superseded values are not recommended for survey control.
DF8984
DF8984.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DF8984.See file dsdata.pdf to determine how the superseded data were derived.
```

CM-357: NGS is about to redo all the vertical in Alaska. Up until this time, NGS has been using the Horizontal GPS (i.e. ELEV_SOURCE='H' and ELEV_TECH='G') codes in the NGS database to obtain orthometric heights due to sparse leveling in lieu of a more accurate code. In this release of datasheet95 V8.12.2, the Observation & Analysis Division (OAD) in NGS has added a new elevation technique code of "E" (ELEV_TECH='E') to the NGS database to better describe this method of determining orthometric heights in AK as well as for future projects in other areas. The definition of the new "E" code is "OHT ESTABLISHED BY SUBTRACTING A GEOID_HT FROM AN ELLIP_HT".

For marks/control points that have this new elevation technique of "E", the following paragraph will be displayed on the datasheet:

```
<PID>.The orthometric height was established by subtracting the geoid height
<PID>.from an ellipsoid height for the control used in the least squares
<PID>.adjustment.
```

CM-410: Some scan_idb (i.e. in-house only) datasheets were not displaying all the GEOID_HT info on their datasheets. *This did not affect public datasheets whatsoever!*

If one goes to the internet URL https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl, puts in DL8768 and DM5173 for the PIDs and presses the [Submit] button, and then on the next page presses the [Select All] button followed by the [Get Datasheets] button, he/she will see public datasheets with the following lines:

```
DL8768  NAVD 88 orthometric height was determined with geoid model    GEOID09
DL8768  GEOID HEIGHT    -         -2.775 (meters)                     GEOID09
DL8768  GEOID HEIGHT    -         -2.807 (meters)                     GEOID12B
DL8768  NAD 83(2011) X  - -1,993,055.627 (meters)                     COMP
DL8768  NAD 83(2011) Y  -   -725,567.031 (meters)                     COMP
DL8768  NAD 83(2011) Z  -  5,994,982.948 (meters)                     COMP
DL8768  LAPLACE CORR    -         -8.19  (seconds)                    DEFLEC12B

DM5173  NAVD 88 orthometric height was determined with geoid model    GEOID09
DM5173  GEOID HEIGHT    -         -1.423 (meters)                     GEOID09
DM5173  GEOID HEIGHT    -         -1.368 (meters)                     GEOID12B
DM5173  NAD 83(2011) X  - -2,119,208.805 (meters)                     COMP
DM5173  NAD 83(2011) Y  -   -647,430.493 (meters)                     COMP
DM5173  NAD 83(2011) Z  -  5,960,788.929 (meters)                     COMP
DM5173  LAPLACE CORR    -          7.69  (seconds)                    DEFLEC12B
```

Prior to this release, if one retrieved a scan_idb datasheets for these same two marks via the intranet URL http://ngsweb.ngs.noaa.gov/cgi-bin/scan_idb_pid.prl, one would have seen scan_idb datasheets with the following lines:

```
DL8768  NAVD 88 orthometric height was determined with an earlier geoid model
DL8768  GEOID HEIGHT    -         -2.807 (meters)                     GEOID12B
DL8768  NAD 83(2011) X  - -1,993,055.627 (meters)                     COMP
DL8768  NAD 83(2011) Y  -   -725,567.031 (meters)                     COMP
DL8768  NAD 83(2011) Z  -  5,994,982.948 (meters)                     COMP
DL8768  LAPLACE CORR    -         -8.19  (seconds)                    DEFLEC12B


DM5173  NAVD 88 orthometric height was determined with an earlier geoid model
DM5173  GEOID HEIGHT    -         -1.368 (meters)                     GEOID12B
DM5173  NAD 83(2011) X  - -2,119,208.805 (meters)                     COMP
DM5173  NAD 83(2011) Y  -   -647,430.493 (meters)                     COMP
DM5173  NAD 83(2011) Z  -  5,960,788.929 (meters)                     COMP
DM5173  LAPLACE CORR    -          7.69  (seconds)                    DEFLEC12B
```

Notice on the scan_idb datasheet outputs that they are missing the lines:

```
DL8768  NAVD 88 orthometric height was determined with geoid model    GEOID09
DL8768  GEOID HEIGHT    -         -2.775 (meters)                     GEOID09

DM5173  NAVD 88 orthometric height was determined with geoid model    GEOID09
DM5173  GEOID HEIGHT    -         -1.423 (meters)                     GEOID09
```

They shouldn't have been missing these lines. This issue has been fixed with the datasheet95 V8.12.2 program update. If one goes to the intranet URL http://ngsweb.ngs.noaa.gov/cgi-bin/scan_idb_pid.prl, puts in PIDs DL8768 and DM5173 into the PID box, presses

the [Submit] button, and then on the next page presses the [Select All] button followed by the [Get Datasheets] button, he/she should see scan_idb datasheets with the following lines:

```
DL8768  NAVD 88 orthometric height was determined with geoid model    GEOID09
DL8768  GEOID HEIGHT    -         -2.775 (meters)                     GEOID09
DL8768  GEOID HEIGHT    -         -2.807 (meters)                     GEOID12B
DL8768  NAD 83(2011) X  - -1,993,055.627 (meters)                     COMP
DL8768  NAD 83(2011) Y  -   -725,567.031 (meters)                     COMP
DL8768  NAD 83(2011) Z  -  5,994,982.948 (meters)                     COMP
DL8768  LAPLACE CORR    -         -8.19  (seconds)                    DEFLEC12B

DM5173  NAVD 88 orthometric height was determined with geoid model    GEOID09
DM5173  GEOID HEIGHT    -         -1.423 (meters)                     GEOID09
DM5173  GEOID HEIGHT    -         -1.368 (meters)                     GEOID12B
DM5173  NAD 83(2011) X  - -2,119,208.805 (meters)                     COMP
DM5173  NAD 83(2011) Y  -   -647,430.493 (meters)                     COMP
DM5173  NAD 83(2011) Z  -  5,960,788.929 (meters)                     COMP
DM5173  LAPLACE CORR    -          7.69  (seconds)                    DEFLEC12B
```

CM-411: Geodesist Vasanthi Kammula added two projects to the list of valid projects in the Gulf Coast dynamic region/subsidence area:

(1) 00000729/3 with epoch 2009.55.
(2) 00000729/4 with epoch 2009.55.

Both of these projects are valid in the state of Mississippi (MS).

Below is the list of all the valid projects for the Gulf Coast dynamic region/subsidence area (new records are highlighted in green).

Project	Epoch
00000729/1	2009.55
00000729/2	2009.55
00000729/3	2009.55
00000729/4	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000730/5	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
00000803	2009.55
00000840	2009.55
00000857	2009.55
GPS2021/C	2004.65
GPS2100	2004.65
GPS2212	2004.65
GPS2262	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2329	2006.81
GPS2896/B	2009.55
GPS2896/C	2009.55
GPS2995	2009.55
GPS2995/B	2009.55

Additionally, below is a list of the valid project/state combinations within the Gulf Coast dynamic region/subsidence area (new records are highlighted in green).

Subsidence Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000729/3	MS
00000729/4	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000730/5	AL
00000730/5	MS
00000731	FL
00000732	TX
00000772	MS
00000803	MS
00000840	MS
00000857	FL
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL
GPS2995	LA
GPS2995/B	LA

Finally, below is a list of specific control points that are publishable in the Gulf Coast dynamic region/subsidence area (new records and a new column are highlighted in green).

UID	**PID**	**EPOCH**
10484553	BG1724	2009.55
10166440	BW0856	2009.55

The following PIDs are in the two new Gulf Coast dynamic region/subsidence area projects of 00000729/3, and 00000729/4:

AB7977
BV0683

```
BV0712
BV0736
BV1243
BV1947
DQ4508
DQ4509
DQ4510
DQ4511
DQ4512
DQ4513
DQ5128
DQ5129
DQ5130
DQ5131
DQ5132
DQ5133
DQ5134
DQ5135
DQ5136
DQ5137
DQ5138
```

All 23 of these PIDs/marks generate datasheets with publishable [ortho] heights and have an EPOCH of 2009.55

There are two additional PIDs that are publishable in the Gulf Coast dynamic region/subsidence area that are not in these two newly added projects. These PIDs are:

```
BG1724
BW0856
```

These exception PIDs should display a datasheet with a publishable ORTHO HEIGHT and have an EPOCH of 2009.55.

Some marks in the Gulf Coast dynamic region/subsidence area that were also part of the NSRS2007 readjustment, displayed datasheets where the superseded NSRS2007 position's epoch did not match the corresponding superseded ellip_ht's epoch. This can be seen in the example datasheet snippet for BK1020.

```
BK1020                          SUPERSEDED SURVEY CONTROL
BK1020
BK1020 NAD 83(2007)- 30 20 58.87746(N) 092 43 24.59536(W) AD(2002.00) A
BK1020 ELLIP H  (03/12/08) -15.646 (m) GP(2006.81) 3 1
```

This was happening because of the algorithm for the superseded positions in a dynamic region/subsidence area. Prior to this release of datasheet95 V8.12.2, the epoch on a superseded position on the datasheet displayed is 2002.00 instead of the epoch value (e.g. 2006.81) from the POS_CM (crustal motion) table if:

(1) the dtm_tag was "NAD 83(2007)"
(2) the state was not in (AK, AZ, CA, NV, OR, WA)

The updated algorithm now takes into account that the mark is in a dynamic region/subsidence area. Thus, the epoch on a superseded position on the datasheet displayed is 2002.00 instead of the epoch value from the POS_CM (crustal motion) table if:

(1) the dtm_tag is NAD 83(2007)

(2) the mark is not in a dynamic region/subsidence area

(3) the state is not in (AK, AZ, CA, NV, OR, WA)

This can be seen on the updated example datasheet (i.e. datasheet95 V 8.12.2) snippet for BK1020 below.

```
BK1020 SUPERSEDED SURVEY CONTROL
BK1020
BK1020 NAD 83(2007)- 30 20 58.87746(N) 092 43 24.59536(W) AD(2006.81) A
BK1020 ELLIP H (03/12/08) -15.646 (m) GP(2006.81) 3 1
```

Version 8.12.1 update on 03/29/2017

This release of datasheet95 V8.12.1 applies change request, CM384. This change request applies only to internal NGS only (scan_idb) datasheets, and not datasheets for the public/external users. There was a flag that was not turned off during the release of datasheet95 V8.12 for this internal version. This caused the message:

```
<PID> ** No published orthometric height exists and therefore all are
<PID> ** considered suspect. This station did not take part in a recent
<PID> ** survey which established orthometric heights in the area.  Therefore,
<PID> ** any previously published orthometric heights have not been validated.
<PID> ** NGS does not recommend using suspect or superseded heights as control
<PID> ** unless they can be validated or a new height established.
<PID> ** If this station were to take part in a new project and submitted
<PID> ** to NGS a new height could be published.
```

to be displayed on some datasheets when it shouldn't. In the message above, <PID> represents a PID value such as AI6623, AC6803, JV1374, etc. In this minor release, the flag has been turned off and this message will no longer appear on internal NGS only (scan_idb) datasheets.

Version 8.12 update on 03/06/2017

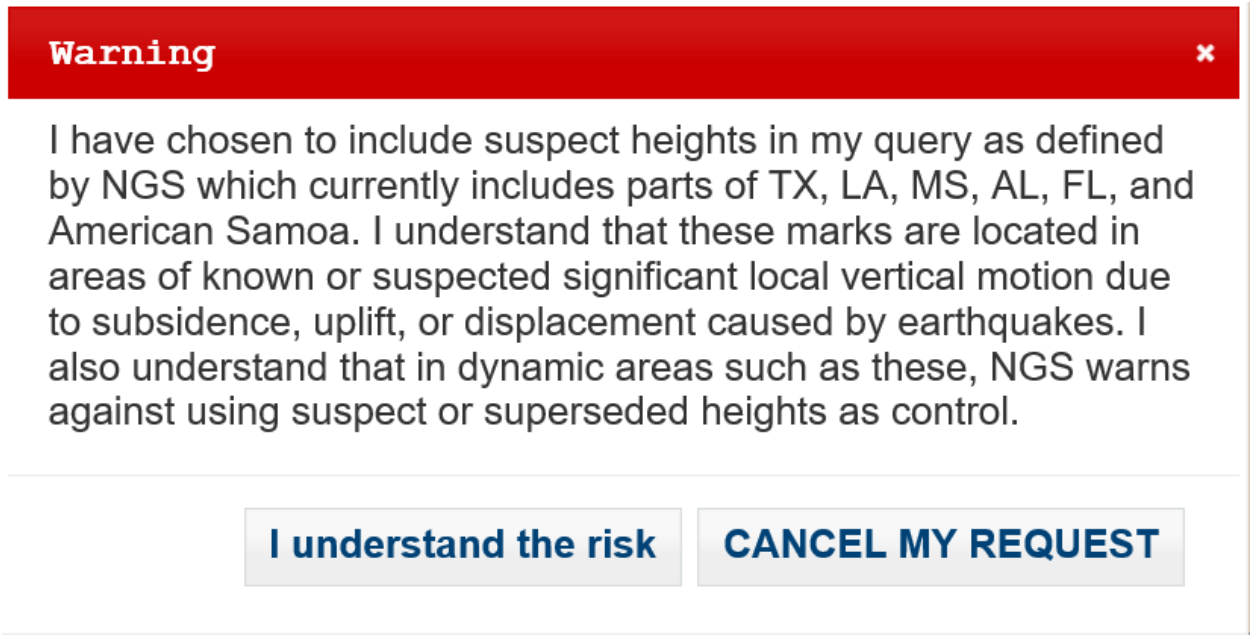
This release of datasheet95 V8.12 applies two change requests, CM-311, and CM-325, two tasks, TM-2624 and TM-2645, and one software request, IMSRQ-520.

CM-311 - Suspect heights in American Samoa: Make sure that these American Samoa PIDs display the following warning message whenever the *Include suspect heights* checkbox is checked on the various datasheet web retrieval pages and that the paragraph below also appears on American Samoa datasheets if a datasheet is generated.

Steps:

(1) Go to the datasheet web page https://www.ngs.noaa.gov/cgi-bin/ds_county.prl

(2) Select AMERICAN SAMOA from the *Pick a State:* drop down list box and press the [Get County List] button.
(3) On the next screen, select AS|010|EASTERN (DISTRICT) from the *Pick a County* drop down list box, check the Include suspect heights in vertical motion areas checkbox, leave all other defaults on the screen, and press the [Submit] button. You should see the Warning message below.



(4) Continuing on… press the [I understand the risk] button. A list of datasheets for the county selected will be displayed. Press the [Select All] button to select all of the marks from the listing and then press the [Get Datasheets] button.
(5) You should see the exact paragraphs on each AS datasheet (if a datasheet is produced).

```
<PID> ** The published heights of stations in this area may have changed
<PID> ** by more than 10 cm due to earthquakes.  NGS strongly warns
<PID> ** against the use of such suspect heights as control.
```

and

```
<PID> ** No published orthometric height exists and therefore all are
<PID> ** considered suspect. This station did not take part in a recent
<PID> ** survey which established orthometric heights in the area.  Therefore,
<PID> ** any previously published orthometric heights have not been validated.
<PID> ** NGS does not recommend using suspect or superseded heights as control
<PID> ** unless they can be validated or a new height established.
<PID> ** If this station were to take part in a new project and submitted
<PID> ** to NGS a new height could be published.
```

CM-312 - update DSData.txt file with new DSData file: On the datasheets any links to text with dsdata.txt on them have been replaced with dsdata.pdf.

IMSRQ-520 - datasheet95 contains wrong web link, Geoid 12B as opposed to EGM08:
Datasheets that use the EGM08 GEOID vs GEOID12B should not have the following text with hyperlink on the datasheet any longer:

```
<PID>.EGM08 height accuracy estimate available here.
```

Steps:

(1) Go to https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl and put the following PIDs into the PID List:

```
AA4435
AA4436
DQ2174
```

and then press the [Submit] button. These PIDs use the geoid model, EGM08.

(2) On the next screen, press the [Select All] button, and then press the [Get Datasheets] button.
(3) When the datasheets display, in your browser, search for "`EGM08 height accuracy estimate available`". You should not be able to find it.

TM-2624 - wrong SPCS code for HONOLULU TIDE GAU CORS ARP: Make sure that the primary SPC line does not display on datasheets for Hawaiian datasheets in Honolulu county that have a longitude > W1600000.

Steps:

(1) Go to https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl and put the following PIDs into the PID List:

```
DE5195
DE5202
DE5228
DE5231
DE5246
DE5247
DE5248
DE5249
```

and then press the [Submit] button.

(2) On the next screen, press the [Select All] button, and then press the [Get Datasheets] button.

(3) When the datasheets display, in your browser, search for "`North East`".

The datasheets should look like this (where no primary SPC line is displayed directly under the `DE5228; North East Units Scale Factor Converg.` line).

```
DE5228;                  North         East     Units Scale Factor Converg.
DE5228;UTM  03      - 2,768,189.132   197,290.902   MT  1.00073179   -1 16 05.9
DE5228;UTM  02      - 2,768,194.093   802,933.088   MT  1.00073347   +1 16 09.3
DE5228
DE5228!             -  Elev Factor  x  Scale Factor =   Combined Factor
DE5228!SPC HI 5     -   0.99998814  x   1.00775802  =   1.00774607
DE5228!UTM  03      -   0.99998814  x   1.00073179  =   1.00071992
DE5228!UTM  02      -   0.99998814  x   1.00073347  =   1.00072160
```

Previously, it looked like this:

```
DE5228;                  North         East     Units Scale Factor Converg.
DE5228;SPC HI 5     -   392,034.498 -,292,265.891   MT  1.00775802   -3 19 38.0
DE5228;UTM  03      - 2,768,189.132   197,290.902   MT  1.00073179   -1 16 05.9
DE5228;UTM  02      - 2,768,194.093   802,933.088   MT  1.00073347   +1 16 09.3
DE5228
DE5228!             -  Elev Factor  x  Scale Factor =   Combined Factor
DE5228!SPC HI 5     -   0.99998814  x   1.00775802  =   1.00774607
DE5228!UTM  03      -   0.99998814  x   1.00073179  =   1.00071992
DE5228!UTM  02      -   0.99998814  x   1.00073347  =   1.00072160
```

TM-2645 fix state/county codes for remote Hawaiian marks: Make sure that the scan_idb datasheets (i.e. in-house only NGS datasheets, not publicly publishable) for PIDs DE5211, DE5212, DE5213, and DE5229 show that they are in county 007. Also make sure that the scan_idb_datasheets for PIDs CQ9890, CQ9936, and TW0160 show that they are in the state of MQ and county 010.

Steps:

(1) Go to https://ngsweb.ngs.noaa.gov/cgi-bin/scan_idb_pid.prl and put the following PIDs into the PID List:

```
CQ9890
CQ9936
DE5211
DE5212
DE5213
DE5229
TW0160
```

and then press the [Submit] button.

(2) On the next screen, press the [Select All] button, and then press the [Get Datasheets] button.
(3) When the datasheets display, in your browser, search for "STATE/COUNTY- " on each datasheet. You should see the following lines.

```
CQ9890  STATE/COUNTY-  MQ/MIDWAY
CQ9936  STATE/COUNTY-  MQ/MIDWAY
DE5211  STATE/COUNTY-  HI/KAUAI
DE5212  STATE/COUNTY-  HI/KAUAI
DE5213  STATE/COUNTY-  HI/KAUAI
DE5229  STATE/COUNTY-  HI/KAUAI
TW0160  STATE/COUNTY-  MQ/MIDWAY
```

The get_mark_list program was also updated in conjunction with datasheet95 V2.28. The release of get_mark_list V2.28 incorporates two change requests (CRs): CM-312, and CM-365.

CM-312 Set (Date) and Set By Field in get_mark_list have missing data: The Set (Date) and Set_By (Agency) fields in the output of the get_mark_list.w program are not fully being populated properly, but mostly properly. An example of a mark with this issue can be seen with PID JU2358. In the get_mark_list output it showed no Set (Date) nor Set_By (Agency) data, yet in-house NGS datasheet (i.e. scan_idb) for JU2358 showed that it was monumented in 1934 by CGS.

In get_mark_list.w V2.27 the code tells us that:

```
If the condition code is 'S' for original setting then grab the Set
(Date) and Set_By (Agency) from the history record with the condition
code of 'S'.
```

However, datasheet95.w V8.11 tells us to:

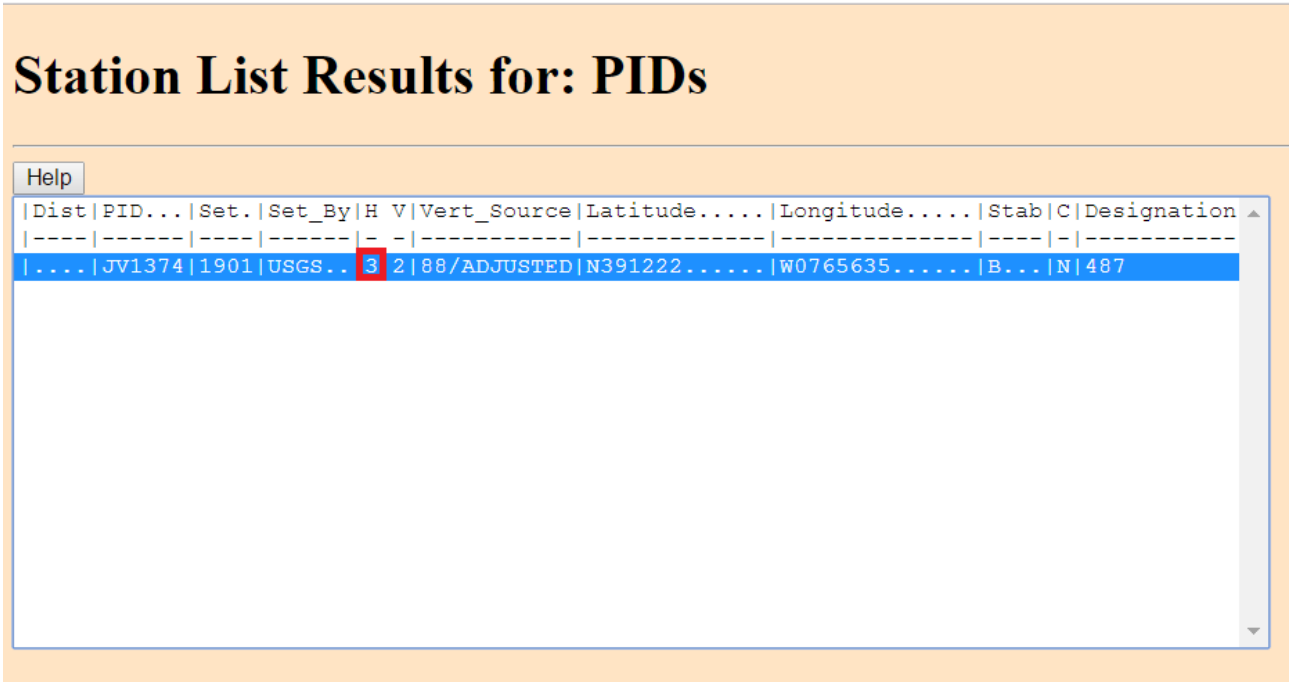
```
Sort the history records by recovery date. If the earliest history
record has a monumentation code that is not a digit then it is the
'MONUMENTED' or the record with the original setting.
```

It was found that the condition code should have nothing to do with whether it was monumented or not as the earliest record *is* the original setting. The NGSIDB.HISTORY table was checked for JU2358's NUID, there was only one history record that said that the condition code was 'Z' not 'S' but that it was monumented in 1934 by CGS.

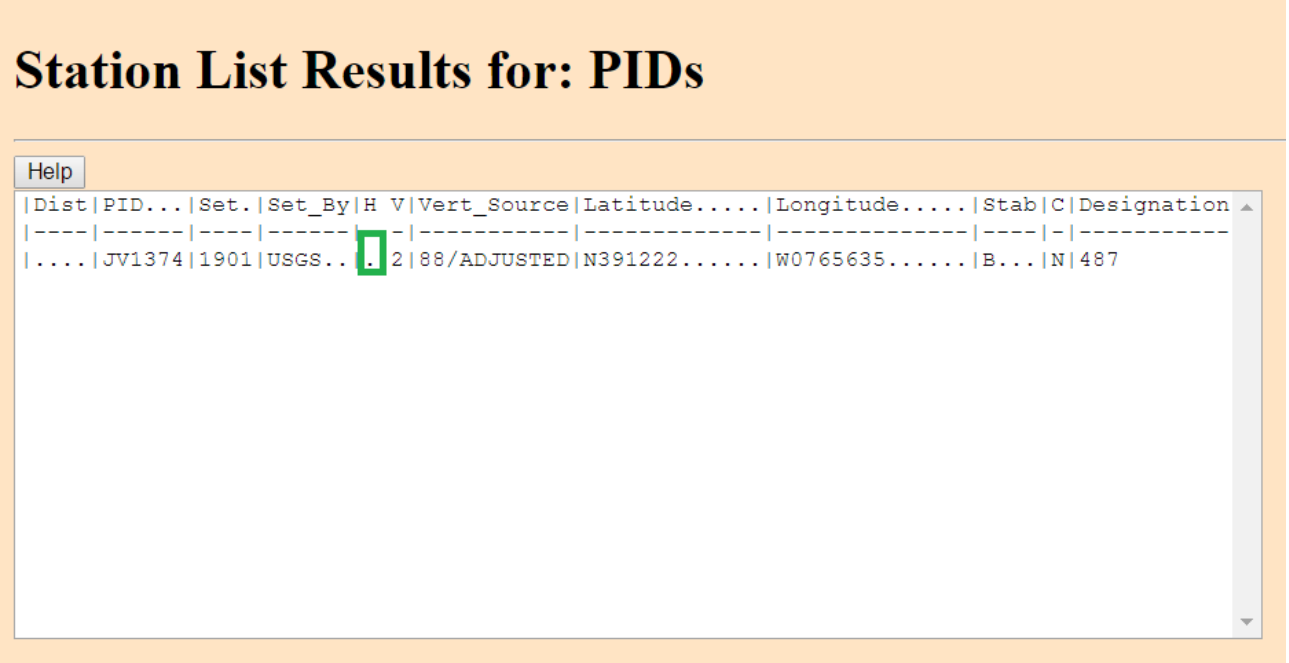
	NUID	DESIGNATION	PID	SET_CLASS	MONUMENT	STABILITY	MAGNETIC_MK	STATE	COUNTY	NUID_1	REPORT_DATE	REPORT_ID	LOAD_ID	COND	AGENCY	COP	SAT_USE	TRANSPOR	PACK_TIME	REPORT_TYPE	T_STATUS
1	10315851	L 4 RESET 1934	JU2358	(null)	(null)	(null)	(null)	NJ	009	10315851	1934	689012	0	Z	CGS	(null)	(null)	(null)	(null)	S	I

This means that the condition code does not tell us 100% of the time that it was an original setting; rather, the earliest history record does. Thus, in this release get_mark_list.w V2.28 was updated to have the same algorithm as datasheet95.w V8.11 does for getting the Set (Date) and Set_By (Agency) data to populate its Set (Date) and Set_By (Agency) fields in the output.

CM-365 get mark is showing the wrong horizontal order: The horizontal order (H column) was showing a 3rd order in the output of get_mark_list when the position was actually scaled off a map. The horizontal order was correct on the datasheet. An example of this issue can be seen when retrieving by PID (https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl) with JV1374.



This issue inadvertently cropped up in the last revision of get_mark_list V2.27 and is corrected in get_mark_list V2.28, as show in the example output below.



Version 8.11 update on 11/06/2016

This release implements change request, CM-201. The changes are seen mainly in the get_mark_list V2.27 output, and minorly in the output from datasheet95 V8.11.

Changes to get_mark_list

If a mark is restricted in the NGS database, either horizontally or vertically) it should not appear in the output of get_mark_list.

In the prior release of the get_mark_list program (V2.26), if a user went to **http:/www.ngs.noaa.gov/cgi-bin/ds_pid.prl** and put in the following PIDs:

```
AF8523
DD3301
HV5076
KV1928
LW1669
LW1796
LW3267
LX3149
LX3452
LX3494
OH1680
```

into the PID box and pressed the `[Submit]` button, they would see the following output:

Station List Results for: PIDs

Help

Re-Sort-By ○ Dist ○ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ○ Designation

Dist	PID...	Set.	Set_By	H	V	Vert_Source	Latitude.....	Longitude.....	Stab	C	Designation
....	AF8523	1942	USE...	2	.	88/SCALED..	N362056.72282	W0771331.49038	C...	G	PARKER RM 1
....	DD3301	1982	MJH...	4	.	.....	N335417.69226	W0794458.93751	....	S	LAKE CITY W MUN TK
....	HV5076	1959	CGS...	4	.	.....	N383210.25844	W0771650.86240	....	G	QUANTICO POWER PLANT CEN STK
....	KV1928	1946	CGS...	3	3	88/ADJUSTED	N400504.35316	W0750537.47421	D...	G	Q 197
....	LW1669	1977	CTGS..	1	1	88/ADJUSTED	N415833.19626	W0715929.69979	C...	G	5306
....	LW1796	1975	CTGS..	2	1	88/ADJUSTED	N414119.86249	W0715659.05218	C...	G	1305X
....	LW3267	1975	CTGS..	2	3	29/LEVELING	N412527.93184	W0715137.11566	C...	S	1456
....	LX3149	1973	CTGS..	1	1	88/ADJUSTED	N413946.11789	W0724044.11881	C...	G	3551
....	LX3452	1975	CTGS..	2	1	88/ADJUSTED	N412126.64054	W0721502.64518	C...	G	4612
....	LX3494	1980	CTGS..	2	3	29/LEVELING	N414618.82284	W0730333.07438	....	S	5699
....	OH1680	1978	ID-001	2	.	29/SCALED..	N434218.41880	W1161023.28570	....	S	T4N R2E SECS 1 2 11 12 ECC

Database retrieval time = 00:00:02

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

In the new release of get_mark_list V2.27, the user would see the following output:

Station List Results for: PIDs

Help

Re-Sort-By ○ Dist ○ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ○ Designation

Dist	PID...	Set.	Set_By	H	V	Vert_Source	Latitude.....	Longitude.....	Stab	C	Designation
....	AF8523	1942	USE...	2	.	88/SCALED..	N362056.....	W0771331.....	C...	G	PARKER RM 1
....	DD3301	1982	MJH...	4	.	.....	N335417.....	W0794458.....	....	S	LAKE CITY W MUN TK
....	HV5076	1959	CGS...	4	.	.....	N383210.....	W0771650.....	....	G	QUANTICO POWER PLANT CEN STK
....	KV1928	1946	CGS...	3	3	88/ADJUSTED	N400504.....	W0750537.....	D...	G	Q 197
....	LW1669	1977	CTGS..	1	1	88/ADJUSTED	N415833.....	W0715929.....	C...	G	5306
....	LW1796	1975	CTGS..	2	1	88/ADJUSTED	N414119.....	W0715659.....	C...	G	1305X
....	LW3267	1975	CTGS..	2	3	29/LEVELING	N412527.....	W0715137.....	C...	S	1456
....	LX3149	1973	CTGS..	1	1	88/ADJUSTED	N413946.....	W0724044.....	C...	G	3551
....	LX3452	1975	CTGS..	2	1	88/ADJUSTED	N412126.....	W0721502.....	C...	G	4612
....	LX3494	1980	CTGS..	2	3	29/LEVELING	N414618.....	W0730333.....	....	S	5699
....	OH1680	1978	ID-001	2	.	29/SCALED..	N434218.....	W1161023.....	....	S	T4N R2E SECS 1 2 11 12 ECC

Database retrieval time = 00:00:01

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

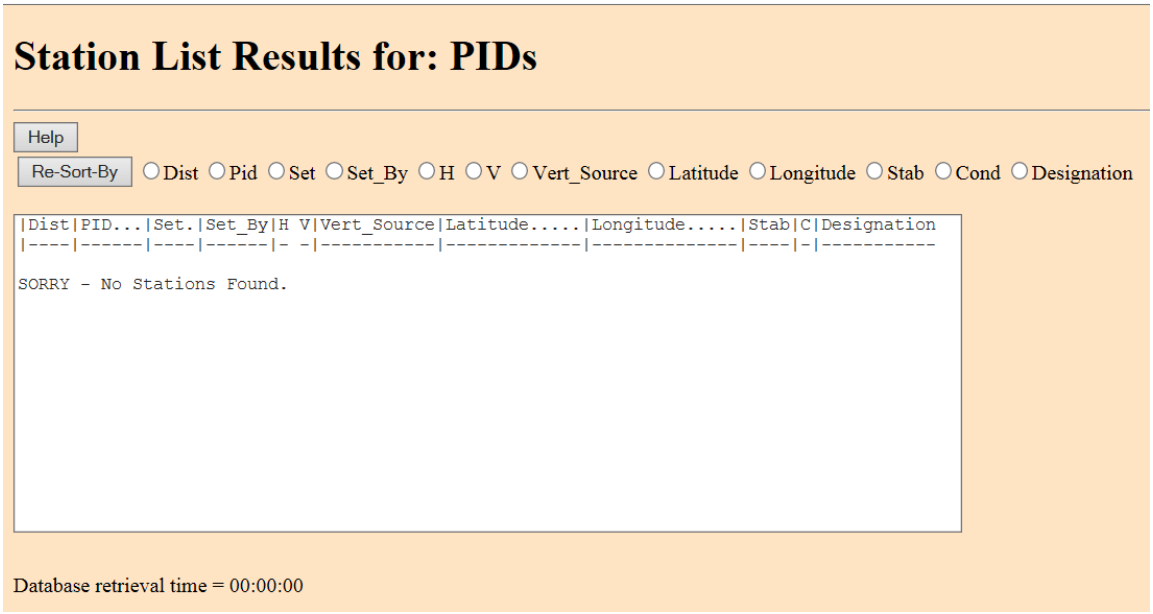
This is because all of these marks are restricted positionally in NGS's database.

Additional it was found that some destroyed marks appeared in the get_mark_list output without the *Include Destroyed Marks* checkbox being checked. Similarly, it was found that some destroyed marks didn't appear in the get_mark_list.w output whenenever the Include Destroyed Marks checkbox is checked. This has been corrected.

To see the corrections in get_mark_list V2.27, go to http:/www.ngs.noaa.gov/cgi-bin/ds_pid.prl and put in the following PIDs of destroyed marks:

```
JA0689
GE0077
KA0319
RA0403
SA1463
```

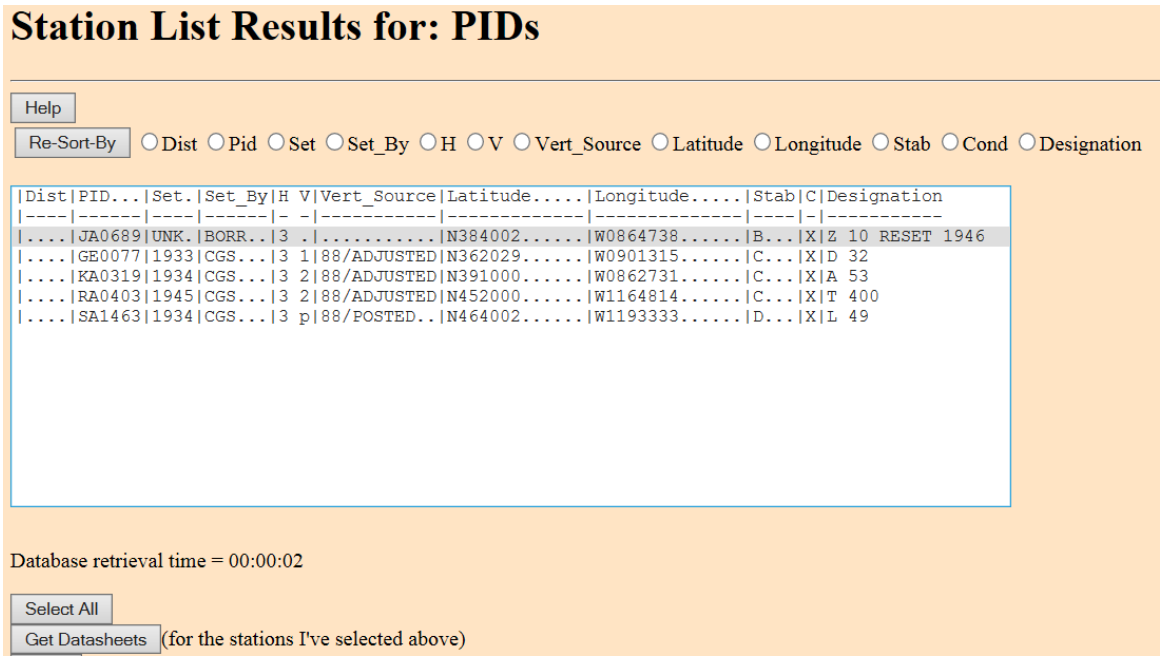
and press the [Submit] button. You should see the following message in the get_mark_list output:



In get_mark_list V2.27, if you go to**:** **http:/www.ngs.noaa.gov/cgi-bin/ds_pid.prl** and put in the following PIDs of destroyed marks:

```
JA0689
GE0077
KA0319
RA0403
SA1463
```

check the *Include Destroyed Marks* checkbox, and press the [Submit] button. You should see the following get_mark_list output:



Station List Results for: PIDs

Help

Re-Sort-By ○ Dist ○ Pid ○ Set ○ Set_By ○ H ○ V ○ Vert_Source ○ Latitude ○ Longitude ○ Stab ○ Cond ○ Designation

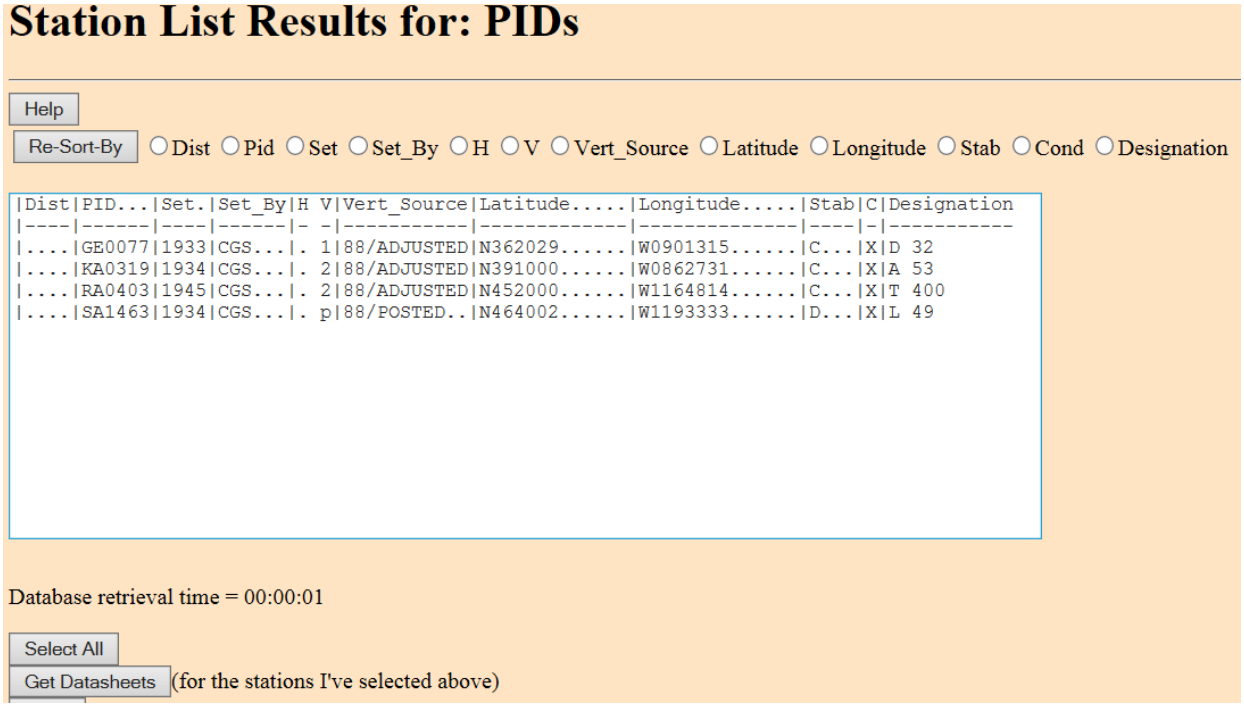
```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
|....|JA0689|UNK.|BORR..|3 .|...........|N384002......|W0864738......|B...|X|Z 10 RESET 1946
|....|GE0077|1933|CGS...|3 1|88/ADJUSTED|N362029......|W0901315......|C...|X|D 32
|....|KA0319|1934|CGS...|3 2|88/ADJUSTED|N391000......|W0862731......|C...|X|A 53
|....|RA0403|1945|CGS...|3 2|88/ADJUSTED|N452000......|W1164814......|C...|X|T 400
|....|SA1463|1934|CGS...|3 p|88/POSTED..|N464002......|W1193333......|D...|X|L 49
```

Database retrieval time = 00:00:02

Select All

Get Datasheets (for the stations I've selected above)

In get_mark_list.w V2.26 (the prior version), going to https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl, putting in the PIDs above, and pressing the [Submit] button listed would have resulted in the following get_mark_list output:



Station List Results for: PIDs

Help

Re-Sort-By ○Dist ○Pid ○Set ○Set_By ○H ○V ○Vert_Source ○Latitude ○Longitude ○Stab ○Cond ○Designation

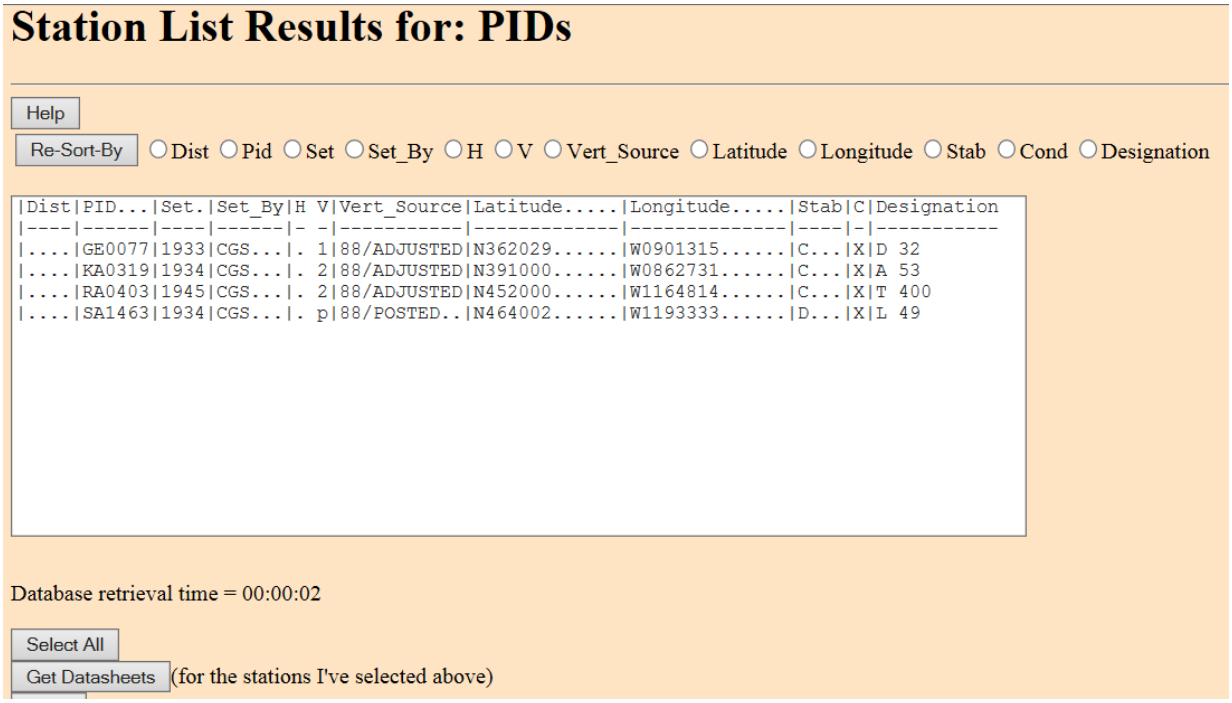
```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
|....|GE0077|1933|CGS...|. 1|88/ADJUSTED|N362029......|W0901315......|C...|X|D 32
|....|KA0319|1934|CGS...|. 2|88/ADJUSTED|N391000......|W0862731......|C...|X|A 53
|....|RA0403|1945|CGS...|. 2|88/ADJUSTED|N452000......|W1164814......|C...|X|T 400
|....|SA1463|1934|CGS...|. p|88/POSTED..|N464002......|W1193333......|D...|X|L 49
```

Database retrieval time = 00:00:01

Select All

Get Datasheets (for the stations I've selected above)

Also in get_mark_list V2.26 (the prior version), going to https://www.ngs.noaa.gov/cgi-bin/ds_pid.prl, putting in the PIDs above, **checking the *Include Destroyed Marks* checkbox**, and pressing the [Submit] button listed would have resulted in the following get_mark_list output:



Changes to datasheets

Whenever a control point is unpublishable, the following nonpub report with reason codes is displayed instead of a datasheet. An example nonpub report for mark LW1669 is as follows:

```
-   This listing contains control for which complete digital                -
-   data sheets where not provided.  The complete data sheets were          -
-   not provided for the reason listed below.  The reason below is          -
-   associated with a horizontal control Nonpub code shown under            -
-   the heading 'H' and/or a vertical control Nonpub code shown under       -
-   the heading 'v'                                                         -
-                                                                           -
-   The format of the records are as follows:                               -
-       Pid  = Station Permanent Identifier)                                -
-       Name = Station Designation                                          -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)       -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)      -
-       O    = Horizontal Order                                             -
-       o    = Vertical Order                                               -
-       H    = Horizontal Nonpub Code                                       -
-       v    = Vertical Nonpub Code                                         -
-                                                                           -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                           -
-       -------- ---------------------------------                          -
-       B        Station is a RBN antenna                                   -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       I        No NAD83 coordinates available, only IGS08 coordinates     -
-       L        CORS L1 Phase Center is not publishable                    -
-       N        No geodetic control                                        -
-       O        Outside NGS publication area                               -
-       P        Purpose of position is not for network control             -
-       R        Restricted position                                        -
-       T        Station is a temporary point/bench mark                    -
-       V        Station is a VOR antenna                                   -
-       W        Weakly determined position                                 -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
```

```
-                                                                              -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                                -
-       -------- ------------------------------                                -
-       C        Not a publishable datum within the state                      -
-       D        No descriptive text available                                 -
-       F        Bench mark not yet adjusted                                   -
-       N        No geodetic control                                           -
-       L        CORS L1 Phase Center is not publishable                       -
-       O        Outside NGS publication area                                  -
-       R        Restricted elevation                                          -
-       S        Mark is in a subsidence area                                  -
-       T        Station is a temporary point/bench mark                       -
-       X        Surface mark reported destroyed                               -
-       Y        Surface and underground mark reported destroyed               -
-       Z        Presumed destroyed                                            -
-                                                                              -
-                                                                              -
-   NOTE - Stations found in this listing may still have a valid               -
-          datasheet produced by use of other publishable values.              -
-          For example, an ADJUSTED height may be non-publishable              -
-          but a good GPS height might be found on the datasheet.              -
-          This listing does not imply that values found on the datasheet      -
-          are restricted.  If it's on the datasheet, use it.                  -
-                                                                              -
------------------------------------------------------------------------------
  Pid    Name                          Lat        Lon        Elev      O o Hv
  ------ ----------------------------- ---------- ---------- --------- - - --
 >LW1669 5306                          41 58 33. /071 59 29.               R
```

In this release of datasheet95.w V8.11, if the control point is unpublishable for any one of the above reason codes, then the position and/or elevation of the mark(s) listed after the reason code paragraphs on the nonpub report are scaled. Mark examples that generate all of the possible reason codes are:

```
AA3150
AA4533
AA7403
AE4225
AI9454
AJ5872
AN0328
AW5059
BH2805
DC1262
DH4289
DN9398
DW1424
LW1669
TR1375
```

The nonpub report shows the following:

```
Msg=FATAL_ERROR - No Marks found

 -------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                  -
 -   data sheets where not provided.  The complete data sheets were            -
 -   not provided for the reason listed below.  The reason below is            -
 -   associated with a horizontal control Nonpub code shown under              -
 -   the heading 'H' and/or a vertical control Nonpub code shown under         -
 -   the heading 'v'                                                           -
 -                                                                             -
 -   The format of the records are as follows:                                 -
 -       Pid  = Station Permanent Identifier)                                  -
 -       Name = Station Designation                                            -
```

```
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)       -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)      -
-       O    = Horizontal Order                                             -
-       o    = Vertical Order                                               -
-       H    = Horizontal Nonpub Code                                       -
-       v    = Vertical Nonpub Code                                         -
-                                                                           -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                           -
-       -------- ---------------------------------                          -
-       B        Station is a RBN antenna                                   -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       I        No NAD83 coordinates available, only IGS08 coordinates     -
-       L        CORS L1 Phase Center is not publishable                    -
-       N        No geodetic control                                        -
-       O        Outside NGS publication area                               -
-       P        Purpose of position is not for network control             -
-       R        Restricted position                                        -
-       T        Station is a temporary point/bench mark                    -
-       V        Station is a VOR antenna                                   -
-       W        Weakly determined position                                 -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
                                                                            -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                             -
-       -------- ------------------------------                             -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       F        Bench mark not yet adjusted                                -
-       N        No geodetic control                                        -
-       L        CORS L1 Phase Center is not publishable                    -
-       O        Outside NGS publication area                               -
-       R        Restricted elevation                                       -
-       S        Mark is in a subsidence area                               -
-       T        Station is a temporary point/bench mark                    -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
-       Z        Presumed destroyed                                         -
-                                                                           -
-                                                                           -
-   NOTE - Stations found in this listing may still have a valid            -
-          datasheet produced by use of other publishable values.           -
-          For example, an ADJUSTED height may be non-publishable           -
-          but a good GPS height might be found on the datasheet.           -
-                                                                           -
-          If a mark/control point is in a subsidence area, you can request -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section  -
-          of its datasheet by checking the 'Include suspect heights in     -
-          subsidence area' checkbox on the datasheet retrieval pages.      -
-                                                                           -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon         Elev      O o Hv
 ------ ------------------------------ ---------- ----------- --------- - - --
>AA3150 TBM 941 0660 STAFF 14 FT       33 43 10. /118 16 22.                 TT
>AA4533 SMX ARP                        34 53 55. /120 27 23.                 NN
>AA7403 SAWMILL ECC                    34 41 35. /118 33 41.                 DD
>AE4225 VOR PAGO PAGO TUT              14 19 57. /170 42 29.                 V
>AI9454 AUNUU SOUTH ET                 14 17 01. /170 33 38.                 XX
>AJ5872 AMERICAN SAMOA CORS L1 PHASE   14 19 33. /170 43 20.                 LL
>AN0328 PORTO RM 1                     28 25 45. /096 28 40.        2.     2 P
>AW5059 206+78.16 800 PC 1937 USE      29 43 07. /095 01 23.                 DZ
>BH2805 GOHEGAN RM 1                   30 11 28. /089 45 18.                 W
>DC1262 B                              32 30 40. /116 59 03.                 OO
>DH4289 PUERTO BARRIOS AA              15 43 48. /088 35 03.                 C
>DN9398 GUATEMALA CITY CORS L1 PHASE                    /                    I
>DW1424 S 1 1951                       33 10 22. /115 47 35.                 YY
>LW1669 5306                           41 58 33. /071 59 29.      166.     1 R
>TR1375 RBN WHIDBEY ISLAND NU 3        48 21 14. /122 40 25.                 BX
```

Version 8.10 update on 10/06/2016

There are four change requests that have been implemented in this release: CM-249, CM-250, CM-251, and CM-291.

CM-249 Changes

Sometimes the GEOID HEIGHT line(s) doesn't appear in the same location on the datasheet. In this change request, the GEOID HEIGHT line(s) will now always appear immediately before the X, Y, and Z lines. Before this release, TV1513's GEOID HEIGHT lines appeared as follows:

```
TV1513                          *CURRENT SURVEY CONTROL
TV1513  ______________________________________________________________________
TV1513* NAD 83(2011) POSITION- 18 27 32.23742(N) 066 06 59.20112(W)   ADJUSTED
TV1513* NAD 83(2011) ELLIP HT-   -41.639 (meters)        (06/27/12)   ADJUSTED
TV1513* NAD 83(2011) EPOCH    -  2010.00
TV1513* PRVD02  ORTHO HEIGHT -     1.334 (meters)        4.38  (feet) ADJUSTED
TV1513  ______________________________________________________________________
TV1513  NAD 83(2011) X  -  2,450,319.846 (meters)                     COMP
TV1513  NAD 83(2011) Y  - -5,533,748.432 (meters)                     COMP
TV1513  NAD 83(2011) Z  -  2,006,620.156 (meters)                     COMP
TV1513  LAPLACE CORR    -          0.91  (seconds)                    DEFLEC12B
TV1513  GEOID HEIGHT    -        -42.984 (meters)                     GEOID12B
TV1513  DYNAMIC HEIGHT  -          1.331 (meters)        4.37  (feet) COMP
TV1513  MODELED GRAVITY -    978,668.5   (mgal)                       NAVD 88
TV1513
TV1513  VERT ORDER      -  FIRST     CLASS II
```

After this release TV1513's GEOID HEIGHT lines appear as follows:

```
TV1513                          *CURRENT SURVEY CONTROL
TV1513  ______________________________________________________________________
TV1513* NAD 83(2011) POSITION- 18 27 32.23742(N) 066 06 59.20112(W)   ADJUSTED
TV1513* NAD 83(2011) ELLIP HT-   -41.639 (meters)        (06/27/12)   ADJUSTED
TV1513* NAD 83(2011) EPOCH    -  2010.00
TV1513* PRVD02  ORTHO HEIGHT -     1.334 (meters)        4.38  (feet) ADJUSTED
TV1513
TV1513  GEOID HEIGHT    -        -42.984 (meters)                     GEOID12B
TV1513  NAD 83(2011) X  -  2,450,319.846 (meters)                     COMP
TV1513  NAD 83(2011) Y  - -5,533,748.432 (meters)                     COMP
TV1513  NAD 83(2011) Z  -  2,006,620.156 (meters)                     COMP
TV1513  LAPLACE CORR    -          0.91  (seconds)                    DEFLEC12B
TV1513  DYNAMIC HEIGHT  -          1.331 (meters)        4.37  (feet) COMP
TV1513  MODELED GRAVITY -    978,668.5   (mgal)                       NAVD 88
TV1513
TV1513  VERT ORDER      -  FIRST     CLASS II
```

CM-250 Changes

Continuous Operating Reference Stations (CORS), which are held fixed during the adjustment, Network accuracy values at CORS sites are considered to be infinitesimal (approach zero). Thus, there is no local accuracy data. However clicking on the link, here, in the partial CORS datasheet below

```
AF9522  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AF9522  Standards:
AF9522         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AF9522            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AF9522  ------------------------------------------------------------------
```

```
 AF9522  NETWORK    0.64   2.08           0.28   0.24   1.06      0.00974253
 AF9522  ---------------------------------------------------------------------
 AF9522  Click here for local accuracies and other accuracy information.
```

will display the network and local accuracy report with no local accuracies in the report (only network accuracy data appears).

The Local and Network Accuracy Data Sheet

```
Program lna_ret Version 2.7.2 Date June 2, 2016
National Geodetic Survey, Retrieval Date = JULY 12, 2016
 AF9522 ***********************************************************************
 AF9522  ACCURACIES  -  Complete network and local accuracy information.
 AF9522  HT_MOD      -  This is a Height Modernization Survey Station.
 AF9522  CORS        -  This is a GPS Continuously Operating Reference Station.
 AF9522  DESIGNATION -  GAITHERSBURG CORS ARP
 AF9522  PID         -  AF9522
 AF9522
 AF9522  Horiz and Ellip are the horizontal and ellipsoid height accuracies
 AF9522  at the 95% confidence level per Federal Geographic Data Committee
 AF9522  Geospatial Positioning Accuracy Standards.  SD_N, SD_E and SD_h are
 AF9522  the standard deviations (one sigma) of the coordinates (NETWORK) or
 AF9522  of the difference in the coordinates (LOCAL) in latitude, longitude
 AF9522  and ellipsoid height.  CorrNE is the (unitless) correlation
 AF9522  coefficient between the latitude and longitude components of either
 AF9522  the coordinate (NETWORK) or coordinate difference (LOCAL).  Dist is
 AF9522  the three-dimensional straight-line slope distance, in km, between
 AF9522  station AF9522 and the corresponding local station.  Local stations
 AF9522  are stations processed simultaneously in a session regardless of
 AF9522  distance.
 AF9522
 AF9522  Accuracy and standard deviation values are given in cm.
 AF9522
 AF9522  Type/PID  Horiz  Ellip  Dist(km)  SD_N   SD_E   SD_h         CorrNE
 AF9522  ---------------------------------------------------------------------
 AF9522  NETWORK   0.64   2.08             0.28   0.24   1.06    +0.00974253
 AF9522  ---------------------------------------------------------------------
```

Since there is no local accuracy data for CORS datasheets (i.e. CORS_TYPE in (‘A’, ‘L’, ‘M’)), the report is moot. This release removes the link to this report whenever the control point being looked at on the datasheet is a CORS.

CM-251 Changes

The National Grid line was requested to be moved to the same section of the datasheet as the SPC and UTM data, above the SUPERSEDED SURVEY CONTROL section. This release of datasheet95 V8.10 takes care of this. An example PID where this change took place is DI2806.

Before the change in datasheet95 V8.9:

```
DI2806;                    North         East     Units Scale Factor Converg.
DI2806;SPC HI 3     -    16,207.074   508,335.623   MT  0.99999086   +0 01 45.1
DI2806;UTM  04      - 2,357,175.886   612,047.871   MT  0.99975514   +0 23 33.7
DI2806
DI2806!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI2806!SPC HI 3     -   0.99999712  x   0.99999086  =   0.99998798
DI2806!UTM  04      -   0.99999712  x   0.99975514  =   0.99975226
DI2806
DI2806:                Primary Azimuth Mark                    Grid Az
DI2806:SPC HI 3     -  HNL FRANK                               264 58 18.7
DI2806:UTM  04      -  HNL FRANK                               264 36 30.1
DI2806
DI2806|---------------------------------------------------------------------|
DI2806| PID    Reference Object                    Distance      Geod. Az   |
DI2806|                                                          dddmmss.s |
DI2806| DN6355 HNL FRANK                          APPROX. 0.6 KM 2650003.8 |
DI2806| DF8972 HONOLULU WAAS 1 CORS ARP           118.744 METERS 26728     |
DI2806|---------------------------------------------------------------------|
DI2806
DI2806                          SUPERSEDED SURVEY CONTROL
DI2806
DI2806  NAD 83(1993)-  21 18 46.89944(N)    157 55 10.76724(W) AD(2006.00) A
DI2806  ELLIP H (11/22/06)   18.358  (m)                      GP(2006.00) 2 1
DI2806
DI2806.Superseded values are not recommended for survey control.
DI2806
DI2806.NGS no longer adjusts projects to the OLD HI datum.
DI2806.See file dsdata.txt to determine how the superseded data were derived.
DI2806
DI2806_U.S. NATIONAL GRID SPATIAL ADDRESS: 4QFJ1204757175(NAD 83)
```

After the change in datasheet95 V8.10:

```
DI2806;                    North         East     Units Scale Factor Converg.
DI2806;SPC HI 3     -    16,207.074   508,335.623   MT  0.99999086   +0 01 45.1
DI2806;UTM  04      - 2,357,175.886   612,047.871   MT  0.99975514   +0 23 33.7
DI2806
DI2806!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI2806!SPC HI 3     -   0.99999712  x   0.99999086  =   0.99998798
DI2806!UTM  04      -   0.99999712  x   0.99975514  =   0.99975226
DI2806
DI2806:                Primary Azimuth Mark                    Grid Az
DI2806:SPC HI 3     -  HNL FRANK                               264 58 18.7
DI2806:UTM  04      -  HNL FRANK                               264 36 30.1
DI2806
DI2806_U.S. NATIONAL GRID SPATIAL ADDRESS: 4QFJ1204757175(NAD 83)
DI2806
DI2806|---------------------------------------------------------------------|
DI2806| PID    Reference Object                    Distance      Geod. Az   |
DI2806|                                                          dddmmss.s |
DI2806| DN6355 HNL FRANK                          APPROX. 0.6 KM 2650003.8 |
DI2806| DF8972 HONOLULU WAAS 1 CORS ARP           118.744 METERS 26728     |
DI2806|---------------------------------------------------------------------|
DI2806
DI2806                          SUPERSEDED SURVEY CONTROL
DI2806
DI2806  NAD 83(1993)-  21 18 46.89944(N)    157 55 10.76724(W) AD(2006.00) A
```

```
 DI2806  ELLIP H (11/22/06)   18.358  (m)                       GP(2006.00) 2 1
 DI2806
 DI2806.Superseded values are not recommended for survey control.
```

CM-291 Changes

Due to a deficiency in COMDAT data, heights were being loaded into the NGSIDB that should not have been. This has resulted in hundreds and hundreds of heights on the datasheet that are actual duplicates of the published heights. In the SUPERSEDED SURVEY CONTROL section of datasheets, these heights appear with the verbiage "leveling" as the explanation. Additionally, there is a date the height was loaded giving the appearance of new leveling which is confusing and misleading. This release of datasheet95 V8.10 removes the load date from all leveling (i.e. ELEV_SOURCE='H' and ELEV_TECH='B' heights) in the SUPERSEDED SURVEY CONTROL section of the datasheet.

Version 8.9.1 update on 09/15/2016

This release implements CM-320, which is an emergency change request to fix the issue in the Gulf Coast dynamic region/subsidence area where datasheets are not being produced. Only the suspect heights were supposed to be suppressed and not the datasheets in V8.9. V8.9.1 corrects this issue.

An example PID in the subsidence area of Louisiana is AH6516. In V8.9 if one went to http://www.ngs.noaa.gov/cgi-bin/ds_pid.prl and put in AH6516 in the PID list, left the remaining defaults on the page, and pressed the [Submit] button, and on the next page if the user pressed the [Select All] button followed by the [Get datasheets] button, the below datasheet would display:

```
The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.
PROGRAM = datasheet95, VERSION = 8.9

 *** retrieval complete.
 Elapsed Time = 00:00:03
Msg=FATAL_ERROR - No Marks found


 ------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
 -   associated with a horizontal control Nonpub code shown under             -
 -   the heading 'H' and/or a vertical control Nonpub code shown under        -
 -   the heading 'v'                                                          -
 -                                                                            -
 -   The format of the records are as follows:                                -
 -       Pid  = Station Permanent Identifier)                                 -
 -       Name = Station Designation                                           -
 -       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)        -
 -       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)       -
 -       O    = Horizontal Order                                              -
 -       o    = Vertical Order                                                -
```

```
-       H    = Horizontal Nonpub Code                                          -
-       v    = Vertical Nonpub Code                                            -
-                                                                              -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                              -
-       -------- ------------------------------                                -
-       B        Station is a RBN antenna                                      -
-       C        Not a publishable datum within the state                      -
-       D        No descriptive text available                                 -
-       I        No NAD83 coordinates available, only IGS08 coordinates        -
-       L        CORS L1 Phase Center is not publishable                       -
-       N        No geodetic control                                           -
-       O        Outside NGS publication area                                  -
-       P        Purpose of position is not for network control                -
-       R        Restricted position                                           -
-       T        Station is a temporary point/bench mark                       -
-       V        Station is a VOR antenna                                      -
-       W        Weakly determined position                                    -
-       X        Surface mark reported destroyed                               -
-       Y        Surface and underground mark reported destroyed               -
                                                                               -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                                -
-       -------- ------------------------------                                -
-       C        Not a publishable datum within the state                      -
-       D        No descriptive text available                                 -
-       F        Bench mark not yet adjusted                                   -
-       N        No geodetic control                                           -
-       L        CORS L1 Phase Center is not publishable                       -
-       O        Outside NGS publication area                                  -
-       R        Restricted elevation                                          -
-       S        Mark is in a subsidence area                                  -
-       T        Station is a temporary point/bench mark                       -
-       X        Surface mark reported destroyed                               -
-       Y        Surface and underground mark reported destroyed               -
-       Z        Presumed destroyed                                            -
-                                                                              -
-                                                                              -
-   NOTE - Stations found in this listing may still have a valid               -
-          datasheet produced by use of other publishable values.              -
-          For example, an ADJUSTED height may be non-publishable              -
-          but a good GPS height might be found on the datasheet.              -
-                                                                              -
-          If a mark/control point is in a subsidence area, you can request    -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section     -
-          of its datasheet by checking the 'Include suspect heights in        -
-          subsidence area' checkbox on the datasheet retrieval pages.         -
-                                                                              -
--------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
>AH6516 CHACAHOULA AZ MK              29 42 15.0/090 54 49.2           ?    S
```

In V8.9.1, doing the same retrieval steps as shown above, will results in the below datasheet with suppressed heights in the SUPERSEDED SURVEY CONTROL section of the datasheet:

```
AH6516 ***********************************************************************
AH6516  DESIGNATION -  CHACAHOULA AZ MK
AH6516  PID         -  AH6516
AH6516  STATE/COUNTY-  LA/TERREBONNE
AH6516  COUNTRY     -  US
AH6516  USGS QUAD   -  GIBSON (1980)
AH6516
AH6516                        *CURRENT SURVEY CONTROL
```

```
AH6516  ____________________________________________________________________
AH6516* NAD 83(2011) POSITION- 29 42 15.07615(N) 090 54 49.29613(W)   ADJUSTED
AH6516* NAD 83(2011) ELLIP HT-   -24.548 (meters)        (06/27/12)   ADJUSTED
AH6516* NAD 83(2011) EPOCH   -  2010.00
AH6516* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
AH6516  **This station is located in a suspected subsidence area (see below).
AH6516  ____________________________________________________________________
AH6516  NAVD 88 orthometric height was determined with geoid model    GEOID96
AH6516  GEOID HEIGHT    -        -25.711 (meters)                     GEOID96
AH6516  GEOID HEIGHT    -        -25.433 (meters)                     GEOID12B
AH6516  NAD 83(2011) X  -    -88,415.073 (meters)                     COMP
AH6516  NAD 83(2011) Y  - -5,543,852.331 (meters)                     COMP
AH6516  NAD 83(2011) Z  -  3,141,921.737 (meters)                     COMP
AH6516  LAPLACE CORR    -          0.47  (seconds)                    DEFLEC12B
AH6516
AH6516  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AH6516  Standards:
AH6516         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
AH6516            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
AH6516  ------------------------------------------------------------------
AH6516  NETWORK    2.05  19.38           0.70   0.94   9.89     -0.09737518
AH6516  ------------------------------------------------------------------
AH6516  Click here for local accuracies and other accuracy information.
AH6516
AH6516
AH6516.The horizontal coordinates were established by GPS observations
AH6516.and adjusted by the National Geodetic Survey in June 2012.
AH6516
AH6516.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AH6516.been affixed to the stable North American tectonic plate. See
AH6516.NA2011 for more information.
AH6516
AH6516.The horizontal coordinates are valid at the epoch date displayed above
AH6516.which is a decimal equivalence of Year/Month/Day.
AH6516
AH6516 ** This is an automated warning due to this station being located within
AH6516 ** a subsidence area. If an orthometric height is not shown above in the
AH6516 ** CURRENT SURVEY CONTROL section but one appears below under the
AH6516 ** SUPERSEDED SURVEY CONTROL section then the orthometric height(s)
AH6516 ** listed are shown only for historical purposes.
AH6516 ** These heights are unverified, unreliable and have dislocated over time.
AH6516 ** For more information, follow the weblink to "Include suspect heights"
AH6516 ** in subsidence areas on the datasheet retrieval pages.
AH6516
AH6516.The orthometric height was determined by GPS observations and a
AH6516.high-resolution geoid model.
AH6516
AH6516.Significant digits in the geoid height do not necessarily reflect accuracy.
AH6516.GEOID12B height accuracy estimate available here.
AH6516
AH6516.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AH6516
AH6516.The Laplace correction was computed from DEFLEC12B derived deflections.
AH6516
AH6516.The ellipsoidal height was determined by GPS observations
AH6516.and is referenced to NAD 83.
AH6516
AH6516. The following values were computed from the NAD 83(2011) position.
AH6516
AH6516;                   North         East      Units Scale Factor Converg.
AH6516;SPC LA S     -   133,552.288 1,040,606.478   MT  0.99993907   +0 12 35.4
AH6516;SPC LA S     -   438,162.80  3,414,056.42   sFT  0.99993907   +0 12 35.4
AH6516;UTM  15      - 3,287,829.121   701,836.406   MT  1.00010267   +1 02 03.0
```

```
AH6516
AH6516!             -  Elev Factor  x  Scale Factor =   Combined Factor
AH6516!SPC LA S     -   1.00000386  x   0.99993907  =   0.99994293
AH6516!UTM  15      -   1.00000386  x   1.00010267  =   1.00010653
AH6516
AH6516:                Primary Azimuth Mark                    Grid Az
AH6516:SPC LA S     -  CHACABOULA                              049 29 12.0
AH6516:UTM  15      -  CHACABOULA                              048 39 44.4
AH6516
AH6516|---------------------------------------------------------------------|
AH6516| PID    Reference Object                    Distance      Geod. Az   |
AH6516|                                                          dddmmss.s |
AH6516| AU3254 CHACABOULA                        412.496 METERS 0494147.4 |
AH6516|---------------------------------------------------------------------|
AH6516
AH6516                          SUPERSEDED SURVEY CONTROL
AH6516
AH6516  NAD 83(2007)-  29 42 15.07639(N)    090 54 49.29665(W) AD(2002.00) 0
AH6516  ELLIP H (02/10/07)  -24.505  (m)                       GP(2002.00)
AH6516  ELLIP H (02/21/02)  -24.480  (m)                       GP(       ) 5 1
AH6516  NAD 83(1992)-  29 42 15.07571(N)    090 54 49.29550(W) AD(       ) 1
AH6516  ELLIP H (12/17/98)  -24.476  (m)                       GP(       ) 4 2
AH6516
AH6516.Superseded values are not recommended for survey control.
AH6516
AH6516.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AH6516.See file dsdata.txt to determine how the superseded data were derived.
AH6516
AH6516_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYN0183687829(NAD 83)
AH6516
AH6516_MARKER: DD = SURVEY DISK
AH6516_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AH6516_STAMPING: CHACAHOULA AZ MK 1993
AH6516_MARK LOGO: TPCG
AH6516_PROJECTION: FLUSH
AH6516_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
AH6516_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AH6516+STABILITY: SURFACE MOTION
AH6516_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AH6516+SATELLITE: SATELLITE OBSERVATIONS - 1993
AH6516
AH6516  HISTORY     - Date     Condition        Report By
AH6516  HISTORY     - 1993     MONUMENTED       GSENG
AH6516
AH6516                          STATION DESCRIPTION
AH6516
AH6516'DESCRIBED BY GULF SOUTH ENGINEERS INCORPORATED 1993 (TWR)
AH6516'MONUMENT IS LOCATED NORTHWEST OF THE CITY OF HOUMA JUST SOUTH OF THE
AH6516'LA. HIGHWAY 20 RIGHT-OF-WAY (TOWNSHIP 16 SOUTH RANGE 15 EAST SECTION
AH6516'11).  MONUMENT IS A TERREBONNE PARISH LIS DISK SET IN CONCRETE 0.2
AH6516'INCHES BELOW THE LEVEL OF THE GROUND. MONUMENT IS ABOUT 1100 FT (335.3
AH6516'M) WEST OF THE INTERSECTION OF BULL RUN ROAD AND LA. HIGHWAY 20, 69.05
AH6516'FT (21.05 M) SOUTH OF A NAIL/SHINER IN THE CENTERLINE OF LA. HIGHWAY
AH6516'20, 40.52 FT (12.35 M) SOUTHEAST OF A NAIL/SHINER IN A LIGHT POLE,
AH6516'41.3 FT (12.6 M) SOUTHWEST OF A FIRE HYDRANT, 18.6 FT (5.7 M) WEST OF
AH6516'THE NORTHWEST CORNER OF A MOTEL ROOM (APARTMENT) AT 1531 HIGHWAY 20.

*** retrieval complete.
Elapsed Time = 00:00:03
```

In V8.9.1, if suppressed superseded heights are desired, one needs only to go to http://www.ngs.noaa.gov/cgi-bin/ds_pid.prl, put in AH6516 in the PID list, check the checkbox

for ☑ Include suspect heights in subsidence areas, press the [Submit] button, press the [In understand the risk] button on the pop-up Warning dialog box, and then on the next page press the [Select All] button followed by the [Get datasheets] button. The datasheet below will display with suspect heights in the SUPERSEDED SURVEY CONTROL section of the datasheet:

```
1        National Geodetic Survey,   Retrieval Date = AUGUST 16, 2016
 AH6516 ***********************************************************************
 AH6516  DESIGNATION -  CHACAHOULA AZ MK
 AH6516  PID         -  AH6516
 AH6516  STATE/COUNTY-  LA/TERREBONNE
 AH6516  COUNTRY     -  US
 AH6516  USGS QUAD   -  GIBSON (1980)
 AH6516
 AH6516                        *CURRENT SURVEY CONTROL
 AH6516  ______________________________________________________________________
 AH6516* NAD 83(2011) POSITION- 29 42 15.07615(N) 090 54 49.29613(W)   ADJUSTED
 AH6516* NAD 83(2011) ELLIP HT-   -24.548 (meters)        (06/27/12)   ADJUSTED
 AH6516* NAD 83(2011) EPOCH   -  2010.00
 AH6516* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AH6516  **This station is located in a suspected subsidence area (see below).
 AH6516  ______________________________________________________________________
 AH6516  NAVD 88 orthometric height was determined with geoid model    GEOID96
 AH6516  GEOID HEIGHT    -        -25.711 (meters)                     GEOID96
 AH6516  GEOID HEIGHT    -        -25.433 (meters)                     GEOID12B
 AH6516  NAD 83(2011) X  -    -88,415.073 (meters)                     COMP
 AH6516  NAD 83(2011) Y  - -5,543,852.331 (meters)                     COMP
 AH6516  NAD 83(2011) Z  -  3,141,921.737 (meters)                     COMP
 AH6516  LAPLACE CORR    -          0.47  (seconds)                    DEFLEC12B
 AH6516
 AH6516  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AH6516  Standards:
 AH6516         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AH6516            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 AH6516  ------------------------------------------------------------------
 AH6516  NETWORK    2.05  19.38           0.70   0.94   9.89     -0.09737518
 AH6516  ------------------------------------------------------------------
 AH6516  Click here for local accuracies and other accuracy information.
 AH6516
 AH6516
 AH6516.The horizontal coordinates were established by GPS observations
 AH6516.and adjusted by the National Geodetic Survey in June 2012.
 AH6516
 AH6516.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AH6516.been affixed to the stable North American tectonic plate. See
 AH6516.NA2011 for more information.
 AH6516
 AH6516.The horizontal coordinates are valid at the epoch date displayed above
 AH6516.which is a decimal equivalence of Year/Month/Day.
 AH6516
 AH6516 ** This station is in an area of known vertical motion. If an
 AH6516 ** orthometric height was ever established but is not available
 AH6516 ** in the current survey control section, the orthometric height
 AH6516 ** is considered suspect.  Suspect heights are available in the
 AH6516 ** superseded section only if requested.
 AH6516
 AH6516.The orthometric height was determined by GPS observations and a
 AH6516.high-resolution geoid model.
 AH6516
 AH6516.Significant digits in the geoid height do not necessarily reflect accuracy.
 AH6516.GEOID12B height accuracy estimate available here.
 AH6516
```

```
AH6516.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AH6516
AH6516.The Laplace correction was computed from DEFLEC12B derived deflections.
AH6516
AH6516.The ellipsoidal height was determined by GPS observations
AH6516.and is referenced to NAD 83.
AH6516
AH6516. The following values were computed from the NAD 83(2011) position.
AH6516
AH6516;                    North         East     Units Scale Factor Converg.
AH6516;SPC LA S     -   133,552.288 1,040,606.478   MT  0.99993907   +0 12 35.4
AH6516;SPC LA S     -   438,162.80  3,414,056.42   sFT  0.99993907   +0 12 35.4
AH6516;UTM  15      - 3,287,829.121   701,836.406   MT  1.00010267   +1 02 03.0
AH6516
AH6516!             -  Elev Factor  x  Scale Factor =   Combined Factor
AH6516!SPC LA S     -   1.00000386  x   0.99993907  =   0.99994293
AH6516!UTM  15      -   1.00000386  x   1.00010267  =   1.00010653
AH6516
AH6516:                Primary Azimuth Mark                     Grid Az
AH6516:SPC LA S     -  CHACABOULA                               049 29 12.0
AH6516:UTM  15      -  CHACABOULA                               048 39 44.4
AH6516
AH6516|---------------------------------------------------------------------|
AH6516| PID    Reference Object                    Distance      Geod. Az  |
AH6516|                                                          dddmmss.s |
AH6516| AU3254 CHACABOULA                         412.496 METERS 0494147.4 |
AH6516|---------------------------------------------------------------------|
AH6516
AH6516                          SUPERSEDED SURVEY CONTROL
AH6516
AH6516  NAD 83(2007)-  29 42 15.07639(N)    090 54 49.29665(W) AD(2002.00) 0
AH6516  ELLIP H (02/10/07)  -24.505  (m)                       GP(2002.00)
AH6516  ELLIP H (02/21/02)  -24.480  (m)                       GP(       ) 5 1
AH6516  NAD 83(1992)-  29 42 15.07571(N)    090 54 49.29550(W) AD(       ) 1
AH6516  ELLIP H (12/17/98)  -24.476  (m)                       GP(       ) 4 2
AH6516  NAVD 88 (12/17/98)    1.2    (m)  GEOID96 model used   GPS OBS
AH6516
AH6516 ** No published orthometric height exists and therefore all are
AH6516 ** considered suspect. This station did not take part in a recent
AH6516 ** survey which established orthometric heights in the area.  Therefore,
AH6516 ** any previously published orthometric heights have not been validated.
AH6516 ** NGS does not recommend using suspect or superseded heights as control
AH6516 ** unless they can be validated or a new NAVD88 height established.
AH6516 ** If this station were to take part in a new project and submitted
AH6516 ** to NGS a new height could be published.
AH6516
AH6516.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AH6516.See file dsdata.txt to determine how the superseded data were derived.
AH6516
AH6516_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYN0183687829(NAD 83)
AH6516
AH6516_MARKER: DD = SURVEY DISK
AH6516_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AH6516_STAMPING: CHACAHOULA AZ MK 1993
AH6516_MARK LOGO: TPCG
AH6516_PROJECTION: FLUSH
AH6516_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
AH6516_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AH6516+STABILITY: SURFACE MOTION
AH6516_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AH6516+SATELLITE: SATELLITE OBSERVATIONS - 1993
AH6516
AH6516  HISTORY     - Date     Condition        Report By
```

```
AH6516  HISTORY     - 1993     MONUMENTED       GSENG
AH6516
AH6516                          STATION DESCRIPTION
AH6516
AH6516'DESCRIBED BY GULF SOUTH ENGINEERS INCORPORATED 1993 (TWR)
AH6516'MONUMENT IS LOCATED NORTHWEST OF THE CITY OF HOUMA JUST SOUTH OF THE
AH6516'LA. HIGHWAY 20 RIGHT-OF-WAY (TOWNSHIP 16 SOUTH RANGE 15 EAST SECTION
AH6516'11).  MONUMENT IS A TERREBONNE PARISH LIS DISK SET IN CONCRETE 0.2
AH6516'INCHES BELOW THE LEVEL OF THE GROUND. MONUMENT IS ABOUT 1100 FT (335.3
AH6516'M) WEST OF THE INTERSECTION OF BULL RUN ROAD AND LA. HIGHWAY 20, 69.05
AH6516'FT (21.05 M) SOUTH OF A NAIL/SHINER IN THE CENTERLINE OF LA. HIGHWAY
AH6516'20, 40.52 FT (12.35 M) SOUTHEAST OF A NAIL/SHINER IN A LIGHT POLE,
AH6516'41.3 FT (12.6 M) SOUTHWEST OF A FIRE HYDRANT, 18.6 FT (5.7 M) WEST OF
AH6516'THE NORTHWEST CORNER OF A MOTEL ROOM (APARTMENT) AT 1531 HIGHWAY 20.

*** retrieval complete.
Elapsed Time = 00:00:14
```

As part of CM-320, the Alabama dynamic region/subsidence area, which is part of the Gulf Coast dynamic region/subsidence area, was updated. The Gulf Coast dynamic region/subsidence area is an area known or suspected to have subsidence, uplift, or other tectonic vertical motion. In 2005, there was a single dynamic region in the state of LA that was defined with a *latitude/longitude polygon*. In 2007 the LA dynamic region polygon was put aside in favor of defining the dynamic region in the state of LA with a series of *three minimum/maximum latitude/longitude areas*. In 2012 the dynamic region grew to span the lower parts of Gulf Coast states of AL, FL, MS, and LA and was comprised of several *minimum/maximum latitude/longitude areas*. In August, 2016, the dynamic regions in the state of AL were updated. Table 1 shows the Gulf Coast dynamic region/subsidence area before the August, 2016 Alabama update. The line highlighted in red is what is being replaced. Table 2 shows the Gulf Coast dynamic region/subsidence area after it, where the changes to the latitude and longitude ranges are highlighted in green.

Table 1: Dynamic Regions/Subsidence Areas of the Gulf Coast

State	Latitude Range	Longitude Range
LA	latitude ≤ N303432	longitude ≥ W0912738
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738
LA	None	longitude ≤ W0903401
MS	latitude ≤ N320608	None
AL	latitude ≤ N312344	longitude ≥ W0880000
FL	latitude ≤ N303716	longitude ≥ W0870744

Table 2: Dynamic Regions/Subsidence Areas of the Gulf Coast

State	Latitude Range	Longitude Range
LA	latitude ≤ N303432	longitude ≥ W0912738
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738
LA	None	longitude ≤ W0903401
MS	latitude ≤ N320608	None
AL	latitude ≤ N310028	longitude ≥ W0872300

AL	latitude ≤ N312344	longitude ≥ W0874643
AL	latitude ≤ N314450	longitude ≥ W0880333
AL	latitude ≤ N314752	longitude ≥ W0880800
AL	latitude ≤ N330420	longitude ≥ W0881937
AL	latitude ≤ N320533	longitude ≥ W0882358
FL	latitude ≤ N303716	longitude ≥ W0870744

In a dynamic region/subsidence area, datasheets are publicly publishable for control points in specific projects (a.k.a. adjustment identifiers). If a control point is not part of these specific projects, then a public datasheet also includes the reason that the elevation for this control point should not be used in project (sample output below).

CM-320 also updates the message on American Samoa datasheets from:

```
DE7243.The current NAD 83 position and ellipsoid height are consistent
DE7243.with AMERICAN SAMOA COR ASPA coordinates revised in February 2013
DE7243.to account for displacement due to the September 29, 2009 Samoa
DE7243.Island earthquake.
```

to:

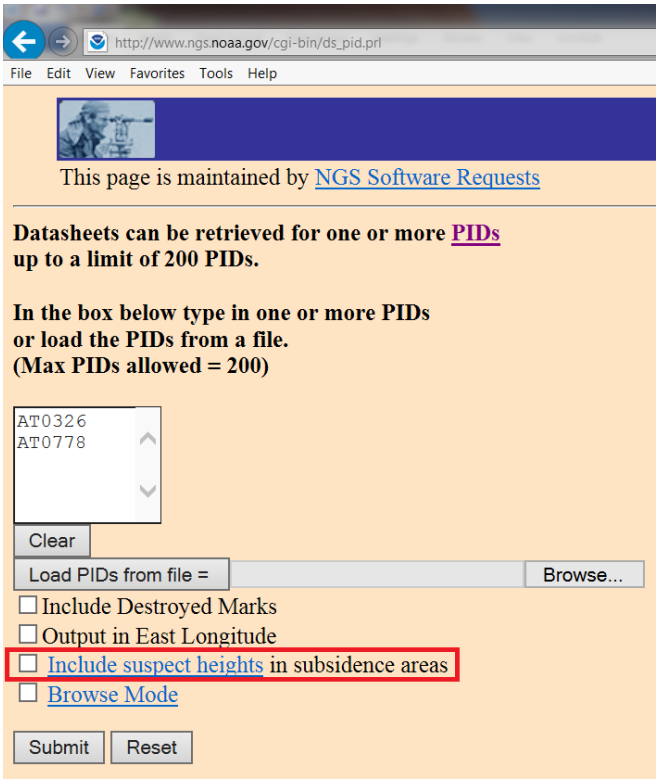
```
DE7243.The current NAD 83 position and ellipsoid height are consistent
DE7243.with AMERICAN SAMOA CORS ASPA coordinates revised in February 2013
DE7243.to account for displacement due to the September 29, 2009 Samoa
DE7243.Island earthquake.
```

Version 8.9 update on 06/02/2016

There are 5 changes that occurred in the datasheet95.w V8.9 release.

Background:

Two marks AT0326 and AT0778 reside in the dynamic region/subsidence area in Louisiana. Whenever the `Include suspect heights in subsidence areas` checkbox is *not* checked on the NGS web page http://www.ngs.noaa.gov/cgi-bin/ds_pid.prl (as shown below),



the following results page showed only AT0326 and not AT0778.

Station List Results for: PIDs

Help

```
|Dist|PID...|Set.|Set_By|H V|Vert_Source|Latitude.....|Longitude.....|Stab|C|Designation
|----|------|----|------|- -|-----------|-------------|--------------|----|-|-----------
|....|AT0326|UNK.|MRC...|. 1|29/ADJUSTED|N295350......|W0895330......|D...|N|218/1 BOLT MRC
```

Database retrieval time = 00:00:01

Select All
Get Datasheets (for the stations I've selected above)
Move (the above station list to a File->Print Window)
Reset

Return to Datasheet Home Page

Change #1:

Both PIDs should have been in the get_mark_list.w output (mark listing) shown above. In order to resolve this issue (#1 below) and two additional issues (#2 and #3 below), the best height algorithm, which is common to both the get_mark_list.w program (which produces the initial listing of marks on the datasheet retrieval web pages) and the datasheet95.w program was reviewed by Julie Prusky and Janet Irwin and updated. The best height algorithm update affects primarily control points in the 66 counties encompassed within Gulf Coast Dynamic Region/Subsidence Area.

The best height algorithm was updated for the following 3 issues:

(1) In reviewing datasheet95.w V8.8, it was discovered that the program was not picking up the last 6th part in the 6-part control type (i.e. X-0-0-0-0-0 or X-0-0-0-0-S) that was being passed down to it via the datasheet retrieval web pages or from command line calls of it. The 6th part of the control type means "give/don't give me the suspect heights in the SUPERSEDED SURVEY CONTROL section of its datasheet, not "is/isn't the control type in a subsidence area". These two ideas got coupled in the code and had to be de-coupled in the best height algorithm. The update means that some control points that should have displayed in the get_mark_list.w output (which would allow you to then choose to see its datasheet) are now included. Some sample PIDs with this scenario were

AB4053, AB4052, and AB4051 in Baldwin (003) county Alabama, and AT0778, AT0793, and AT0805 in St. Bernard (087) county Louisiana.

(2) On some datasheets in the subsidence area where the user checked the "Include suspect heights in subsidence area" checkbox, and the best height would have been a SCALED height but is shown as "NOT PUB" on the CURRENT SURVEY CONTROL section's orthometric height line, no SCALED height was shown in the SUPERSEDED SURVEY CONTROL section of the datasheet. Julie Prusky in OAD requested that SCALED orthometric heights be shown in this section if this checkbox was selected. Some sample PIDs where this was an issue include AU2823, AV0853, and BJ4300.

(3) There were some special case scenarios where a small subset of the total marks inside and outside of the subsidence area (99% of the issue was limited to the subsidence area) was retrieving an older orthometric height vs the latest one. Some sample PIDs where this was an issue include EY2387, TW0483, BH0088, BH0104, AI2823, BH1708, and AA8546.

Change #2:

The text on the page that displays the reason codes for why a control point is unpublishable was updated. In datasheet95.w V8.8, the text read:

```
-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- ---------------------------------                            -
-       B        Station is a RBN antenna                                     -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       I        No NAD83 coordinates available, only IGS08 coordinates       -
-       L        CORS L1 Phase Center is not publishable                      -
-       N        No geodetic control                                          -
-       O        Outside NGS publication area                                 -
-       P        Purpose of position is not for network control               -
-       R        Restricted position                                          -
-       T        Station is a temporary point/bench mark                      -
-       V        Station is a VOR antenna                                     -
-       W        Weakly determined position                                   -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
                                                                              -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ------------------------------                               -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
```

```
-       F        Bench mark not yet adjusted                                  -
-       N        No geodetic control                                          -
-       L        CORS L1 Phase Center is not publishable                      -
-       O        Outside NGS publication area                                 -
-       R        Restricted elevation                                         -
-       S        Mark is in a subsidence area                                 -
-       T        Station is a temporary point/bench mark                      -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-       Z        Presumed destroyed                                           -
-                                                                             -
-                                                                             -
-   NOTE - Stations found in this listing may still have a valid              -
-          datasheet produced by use of other publishable values.             -
-          For example, an ADJUSTED height may be non-publishable             -
-          but a good GPS height might be found on the datasheet.             -
-          This listing does not imply that values found on the datasheet     -
-          are restricted.  If it's on the datasheet, use it.                 -
-                                                                             -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
```

In datasheet95.w V8.9, the test reads:

```
-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- --------------------------------                             -
-       B        Station is a RBN antenna                                     -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       I        No NAD83 coordinates available, only IGS08 coordinates       -
-       L        CORS L1 Phase Center is not publishable                      -
-       N        No geodetic control                                          -
-       O        Outside NGS publication area                                 -
-       P        Purpose of position is not for network control               -
-       R        Restricted position                                          -
-       T        Station is a temporary point/bench mark                      -
-       V        Station is a VOR antenna                                     -
-       W        Weakly determined position                                   -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
                                                                             -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ------------------------------                               -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       F        Bench mark not yet adjusted                                  -
-       N        No geodetic control                                          -
-       L        CORS L1 Phase Center is not publishable                      -
-       O        Outside NGS publication area                                 -
-       R        Restricted elevation                                         -
```

```
-       S        Mark is in a subsidence area                                -
-       T        Station is a temporary point/bench mark                     -
-       X        Surface mark reported destroyed                             -
-       Y        Surface and underground mark reported destroyed             -
-       Z        Presumed destroyed                                          -
-                                                                            -
-                                                                            -
-   NOTE - Stations found in this listing may still have a valid             -
-          datasheet produced by use of other publishable values.            -
-          For example, an ADJUSTED height may be non-publishable            -
-          but a good GPS height might be found on the datasheet.            -
-                                                                            -
-          If a mark/control point is in a subsidence area, you can request -
-          to see suspect heights in the SUPERSEDED SURVEY CONTROL section  -
-          of its datasheet by checking the 'Include suspect heights in     -
-          subsidence area' checkbox on the datasheet retrieval pages.      -
-                                                                            -
 ----------------------------------------------------------------------------
  Pid    Name                           Lat        Lon        Elev      O o Hv
  ------ ------------------------------ ---------- ---------- --------- - - --
```

Change #3:

The datasheet95.w V8.9 program was recompiled to use the libraries that were modified in the get_mark_list.w V2.26 program, as well as the latest libraries that were updated as part of the Solaris to Linux conversion process. This version of datasheet95.w is the first version that runs on Linux.

Other programs affected by this change request include chk_pub.w V3.12, get_mark_list.w V2.26, get_radius_list.w V3.11, lna_ret.w V2.7.2, and sup_marks.w V2.8.2.

Change #4:

In this release of datasheet95.w V8.9, Vasanthi Kammula added two projects to the list of valid projects in the Gulf Coast dynamic region/subsidence area:

(3) 00000857 with epoch 2009.55.
(4) 00000730/5 with epoch 2009.55.

Project 00000857 is valid in the state of Florida. Project 00000730/5 is valid in the states of Alabama and Mississippi.

Below is the list of valid projects for the Gulf Coast Dynamic Region/Subsidence Area (new records are highlighted in green).

Project	Epoch
00000729/1	2009.55
00000729/2	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
GPS2329	2006.81
GPS2100	2004.65
GPS2021/C	2004.65
GPS2212	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2262	2004.65
GPS2896/B	2009.55
GPS2896/C	2009.55
GPS2995	2009.55
GPS2995/B	2009.55
00000840	2009.55
00000803	2009.55
00000857	2009.55
00000730/5	2009.55

and a list of the valid project/state combinations within the Gulf Coast Dynamic Region/Subsidence Area (new records are highlighted in green).

Subsidence Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000731	FL
00000732	TX
00000772	MS
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL
GPS2995	LA
GPS2995/B	LA
00000840	MS
00000803	MS
00000857	FL
00000730/5	AL
00000730/5	MS

Change #5:

There is a paragraph change whenever we are in the Gulf Coast Dynamic Region/Subsidence Area but the mark is not in one of the tables outlined in Change #4 above. The paragraph before the change (datasheet95 V8.8) looks like:

```
AJ7791 ** This station is in an area of known vertical motion.  If no
AJ7791 ** orthometric height is shown in the current survey control section,
AJ7791 ** all orthometric heights are considered suspect and are only
AJ7791 ** available in the superseded section if suspect heights were
AJ7791 ** requested.
```

The paragraph after the change (datasheet95 V8.9) looks like:

```
AJ7791 ** This is an automated warning due to this station being located within
AJ7791 ** a subsidence area. If an orthometric height is not shown above in the
AJ7791 ** CURRENT SURVEY CONTROL section but one appears below under the
AJ7791 ** SUPERSEDED SURVEY CONTROL section then the orthometric height(s)
AJ7791 ** listed are shown only for historical purposes.
AJ7791 ** These heights are unverified, unreliable and have dislocated over time.
AJ7791 ** For more information, follow the weblink to "Include suspect heights"
AJ7791 ** in subsidence areas on the datasheet retrieval pages.
```

Version 8.8 update on 09/29/2015

The datasheet95 program was updated to display geoid heights with three significant digits after the decimal place and to include the message:

```
<PID>.Significant digits in the geoid height do not necessarily reflect accuracy.
<PID>.<current geoid model> height accuracy estimate available here.
```

on the datasheet. This message is associated with the latest/current geoid height model. As of this writing, the latest/current geoid height model is GEOID12B.

Version 8.7.1 minor update on 08/3/2015

The datasheet95 program was not updated, however, the underlying libraries shared between datasheet95 and other programs (e.g. chk_pub, get_mark_list, get_radius_list, lna_ret, sup_marks) were updated. This is simply a recompile of the datasheet95 program with the updated/latest C and Fortran libraries.

Version 8.7 update to the Dynamic Regions/Subsidence Areas data (but not the datasheet95 program itself) on 04/13/2015

In order for a project to be publishable on datasheets , a control point must lie outside of the Gulf Coast Dynamic Regions/Subsidence Areas, or if in it, *the elevation must be in a project listed in Tables 2 and 3 or Tables 2 and 4*. The boundaries of this subsidence region in the states of Alabama, Florida, Louisiana, and Mississippi are denoted in Table 1 below.

Table 1: Dynamic Regions/Subsidence Areas of the Gulf Coast

State	Latitude Range	Longitude Range
LA	latitude ≤ N303432	longitude ≥ W0912738
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738
LA	latitude ≤ N310002	longitude ≤ W0903401
MS	latitude ≤ N320608	W0882650 ≤ longitude ≤ W0910952
AL	latitude ≤ N312344	longitude ≥ W0880000
FL	N301743 ≤ latitude ≤ N303716	longitude ≥ W0870744

Table 2: Publishable Projects in the Gulf Coast Dynamic Regions/Subsidence Areas (contains both historic and currently publishable projects)

Project	Epoch
00000729/1	2009.55
00000729/2	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
GPS2329	2006.81
GPS2100	2004.65
GPS2021/C	2004.65
GPS2212	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2262	2004.65
GPS2896/B	2009.55
GPS2896/C	2009.55
GPS2995	2009.55
GPS2995/B	2009.55
00000840	2009.55
00000803	2009.55

New records in this table are highlighted in green.

Table 3: *Currently* Publishable Projects within a State in the Gulf Coast Dynamic Regions/Subsidence Areas

Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000731	FL
00000732	TX
00000772	MS
00000840	MS
00000803	MS
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL
GPS2995	LA
GPS2995/B	LA

New records in this table are highlighted in green.

In some cases only a handful of control points are publishable within a project in the subsidence region and not the entire project. The PIDs of these control points and their associated state and project are listed in *Table 4* below.

Table 4: Publishable PIDs (control points)
in the Gulf Coast Dynamic Regions/Subsidence Areas

PID	STATE	PROJECT
BG1724	FL	00000025
BH1210	LA	00000729/1
BH1212	LA	GPS2896/C
BH1213	LA	00000729/1
BH3249	MS	00000840
DL9666	MS	00000729/1
DL9667	LA	00000729/1

No change was made to Table 4 above.

Version 8.7 released at 4:12pm on 04/09/2015

This release updates datasheets to work with the new GEOID12B geoid grids and the DEFLEC12B deflection grids. These grids were updated for use in several NGS products to take care of an error in the grids in the state of Puerto Rico (PR). Even though the issue arose in PR, all of the grids for the US/US Territories are affected. The geoid grids updated include eight for CONUS, four for Alaska (AK), one for Hawaii (HI), one for Guam (GU) and the Northern Mariana Islands (CQ), one for Puerto Rico (PR) and the US Virgin Islands (VQ), and one for American Samoa (AS). Below is a list of representative PIDs in each of the grid zones:

```
QC0457 CONUS Grid #1
RV0733 CONUS Grid #2
RL0502 CONUS Grid #3
RF0782 CONUS Grid #4
MT0826 CONUS Grid #5
AI9393 CONUS Grid #6
MA1926 CONUS Grid #7
LY2921 CONUS Grid #8
UV8038 AK Grid #1
UW7465 AK Grid #2
UV7838 AK Grid #3
UV7112 AK Grid #4
TU0026 HI Grid #0
TW0411 GU Grid #0
DE7041 CQ Grid #0
DG5385 PR Grid #0
TV1537 VQ Grid #0
AA4457 AS Grid #0
```

Version 8.6.1 released at 10:26am on 02/14/2015

This datasheet95 release is a special update for two control points associated with the Washington Monument: HV4442 and DL6618. Rather than going through a tedious update of some database codes in the system for the cases needed for these control points that would require weeks to do, and given the short window of time needed to get specific text displayed on datasheets for these control points it was decided that the text needed should be hard coded into the datasheets for these two control points.

For only the two control points (this should not affect ANY other control points) the lines on the datasheet that read:

```
<PID>* NAD 83(2011) ELLIP HT-   149.172 (meters)        (02/01/15)   ADJUSTED
```

and

```
<PID>.The ellipsoidal height was determined by GPS observations
<PID>.and is referenced to NAD 83.
```

Should be changed to:

```
<PID>* NAD 83(2011) ELLIP HT-   149.172 (meters)        (02/01/15)   GPS OBS
```

and

```
<PID>.The ellipsoidal height was determined by classical geodetic methods
```
<PID>.and is referenced to NAD 83.

Version 8.6 released at 4:46pm on 01/22/2015

This release encompasses 3 change requests:

(1) Users/Surveyors have requested information regarding the standard deviations used to calculate the Horiz and Ellip values for network accuracies be put on datasheets and the local and network accuracy reports. Currently, these values are published for local accuracies on the local and network accuracy report (via the lna_ret program) but they have never been published for the network accuracies before and need to be published. Also, the text in the NETWORK section of datasheets needs to be changed to add some new text and data as described in first part of the mockup associated with the change request (see the below links to the original CRs for the mockup). ***The changes to the text on the line with the hyperlink "here" will require that the newweb/ngsweb CGI Perl scripts related to datasheets be updated and released along with this release of datasheet95.***

Textual changes are also needed on the lna_ret report to reflect the changes on the main datasheet page. A new hyperlink is also needed on the lna_ret report for "Geospatial Positioning Accuracy Standards". It will point to http://www.fgdc.gov/standards/projects/FGDC-standards-projects/accuracy/.

Examples PIDs are AC6803, UA0024.

(2) In datasheet95.w, stations designated as H-T (i.e. horizontal trigonometric leveling) should be published in the “Superseded Survey Control” section of datasheets. H-Bs (i.e. horizontal bench marks), and H-G-2s (horizontal HT_MODs), will supersede H-Ts. H-G-0s (i.e. horizontal non height mod) will have the adjustment date check implemented as to which elevation is the latest; this date check is important for the sort order of elevations in the superseded section of datasheets.

The definition of a Horizontal Trigonometric Leveling elevation in the NGSIDB is ELEVATION.ELEV_SOURCE=’H’ and ELEVATION.ELEV_TECH=’T’.

The definition of a Horizontal Benchmark elevation in the NGSIDB is ELEVATION.ELEV_SOURCE=’H’ and ELEVATION.ELEV_TECH=’B’.

The definition of a Horizontal HT_MOD in the NGSIDB is ELEVATION.ELEV_SOURCE=’H’ and ELEVATION.ELEV_TECH=’G’ and GPS_HT_PRECISION.CODE=2.

The definition of a Horizontal Non-HT_MOD in the NGSIDB is ELEVATION.ELEV_SOURCE=’H’ and ELEVATION.ELEV_TECH=’G’ and GPS_HT_PRECISION.CODE=0.

An example PID where H-Ts are not showing up in the superseded section is JO0506. This particular PID’s H-T is in datum NGVD29 (i.e. 29). H-Ts appear in several datums as shown in the below SQL query:

```
select distinct DATUM from ELEVATION where ELEV_SOURCE='H' and
ELEV_TECH='T';
```

DATUM
LT
88
29
G1

Therefore we need to check other example PIDs in each of these datums to show that the H-T superseded issue has been taken care of. These other example PIDs that will be used in the tests are:
EC1892, EC2495, DE1780 for the 88 datum
TT3769, EZ2087, EB1434 for the 29 datum
TU0026, AI9866, AI9864 for the LT datum
TW0465, TW0482, TW0439 for G1 datum

(3) Update the dsdata.txt file associated with datasheets for the text field, HD_HELD1. The old text was:

```
Differentially corrected hand held GPS observations.
```

The new text is:

```
Differentially corrected hand held GPS observations or other comparable
positioning techniques.
```

Version 8.5 released at 5:06pm on 06/12/2014

This release encompasses 9 changes:

(1) CORS are being set up on oil rigs 3 miles off the coast of the US and it is necessary to expand the STATES table to accommodate them to ensure the accuracy of the datasheet. While there are no states in the middle of the ocean, there are US Exclusive Economic Zones (EEZs). State-owned submerged land usually extends 3 nautical miles from the coastline, then the "seabed" becomes the ownership of the US EEZ outward to 200 nautical miles. See:

http://www.gc.noaa.gov/images/gcil_gis_marineboundaries.jpg
http://www.csc.noaa.gov/mbwg/_pdf/products/State.Seaward.Boundary.pdf
http://www.boem.gov/Regulations/BOEM-Governing-Statutes.aspx

Beyond 3 miles, therefore, the state code would be used only to decide which of the three NAD83 transformations to use:

A state code of U1 will be used for US Economic Exclusion Zone U1 for NAD83 2011.
A state code of U2 will be used for US Economic Exclusion Zone U2 for NAD83 MA11.
A state code of U3 will be used for US Economic Exclusion Zone U3 for NAD83 PA11.

The datasheet software should suppress the state and county identifiers beyond 3 miles offshore
printing instead the US Exclusive Economic Zone.

Currently there are 2 control points in the U1 EEZ: AJ8053 (ARP for CORS site COVX) and DE6582 (ARP for CORS site HARV). The L1 Phase Centers associated with COVX are DN4596 and AJ8054 (which is no longer published since it was replaced with the new L1 Phase Center of DN4596). The L1 Phase Center and Reference Monument associated with HARV are DE6581 and DE6582. There are no control points currently for the U2 EEZ or U3 EEZ in the NGSIDB.

As per the CORS team, the SPC data should display on the datasheet but the UTM data should not for any control point in an EEZ. As per a conversation on 11/13/2013, datasheets where the CORS type is ARP, L1 Phase Center, or Offset Monument and also have a best position where the position source is adjusted should display SPC and UTM data on them.

(2) In datasheet V8.3, it was requested that the STATE/COUNTY and COUNTRY lines be modified as follows: *Add the name of the COUNTRY and STATE/PROVINCE in addition to the GNIS code to NGS data sheets for CANADA and other Countries. The names of the States/provinces already exist in the NGSIDB. For Countries that do not have State identifiers, just the Country GNIS code and Country Name should be printed and if the Country has an "Unidentified Province/State" code in the STATES table, print that state code and the name associated with it.*

Later on there was an email addendum to this original request and it appeared that the request was changed to:

Make sure the STATE/COUNTY and COUNTRY lines on the datasheet for all countries outside of the US come out in the following format:

```
STATE/COUNTY- <state_name>
COUNTRY     - <country_name>
```

versus

```
STATE/COUNTY- <state_code>/<county_name>
COUNTRY     - <country_code>
```

Two PIDs where this issue still persisted were: AB9540 (in Aruba) and AB9264 (in Curacao).

(3) There was an earthquake in American Samoa in Nov of 2009 which affected positions and heights by as much as a decimeter. As a new position has become available for the CORS on the island which controls all the GPS mark positions, a new readjustment to PA2011 for the island has been done and entered in the database. All mark positions are now consistent with the newly published CORS position and it is recommended that a note be added to all data sheets of American Samoa GPS points and the CORS data sheet for ASPA. In this request:

(a) If a datasheet is requested for the CORS ARP of AJ5871 *(UID is 11573406)* then display the message:

```
<PID>.The current NAD 83 position and ellipsoid height were revised in
<PID>.February 2013 to account for displacement due to the September 29,
<PID>.2009 Samoa Island earthquake.
```

This message should also display whenever a datasheet is requested for DK7460, the ARPs *associated publishable* L1 Phase Center. If this antenna gets replaced at a later date, then the new L1 Phase Center should display the message above. To find out what the *associated publishable* L1 Phase Center is for a CORS ARP, simply run the following SQL:

Find the CORS_NAME associated with the ARP.

```
1> select * from CORS_GROUP where UID=11573406 (this is the ARPs
UID)
2> go

 UID         CORS_NAME CORS_TYPE
 ----------- --------- ---------
    11573406 ASPA      A
```

Get all of the components of the CORS (ARP, L1 Phase Centers, Monuments, Reference Marks).

```
1> select * from CORS_GROUP where CORS_NAME="ASPA"
2> go
 UID         CORS_NAME CORS_TYPE
 ----------- --------- ---------
```

```
11459204 ASPA      R (This is a reference mark)
11573406 ASPA      A (This is an ARP)
11573407 ASPA      L (This is an L1 Phase Center)
11580421 ASPA      R (This is a reference mark)
11624397 ASPA      L (This is an L1 Phase Center)
```

Note: a monument would be designated with a CORS_TYPE of M in the table above.

See which one of the L1 Phase Centers is the active/publishable one.

```
1> select * from CORS_PUB_STATUS where LPC_UID in (11573407,
11624397)
2> go

 LPC_UID     PUB
 ----------- ---
    11573407 N
    11624397 Y (Y means Yes it is publishable)
```

The PID for UID=11573407 is AJ5872 (the former antenna that is now defunct/decommissioned but that NGS still tracks in the database) and the PID for UID=11624397 is DK7460 (the active/current and publishable antenna).

(b) For all other datasheets in American Samoa that are GPSed, the message:

```
<PID>.The current NAD 83 position and ellipsoid height are consistent
<PID>.with AMERICAN SAMOA COR ASPA coordinates revised in February 2013
<PID>.to account for displacement due to the September 29, 2009 Samoa
<PID>.Island earthquake.
<PID>.The PID for the ASPA CORS ARP is AJ5871.
<PID>.The PID for the ASPA L1 Phase Center is DK7460.
```

should be displayed. This applies to datasheets for passive control points that are GPSed as well as other CORS sites (all are GPSed) in American Samoa. This message should be attached to all GPS stations (current and future) in American Samoa.

(4) The datasheet95 program displays the message:

```
* POSTED <v_rate>, SEE BELOW
```

if the ELEVATION.ELEV_SOURCE is "P" (for Posted) along with one of 8 possible messages which are based on this field as well as what the ELEVATION.ERR_DIST (a.k.a. vrate, a calculated field) and ELEVATION.REDUNDANCY fields contain.

Message #	vrate	Redundancy	Message	Sample PID
1	Between 0.0 and 1.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code A indicates a distribution <PID>.rate of 0.0 thru 1.0 mm/km. <PID>	DG6930
2	Between 1.1 and 2.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code B indicates a distribution <PID>.rate of 1.1 thru 2.0 mm/km. <PID>	EW2570
3	Between 2.1 and 3.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code C indicates a distribution <PID>.rate of 2.1 thru 3.0 mm/km. <PID>	OA0360
4	Between 3.1 and 4.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code D indicates a distribution <PID>.rate of 3.1 thru 4.0 mm/km. <PID>	CE0075
5	Between 4.1 and 8.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code E indicates a distribution <PID>.rate of 4.1 thru 8.0 mm/km. <PID>	JA1023
6	Greater than 8.0 mm/km	N/A	<PID>.* This is a POSTED BENCH MARK height. Code F indicates a distribution <PID>.rate greater than 8.0 mm/km. <PID>	BC0899
7	NC	C	<PID>.* This is a POSTED BENCH MARK height. Code NC indicates the bench mark <PID>.was located on a no-check spur therefore a value was not computed. <PID> <PID>.No vertical observational check was made to the station.	OD0336
8	NC	N	<PID>.* This is a POSTED BENCH MARK height. Code NC indicates the bench mark <PID>.was located on a no-check spur therefore a value was not computed. <PID> <PID>.No vertical observational check was made to the station.	DV0931

The datasheet95 program also displays the message:

```
* READJUSTED, <vrate>, SEE BELOW
```

if the ELEVATION.ELEV_SOURCE is "M" (for Readjusted)) 8 possible messages which are based on this field as well as what the ELEVATION.ERR_DIST (a.k.a. vrate, a calculated field) and ELEVATION.REDUNDANCY fields contain.

Message #	vrate	Redundancy	Message	Sample PID
1	Between 0.0 and 1.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code A indicates a distribution <PID>.rate of 0.0 thru 1.0 mm/km. <PID>	EW5132
2	Between 1.1 and 2.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code B indicates a distribution <PID>.rate of 1.1 thru 2.0 mm/km. <PID>	EW2571
3	Between 2.1 and 3.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code C indicates a distribution <PID>.rate of 2.1 thru 3.0 mm/km. <PID>	EW2599
4	Between 3.1 and 4.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code D indicates a distribution <PID>.rate of 3.1 thru 4.0 mm/km. <PID>	DW1191
5	Between 4.1 and 8.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code E indicates a distribution <PID>.rate of 4.1 thru 8.0 mm/km. <PID>	DW1231
6	Greater than 8.0 mm/km	N/A	<PID>.* This is a READJUSTED BENCH MARK height. Code F indicates a distribution <PID>.rate greater than 8.0 mm/km. <PID>	EV2077
7	NC	C	<PID>.* This is a READJUSTED BENCH MARK height. Code NC indicates the bench mark <PID>.was located on a no-check spur therefore a value was not computed. <PID> <PID>.No vertical observational check was made to the station.	DC0795
8	NC	N	<PID>.* This is a READJUSTED BENCH MARK height. Code NC indicates the bench mark <PID>.was located on a no-check spur therefore a value was not computed. <PID> <PID>.No vertical observational check was made to the station.	ER0053

The messages above should be modified to eliminate the sections highlighted in red since the vrate will no longer be calculated and inserted into the ELEVATION table's ERR_DIST field via the ld_vhts5 program. Ajit Singh stated that the vrate field data is ‘inadmissible’.

Also as part of (4) above, the dsdata.txt file was updated. Please see the test document for more specifics as to how it changed.

(5) Make sure that that the positions with historical horizontal datums appear as the last set of positions in the SUPERSEDED SURVEY CONTROL section . For PID HV7698, the superseded position with USBS is appearing at the top of the list and needs to be grouped with the USSD superseded position at the bottom of the list.

In earlier versions of datasheet it appears incorrectly as follows:

```
HV7698                          SUPERSEDED SURVEY CONTROL
HV7698
HV7698  USBS         -  38 53 25.60000(N)    076 59 40.98000(W) AD(       ) 3
HV7698  NAD 83(1991)-  38 53 29.02790(N)    076 59 58.62066(W) AD(       ) 1
HV7698  NAD 83(1986)-  38 53 29.02710(N)    076 59 58.63166(W) AD(       ) 1
HV7698  NAD 27       -  38 53 28.63000(N)    076 59 59.70000(W) AD(       ) 1
HV7698  USSD         -  38 53 28.96100(N)    076 59 59.54300(W) AD(       ) 3
```

The fix should in datasheet95 V8.5 should look like:

```
HV7698                          SUPERSEDED SURVEY CONTROL
HV7698
HV7698  NAD 83(1991)-  38 53 29.02790(N)    076 59 58.62066(W) AD(       )
HV7698  NAD 83(1986)-  38 53 29.02710(N)    076 59 58.63166(W) AD(       ) 1
HV7698  NAD 27       -  38 53 28.63000(N)    076 59 59.70000(W) AD(       ) 1
HV7698  USBS         -  38 53 25.60000(N)    076 59 40.98000(W) AD(       ) 3
HV7698  USSD         -  38 53 28.96100(N)    076 59 59.54300(W) AD(       ) 3
```

6. Make sure that all superseded control is included on CORS datasheets. An example of this is PID AF9520.

7. Remove excess spacing on the “Orthometric Height” line on datasheets where the word “ (meters)” has too much leading space in it. Note: This was not a typo. During the time that we were updating the dynamic regions/subsidence areas in the Southern US, it was requested that we have 3 options for this “word”. The options are:

a. "**(meters)" - two leading star characters; comes out whenever we are in the subsidence area and the mark is not publishable within this area. No change is needed on this option. An example PID where this displays on the datasheet is AU1176.

```
AU1176* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
```

b. " (+/-2cm)" - two leading blanks; displays if the mark is VERTCONed. We need to remove one of the leading blanks so we get “ (+/-2cm)”. An example PID where the extra blank occurs is TO1170. The issue also presents itself in the word “ (feet)”.

```
TO1170* NAVD 88 ORTHO HEIGHT -  750.03   (+/-2cm)     2460.7  (feet)  VERTCON
```

c. " (meters)" - two leading blanks; displays whenever we are either outside of the subsidence area or the mark is publishable within the subsidence area. We need to remove one of the leading blanks – so we get “ (meters)”. An example PID where the extra blank occurs is BG2082.

```
BG2082* NAVD 88 ORTHO HEIGHT -  2.352    (meters)        7.72 (feet)  ADJUSTED
```

8. Make sure that:
   (a) The Leveled BM (i.e. ELEVATION.ELEV_SOURCE='H' and ELEVATION.ELEV_SOURCE='B') for BJ4658 does not appear twice on the datasheet – once in the CURRENT SURVEY CONTROL section and once in the SUPERSEDED SURVEY CONTROL section. An H-T (i.e. ELEVATION.ELEV_SOURCE='H' and ELEVATION.ELEV_TECH='T') is not printable at this time in the SUPERSEDED SURVEY CONTROL section due to a rule initiated in a prior version of datasheet95. The adjusted height for RM0895 is in the CURRENT SURVEY CONTROL section and not the SUPERSEDED SURVEY CONTROL section. Currently the GPS_OBS (ELEVATION.ELEV_SOURCE='H' and ELEVATION.ELEV_TECH='G') is winning as the best height instead of the adjusted height (ELEVATION.ELEV_SOURCE='A') for RM0895.

Notes: In order to make the necessary changes in #8a above, there is a subsequent change that must occur in the superseded section (or else fixing #8a would not be doable). The resulting changes are as follows:

Control points that have superseded heights where the datum is in (29, AS, G1, GU, LT, NM, PR) and their ELEV_SOURCE/ELEV_TECH combinations are A/N, H/B, H/G will have ***all of these matching superseded heights display in the SUPERSEDED SURVEY CONTROL section of datasheets***. Example PIDs are AA0028, AA0134, AC1045, AD2617, ED0346, MB1088, DE5505, DE5588,TU0236, TU0222, TU0029, TU0224, TU0284, TU0187, TU0181, TU0208, TU0291, TU0292, TU0185, TU0179, TU0231, TU0233, TU0288. Please see the notes in the test document https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V8.5/DATASHEET95_V8_5_Tests.docx after test 8b for more information.

9. Update the dynamic region projects and the dynamic region project state combos.

The dynamic region projects now will contain the following list of publishable projects in the Gulf Coast Dynamic Regions/Subsidence Areas:

Project	Epoch
00000729/1	2009.55
00000729/2	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
GPS2329	2006.81
GPS2100	2004.65
GPS2021/C	2004.65
GPS2212	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2262	2004.65
GPS2896/B	2009.55
GPS2896/C	2009.55
GPS2995	2009.55
GPS2995/B	2009.55

New records in this file are highlighted in green.

The dynamic region project state combos now will contain the following listing of valid project/state combinations in the Gulf Coast Dynamic Regions/Subsidence Areas:

Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000731	FL
00000732	TX
00000772	MS
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL
GPS2995	LA
GPS2995/B	LA

New records in this file are highlighted in green.

Version 8.4 released at 11:43am on 05/08/2014

This release encompasses 2 change requests and 3 additional issues:

1. Fix the datasheets that have two different scenarios:
   - Where a limited number of datasheets are not being VERTCONed when they should be. An example PID for this issue is TO1170.
   - Where the Reference Marks and the Primary Azimuth are jumbled up on some datasheets. An example PID for this issue is GW0408.

   The problems stem from the difference in how Oracle sorts the database tables vs how Sybase sorts them, and also in how Oracle retrieves data with inner and outer joins differently that in Sybase.

   The partial datasheet for TO1170 BEFORE it was corrected is shown below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 30, 2013
 TO1170 ***********************************************************************
 TO1170  CBN         -  This is a Cooperative Base Network Control Station.
 TO1170  DESIGNATION -  LOON LAKE
 TO1170  PID         -  TO1170
 TO1170  STATE/COUNTY-  WA/STEVENS
 TO1170  COUNTRY     -  US
 TO1170  USGS QUAD   -  SPRINGDALE (1980)
 TO1170
 TO1170                        *CURRENT SURVEY CONTROL
 TO1170  ______________________________________________________________________
 TO1170* NAD 83(2011) POSITION- 48 04 50.69210(N) 117 37 51.53769(W)   ADJUSTED

 TO1170* NAD 83(2011) ELLIP HT-   732.014 (meters)        (06/27/12)   ADJUSTED
 TO1170* NAD 83(2011) EPOCH   -  2010.00
 TO1170* NAVD 88 ORTHO HEIGHT -   749.     (meters)    2457.    (feet) SCALED

 TO1170  ______________________________________________________________________
 TO1170  NAD 83(2011) X  - -1,980,102.210 (meters)                     COMP
 TO1170  NAD 83(2011) Y  - -3,782,602.881 (meters)                     COMP
 TO1170  NAD 83(2011) Z  -  4,723,424.056 (meters)                     COMP
 TO1170  LAPLACE CORR    -          7.49  (seconds)                    DEFLEC12A
 TO1170  GEOID HEIGHT    -        -18.01  (meters)                     GEOID12A
 TO1170
 TO1170  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 TO1170  Type                                          Horiz  Ellip  Dist(km)
 TO1170  ----------------------------------------------------------------------
 TO1170  NETWORK                                        1.99   2.80
 TO1170  ----------------------------------------------------------------------
 TO1170  MEDIAN LOCAL ACCURACY AND DIST (006 points)   2.12   3.12     41.56
 TO1170  ----------------------------------------------------------------------
 TO1170  NOTE: Click here for information on individual local accuracy
 TO1170  values and other accuracy information.
 TO1170
 TO1170
 TO1170.The horizontal coordinates were established by GPS observations
 TO1170.and adjusted by the National Geodetic Survey in June 2012.
 TO1170
 TO1170.NAD 83(2011) refers to NAD 83 coordinates where the reference
 TO1170.frame has been affixed to the stable North American tectonic plate. See
 TO1170.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 TO1170
 TO1170.The horizontal coordinates are valid at the epoch date displayed above
 TO1170.which is a decimal equivalence of Year/Month/Day.
 TO1170
 TO1170.The orthometric height was scaled from a topographic map.
```

The partial datasheet for TO1170 AFTER it was corrected is shown below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 30, 2013
 TO1170 ***********************************************************************
 TO1170  CBN         -  This is a Cooperative Base Network Control Station.
 TO1170  DESIGNATION -  LOON LAKE
 TO1170  PID         -  TO1170
 TO1170  STATE/COUNTY-  WA/STEVENS
 TO1170  COUNTRY     -  US
 TO1170  USGS QUAD   -  SPRINGDALE (1980)
 TO1170
 TO1170                        *CURRENT SURVEY CONTROL
 TO1170  ______________________________________________________________________
 TO1170* NAD 83(2011) POSITION- 48 04 50.69210(N) 117 37 51.53769(W)   ADJUSTED

 TO1170* NAD 83(2011) ELLIP HT-   732.014 (meters)        (06/27/12)   ADJUSTED
 TO1170* NAD 83(2011) EPOCH    -  2010.00
 TO1170* NAVD 88 ORTHO HEIGHT -   749.     (meters)    2457.    (feet) VERTCON

 TO1170  ______________________________________________________________________
 TO1170  NAD 83(2011) X  - -1,980,102.210 (meters)                     COMP
 TO1170  NAD 83(2011) Y  - -3,782,602.881 (meters)                     COMP
 TO1170  NAD 83(2011) Z  -  4,723,424.056 (meters)                     COMP
 TO1170  LAPLACE CORR    -          7.49  (seconds)                    DEFLEC12A
 TO1170  GEOID HEIGHT    -        -18.01  (meters)                     GEOID12A
 TO1170
 TO1170  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 TO1170  Type                                           Horiz  Ellip  Dist(km)
 TO1170  ----------------------------------------------------------------------
 TO1170  NETWORK                                         1.99   2.80
 TO1170  ----------------------------------------------------------------------
 TO1170  MEDIAN LOCAL ACCURACY AND DIST (006 points)    2.12   3.12     41.56
 TO1170  ----------------------------------------------------------------------
 TO1170  NOTE: Click here for information on individual local accuracy
 TO1170  values and other accuracy information.
 TO1170
 TO1170
 TO1170.The horizontal coordinates were established by GPS observations
 TO1170.and adjusted by the National Geodetic Survey in June 2012.
 TO1170
 TO1170.NAD 83(2011) refers to NAD 83 coordinates where the reference
 TO1170.frame has been affixed to the stable North American tectonic plate. See
 TO1170.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 TO1170
 TO1170.The horizontal coordinates are valid at the epoch date displayed above
 TO1170.which is a decimal equivalence of Year/Month/Day.
 TO1170
 TO1170.The NAVD 88 height was computed by applying the VERTCON shift value to
 TO1170.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
```

The partial datasheet for GW0408 BEFORE it was corrected is shown below.

```
 GW0408:                Primary Azimuth Mark                     Grid Az
 GW0408:SPC VA S     -  FARMVILLE MUNICIPAL TANK                 097 19 36.9
 GW0408:UTM  17      -  FARMVILLE MUNICIPAL TANK                 095 48 39.7
 GW0408
 GW0408|-----------------------------------------------------------------------|
 GW0408| PID    Reference Object                    Distance      Geod. Az  |
 GW0408|                                                          dddmmss.s |
 GW0408| GW2330 FARMVILLE MUNICIPAL TANK          APPROX.10.0 KM 0971947.1 |
 GW0408| GW0409 TUGGLE RM 2                        27.407 METERS 12827     |
 GW0408| GW0411 TUGGLE AZ MK 2                                   29619     |
 GW0408| GW0407 TUGGLE RM 1                        22.175 METERS 35606     |
 GW0408|-----------------------------------------------------------------------|
```

The partial datasheet for GW0408 AFTER it was corrected is shown below.

```
GW0408:                Primary Azimuth Mark                      Grid Az
GW0408:SPC VA S      -  TUGGLE AZ MK                             295 49 46.8
GW0408:UTM  17       -  TUGGLE AZ MK                             294 18 49.6
GW0408
GW0408|-----------------------------------------------------------------------|
GW0408| PID    Reference Object                      Distance      Geod. Az  |
GW0408|                                                            dddmmss.s |
GW0408| GW2330 FARMVILLE MUNICIPAL TANK            APPROX.10.0 KM 0971947.1 |
GW0408| GW0409 TUGGLE RM 2                          27.407 METERS 12827     |
GW0408| GW0410 TUGGLE AZ MK                                       2954957.0 |
GW0408| GW0411 TUGGLE AZ MK 2                                     29619     |
GW0408| GW0407 TUGGLE RM 1                          22.175 METERS 35606     |
GW0408|-----------------------------------------------------------------------|
```

2. Remove any recovery from the datasheet with a project source of GPS1909 or 1909. This issue was a bit more complex than originally conceived. The email transactions between OAD and SDD found here https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V8.4/CR-DS 1909 recoveries addendum.doc and here https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V8.4/CR-DS 1909 recoveries addendum2.doc clarify the issues and solution.

   Oracle and Sybase sort records in some of the tables in NGSIDB differently than expected. This caused HISTORY records with null (i.e. signified by "UNK" on the datasheet in the HISTORY section) to fall at the end of the sorted list. This is not what is desired. There are two scenarios possible in dealing with "UNK" records:

   Scenario #1: if the HISTORY.REPORT_DATE is null and the HISTORY.COND is null and there is descriptive text in the TEXT table for the HISTORY.REPORT_ID, then include this history record in the list of histories to be printed out on the datasheet, along with its associated descriptive text. In this case, if any "UNK" records should be placed in the HISTORY section immediately after the MONUMENTED/original setting (i.e. HISTORY.COND='S') and before any HISTORY records with HISTORY.COND in (G, N, O, P, X, Y, Z). ***An example of this is PID MG0369.***

   The HISTORY records for MG0369 (i.e. UID=10441067) are:

REPORT_DATE	REPORT_ID	LOAD_ID	UID	COND	AGENCY	COP	SAT_USE	TRANSPOR	PACK_TIME	REPORT_TYPE	T_STATUS
	949212	0	10441067		RIRR					V	C
	949213	0	10441067	S	USE					S	I
19960611	2508231	7441	10441067	N	USPSQD					I	N
19960819	2507694	7426	10441067	G	USPSQD					I	D

   The one in red is a record where the REPORT_DATE is null and the COND is null. It has descriptive text in the TEXT table whenever the query below is run:

   select * from TEXT where REPORT_ID=949212;

REPORT_ID	SEQ_NO	LINE
949212	1	AT ROCK ISLAND.

```
949212  2       AT ROCK ISLAND, ROCK ISLAND COUNTY, ON THE CHICAGO, ROCK ISLAND
949212  3       AND PACIFIC RAILWAY, OPPOSITE THE STATION, IN THE NORTH SIDE OF
949212  4       THE BUILDING OCCUPIED IN 1944 BY BEST RECAP AND TIRE CO., AT THE
949212  5       NORTHEAST CORNER OF THE FOUNDATION, AND IN THE UPPER FOUNDATION
949212  6       STONE.  THE CENTER OF A COPPER BOLT SET HORIZONTALLY AND SURROUNDED
949212  7       BY THE LETTERS USPBM CUT IN THE STONE.
```

Thus, this history record in red *should* appear on the datasheet and the descriptive text should appear on the datasheet and below the MONUMENTED (i.e HISTORY.COND='S') history record.

The partial datasheet for MG0369 BEFORE it was corrected is shown below.

```
MG0369  HISTORY     - Date     Condition        Report By
MG0369  HISTORY     - UNK      MONUMENTED       USE
MG0369  HISTORY     - 19960611 MARK NOT FOUND   USPSQD
MG0369  HISTORY     - 19960819 GOOD             USPSQD
MG0369  HISTORY     - UNK      SEE DESCRIPTION  RIRR
MG0369
MG0369                          STATION DESCRIPTION
MG0369
MG0369'DESCRIBED BY US POWER SQUADRON 1996
MG0369'MARK NOT FOUND.
MG0369
MG0369                          STATION RECOVERY (1996)
MG0369
MG0369'RECOVERY NOTE BY US POWER SQUADRON 1996
MG0369'RECOVERED IN GOOD CONDITION.
MG0369
MG0369                          STATION RECOVERY (UNK )
MG0369
MG0369'RECOVERY NOTE BY ROCK ISLAND RAILROAD UNK
MG0369'AT ROCK ISLAND.
MG0369'AT ROCK ISLAND, ROCK ISLAND COUNTY, ON THE CHICAGO, ROCK ISLAND
MG0369'AND PACIFIC RAILWAY, OPPOSITE THE STATION, IN THE NORTH SIDE OF
MG0369'THE BUILDING OCCUPIED IN 1944 BY BEST RECAP AND TIRE CO., AT THE
MG0369'NORTHEAST CORNER OF THE FOUNDATION, AND IN THE UPPER FOUNDATION
MG0369'STONE.  THE CENTER OF A COPPER BOLT SET HORIZONTALLY AND SURROUNDED
MG0369'BY THE LETTERS USPBM CUT IN THE STONE.
```

The partial datasheet for MG0369 AFTER it was corrected is shown below.

```
MG0369  HISTORY     - Date     Condition        Report By
MG0369  HISTORY     - UNK      MONUMENTED       USE
MG0369  HISTORY     - UNK      SEE DESCRIPTION  RIRR
MG0369  HISTORY     - 19960611 MARK NOT FOUND   USPSQD
MG0369  HISTORY     - 19960819 GOOD             USPSQD
MG0369
MG0369                          STATION DESCRIPTION
MG0369
MG0369'DESCRIBED BY ROCK ISLAND RAILROAD UNK
MG0369'AT ROCK ISLAND.
MG0369'AT ROCK ISLAND, ROCK ISLAND COUNTY, ON THE CHICAGO, ROCK ISLAND
MG0369'AND PACIFIC RAILWAY, OPPOSITE THE STATION, IN THE NORTH SIDE OF
MG0369'THE BUILDING OCCUPIED IN 1944 BY BEST RECAP AND TIRE CO., AT THE
MG0369'NORTHEAST CORNER OF THE FOUNDATION, AND IN THE UPPER FOUNDATION
MG0369'STONE.  THE CENTER OF A COPPER BOLT SET HORIZONTALLY AND SURROUNDED
MG0369'BY THE LETTERS USPBM CUT IN THE STONE.
```

```
MG0369
MG0369                          STATION RECOVERY (1996)
MG0369
MG0369'RECOVERY NOTE BY US POWER SQUADRON 1996
MG0369'MARK NOT FOUND.
MG0369
MG0369                          STATION RECOVERY (1996)
MG0369
MG0369'RECOVERY NOTE BY US POWER SQUADRON 1996
MG0369'RECOVERED IN GOOD CONDITION.
```

Scenario #2: If the HISTORY.REPORT_DATE is null and the HISTORY.COND is null and there is no descriptive text in the TEXT table for the HISTORY.REPORT_ID, then exclude this history record in the list of histories from the datasheet and also exclude the descriptive text associated with it from the datasheet as well. ***An example of this is PID HV0450*.**

The HISTORY records for HV0450 (i.e. UID=10154135) are:

REPORT _DATE	UID	REPORT _ID	LOAD_ID	COND	AGENCY	COP	SAT _USE	TRANSPOR	PACK _TIME	REPORT _TYPE	T_STATUS
	10154135	2978181	271961		GEOCAC					N	N
1971	10154135	339276	0	S	NGS					V	C
20010215	10154135	2708749	109945	G	MDSHA	SFK	N	C	00	N	C
20060225	10154135	2779552	160707	G	USPSQD	NLH	Y			W	I
20070225	10154135	2816753	188009	G	USPSQD	NH	Y			W	N

The one in red is a record where the REPORT_DATE is null and the COND is null. It has no descriptive text in the TEXT table whenever the query below is run:

select * from TEXT where REPORT_ID=2978181;

Thus, this history record in *red* should not appear on the datasheet and no default descriptive text should be generated/appear on the datasheet either.

The partial datasheet for HV0450 BEFORE it was corrected is shown below.

```
HV0450  HISTORY     - Date     Condition        Report By
HV0450  HISTORY     - 1971     MONUMENTED       NGS
HV0450  HISTORY     - 20010215 GOOD             MDSHA
HV0450  HISTORY     - 20060225 GOOD             USPSQD
HV0450  HISTORY     - 20070225 GOOD             USPSQD
HV0450  HISTORY     - UNK      SEE DESCRIPTION  GEOCAC
HV0450
HV0450                          STATION DESCRIPTION
HV0450
HV0450'DESCRIBED BY NATIONAL GEODETIC SURVEY 1971
HV0450'1.8 MI SW FROM GOLDEN HILL.
HV0450'ABOUT 1.85 MILES SOUTHWEST ALONG STATE HIGHWAY 335 FROM THE
HV0450'SOUTH JUNCTION OF SMITHVILLE ROAD AT GOLDEN HILL, NEAR THE
HV0450'SOUTHWEST CORNER OF THE ST. PETERS METHODIST CHURCH AND
HV0450'CEMETERY, 47 1/2 FEET EAST OF THE CENTER LINE OF THE HIGHWAY,
HV0450'69.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF THE RUBEN PRICHETT
HV0450'CONCRETE VAULT, 55.3 FEET SOUTH-SOUTHWEST OF THE SOUTHWEST CORNER
HV0450'OF THE MAIN BUILDING OF THE CHURCH, 28.5 FEET EAST OF THE SOUTHWEST
HV0450'CORNER OF A FENCE, 1 FOOT NORTH OF THE FENCE, 1.4 FEET EAST OF
```

```
HV0450'A METAL WITNESS POST, AND ON THE TOP OF A COPPER COATED ROD
HV0450'THAT IS LEVEL WITH THE GROUND AND IS PROTECTED BY A 6-INCH METAL
HV0450'PIPE PROJECTING 1 INCH.  THE ROD WAS DRIVEN TO REFUSAL AT A
HV0450'DEPTH OF 35 FEET.
HV0450
HV0450                          STATION RECOVERY (2001)
HV0450
HV0450'RECOVERY NOTE BY MARYLAND DOT HIGHWAY ADMINISTRATION 2001 (SFK)
HV0450'RECOVERED AS DESCRIBED.
HV0450
HV0450                          STATION RECOVERY (2006)
HV0450
HV0450'RECOVERY NOTE BY US POWER SQUADRON 2006 (NLH)
HV0450'THERE IS NO LONGER A FENCE. MARK IS 8 FEET SOUTHWEST OF A NEW GRAVE
HV0450'SITE, JOHN E. KEENE.
HV0450
HV0450                          STATION RECOVERY (2007)
HV0450
HV0450'RECOVERY NOTE BY US POWER SQUADRON 2007 (NH)
HV0450'RECOVERED IN GOOD CONDITION.
HV0450
HV0450                          STATION RECOVERY (UNK )
HV0450
HV0450'RECOVERY NOTE BY GEOCACHING UNK
```

The partial datasheet for HV0450 AFTER it was corrected is shown below. You should not see the HISTORY record with "UNK" nor the associated descriptive text on the datasheet below.

```
HV0450  HISTORY     - 1971     MONUMENTED       NGS
HV0450  HISTORY     - 20010215 GOOD             MDSHA
HV0450  HISTORY     - 20060225 GOOD             USPSQD
HV0450  HISTORY     - 20070225 GOOD             USPSQD
HV0450
HV0450                          STATION DESCRIPTION
HV0450
HV0450'DESCRIBED BY NATIONAL GEODETIC SURVEY 1971
HV0450'1.8 MI SW FROM GOLDEN HILL.
HV0450'ABOUT 1.85 MILES SOUTHWEST ALONG STATE HIGHWAY 335 FROM THE
HV0450'SOUTH JUNCTION OF SMITHVILLE ROAD AT GOLDEN HILL, NEAR THE
HV0450'SOUTHWEST CORNER OF THE ST. PETERS METHODIST CHURCH AND
HV0450'CEMETERY, 47 1/2 FEET EAST OF THE CENTER LINE OF THE HIGHWAY,
HV0450'69.0 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF THE RUBEN PRICHETT
HV0450'CONCRETE VAULT, 55.3 FEET SOUTH-SOUTHWEST OF THE SOUTHWEST CORNER
HV0450'OF THE MAIN BUILDING OF THE CHURCH, 28.5 FEET EAST OF THE SOUTHWEST
HV0450'CORNER OF A FENCE, 1 FOOT NORTH OF THE FENCE, 1.4 FEET EAST OF
HV0450'A METAL WITNESS POST, AND ON THE TOP OF A COPPER COATED ROD
HV0450'THAT IS LEVEL WITH THE GROUND AND IS PROTECTED BY A 6-INCH METAL
HV0450'PIPE PROJECTING 1 INCH.  THE ROD WAS DRIVEN TO REFUSAL AT A
HV0450'DEPTH OF 35 FEET.
HV0450
HV0450                          STATION RECOVERY (2001)
HV0450
HV0450'RECOVERY NOTE BY MARYLAND DOT HIGHWAY ADMINISTRATION 2001 (SFK)
HV0450'RECOVERED AS DESCRIBED.
HV0450
HV0450                          STATION RECOVERY (2006)
HV0450
HV0450'RECOVERY NOTE BY US POWER SQUADRON 2006 (NLH)
HV0450'THERE IS NO LONGER A FENCE. MARK IS 8 FEET SOUTHWEST OF A NEW GRAVE
HV0450'SITE, JOHN E. KEENE.
```

```
HV0450
HV0450                          STATION RECOVERY (2007)
HV0450
HV0450'RECOVERY NOTE BY US POWER SQUADRON 2007 (NH)
HV0450'RECOVERED IN GOOD CONDITION.
```

3. It was discovered that the following PIDs best elevation in the CURRENT SURVEY CONTROL and/or their superseded elevations in the SUPERSEDED SURVEY CONTROL section of their datasheets was incorrect (the best elevation was not being chosen properly and this was also affecting the listing of superseded elevations too): TU1650, AA6240, DE5506, DM7511, AJ8468, and AE8289. Make sure that their best elevation is being shown in the CURRENT SURVEY CONTROL SECTION and that their superseded elevations are showing in the SUPERSEDED SURVEY CONTROL section as well.

   *Note: The elevations for each mark were extracted from the Oracle database and **the best elevation is highlighted in green below**. The elevations that should appear in the SUPERSEDED SURVEY CONTROL section of datasheets are highlighted in purple below.*

PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
TU1650	17289	19860719	LT	U	H	T	1.60	11132190	
TU1650	GPS2274	20061122	LT	U	H	G	1.986	11132190	

```
1         National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
 TU1650 ***********************************************************************
 TU1650  HT_MOD      -  This is a Height Modernization Survey Station.
 TU1650  DESIGNATION -  EWA BEACH
 TU1650  PID         -  TU1650
 TU1650  STATE/COUNTY-  HI/HONOLULU
 TU1650  COUNTRY     -  US
 TU1650  USGS QUAD   -  PEARL HARBOR (1983)
 TU1650
 TU1650                         *CURRENT SURVEY CONTROL
 TU1650  ______________________________________________________________________
 TU1650* NAD 83(PA11) POSITION- 21 18 45.48001(N) 158 00 36.38550(W)   ADJUSTED
 TU1650* NAD 83(PA11) ELLIP HT-    17.793 (meters)        (06/27/12)   ADJUSTED
 TU1650* NAD 83(PA11) EPOCH    -  2010.00
 TU1650* LMSL    ORTHO HEIGHT -     1.99   (meters)        6.5    (feet) GPS OBS
 TU1650  ______________________________________________________________________
 TU1650  LMSL orthometric height was determined with geoid model       GEOID03
 TU1650  GEOID HEIGHT    -         15.31  (meters)                     GEOID03
 TU1650  GEOID HEIGHT    -         15.17  (meters)                     GEOID12A
 TU1650  NAD 83(PA11) X  - -5,512,119.628 (meters)                     COMP
 TU1650  NAD 83(PA11) Y  - -2,225,909.899 (meters)                     COMP
 TU1650  NAD 83(PA11) Z  -  2,303,682.875 (meters)                     COMP
 TU1650  LAPLACE CORR    -          0.33  (seconds)                    DEFLEC12A
 TU1650
 TU1650  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 TU1650  Type                                          Horiz  Ellip  Dist(km)
 TU1650  ----------------------------------------------------------------------
 TU1650  NETWORK                                        1.14   2.55
 TU1650  ----------------------------------------------------------------------
 TU1650  MEDIAN LOCAL ACCURACY AND DIST (019 points)   1.31   2.55      9.38
 TU1650  ----------------------------------------------------------------------
 TU1650  NOTE: Click here for information on individual local accuracy
 TU1650  values and other accuracy information.
 TU1650
 TU1650
 TU1650.The horizontal coordinates were established by GPS observations
 TU1650.and adjusted by the National Geodetic Survey in June 2012.
```

```
TU1650
TU1650.NAD 83(PA11) refers to NAD 83 coordinates where the reference
TU1650.frame has been affixed to the stable Pacific tectonic plate.
TU1650
TU1650.The horizontal coordinates are valid at the epoch date displayed above
TU1650.which is a decimal equivalence of Year/Month/Day.
TU1650
TU1650.The orthometric height was determined by GPS observations and a
TU1650.high-resolution geoid model using precise GPS observation and
TU1650.processing techniques.
TU1650
TU1650.The X, Y, and Z were computed from the position and the ellipsoidal ht.
TU1650
TU1650.The Laplace correction was computed from DEFLEC12A derived deflections.
TU1650
TU1650.The ellipsoidal height was determined by GPS observations
TU1650.and is referenced to NAD 83.
TU1650
TU1650. The following values were computed from the NAD 83(PA11) position.
TU1650
TU1650;                    North         East     Units Scale Factor Converg.
TU1650;SPC HI 3     -    16,161.325   498,951.377   MT  0.99999001   -0 00 13.2
TU1650;UTM  04      - 2,357,070.628   602,666.429   MT  0.99973025   +0 21 35.3
TU1650
TU1650!             -  Elev Factor  x  Scale Factor =   Combined Factor
TU1650!SPC HI 3     -   0.99999720  x   0.99999001  =   0.99998721
TU1650!UTM  04      -   0.99999720  x   0.99973025  =   0.99972745
TU1650
TU1650:                Primary Azimuth Mark                    Grid Az
TU1650:SPC HI 3     -  EWA BEACH AZ MK                         044 27 53.4
TU1650:UTM  04      -  EWA BEACH AZ MK                         044 06 04.9
TU1650
TU1650|---------------------------------------------------------------------|
TU1650| PID    Reference Object                     Distance      Geod. Az  |
TU1650|                                                           dddmmss.s |
TU1650| TU1614 WAIPAHU MILL STACK                APPROX. 8.2 KM 0015844.0 |
TU1650| TU1649 PEARL HARBOR WEST LOCH TANK       APPROX. 4.4 KM 0060715.4 |
TU1650| CJ9442 EWA BEACH AZ MK                                  0442740.2 |
TU1650| CJ9443 EWA BEACH RM 1                     15.360 METERS 19928     |
TU1650| CJ9444 EWA BEACH RM 2                     19.773 METERS 29359     |
TU1650| TU1655 EWA MILL STACK                    APPROX. 4.0 KM 3181259.7 |
TU1650|---------------------------------------------------------------------|
TU1650
TU1650                          SUPERSEDED SURVEY CONTROL
TU1650
TU1650  NAD 83(1993)-  21 18 45.48000(N)    158 00 36.38567(W) AD(2006.00) A
TU1650  ELLIP H (11/22/06)   17.787  (m)                       GP(2006.00) 2 1
TU1650  NAD 83(1993)-  21 18 45.48076(N)    158 00 36.38662(W) AD(1993.62) 1
TU1650  NAD 83(1986)-  21 18 45.42941(N)    158 00 36.39697(W) AD(       ) 1
TU1650  OLD HI      -  21 18 56.81079(N)    158 00 46.27699(W) AD(       ) 1
TU1650
TU1650.Superseded values are not recommended for survey control.
TU1650
TU1650.NGS no longer adjusts projects to the OLD HI datum.
TU1650.See file dsdata.txt to determine how the superseded data were derived.
TU1650
TU1650_U.S. NATIONAL GRID SPATIAL ADDRESS: 4QFJ0266657070(NAD 83)
TU1650
TU1650_MARKER: DO = NOT SPECIFIED OR SEE DESCRIPTION
TU1650_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
TU1650_SP_SET: TOP OF SQUARE CONCRETE MONUMENT
TU1650_STAMPING: EWA BEACH 1969
TU1650_MAGNETIC: N = NO MAGNETIC MATERIAL
```

```
TU1650_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
TU1650+SATELLITE: SATELLITE OBSERVATIONS - July 11, 2004
TU1650
TU1650  HISTORY     - Date     Condition        Report By
TU1650  HISTORY     - 1969     MONUMENTED       CGS
TU1650  HISTORY     - 20040711 GOOD             HIDT
TU1650
TU1650                          STATION DESCRIPTION
TU1650
TU1650'DESCRIBED BY COAST AND GEODETIC SURVEY 1969 (CAA)
TU1650'THE STATION IS LOCATED IN THE TOWN OF EWA BEACH, ABOUT 0.3 MILE
TU1650'SOUTH OF THE CENTER OF TOWN, IN THE SOUTH CORNER OF POHAKEA
TU1650'SCHOOL GROUNDS.
TU1650'
TU1650'TO REACH FROM THE JUNCTION OF PAPIPI ROAD AND FORT WEAVER ROAD
TU1650'(STATE HIGHWAY 76) IN EWA BEACH, GO SOUTH ON FORT WEAVER ROAD FOR
TU1650'0.35 MILE TO A CROSSROAD OF NORTH ROAD AND FORT WEAVER ROAD, TURN
TU1650'LEFT, NORTHERLY, ON NORTH ROAD FOR APPROXIMATELY 75 FEET TO THE
TU1650'STATION ON THE LEFT.  CONTINUE NORTHERLY ON NORTH ROAD FOR 0.35
TU1650'MILE TO THE AZIMUTH MARK ON THE RIGHT.
TU1650'
TU1650'STATION MARK IS A STANDARD DISK STAMPED EWA BEACH 1969 SET IN
TU1650'THE TOP OF A ROUND CONCRETE MONUMENT WHICH IS FLUSH WITH THE
TU1650'SURFACE OF THE GROUND.  THE UNDERGROUND MARK IS CEMENTED IN A DRILL
TU1650'HOLE IN BEDROCK AND IS 2 FEET BELOW THE STATION MARK, IT IS 78
TU1650'FEET NORTHEAST OF THE CENTER OF STATE HIGHWAY 76, 49.4 FEET
TU1650'NORTHWEST OF A POWERLINE POLE, 74 FEET NORTHWEST OF THE CENTER
TU1650'OF NORTH ROAD.
TU1650'
TU1650'REFERENCE MARK 1, A STANDARD DISK STAMPED EWA BEACH NO 1 1969 SET
TU1650'IN A DRILL HOLE IN BEDROCK FLUSH WITH THE SURFACE OF THE GROUND
TU1650'AND ABOUT THE SAME ELEVATION AS THE STATION.  IT IS 52.4 FEET
TU1650'NORTHWEST OF THE CENTER OF NORTH ROAD, 33 FEET NORTH-NORTHEAST OF
TU1650'THE CENTER OF STATE HIGHWAY 76, AND 14 FEET EAST OF A POWERLINE
TU1650'POLE.
TU1650'
TU1650'REFERENCE MARK 2, A STANDARD DISK STAMPED EWA BEACH NO 2 1969,
TU1650'SET IN DRILL HOLE IN BEDROCK FLUSH WITH THE SURFACE OF THE GROUND
TU1650'AND ABOUT THE SAME ELEVATION AS THE STATION.  IT IS 124.8 FEET
TU1650'WEST OF THE CENTER OF NORTH ROAD, 72.4 FEET NORTHWEST OF A
TU1650'POWERLINE POLE, 48 FEET NORTH-NORTHWEST OF THE CENTER OF STATE
TU1650'HIGHWAY 76.
TU1650'
TU1650'AZIMUTH MARK, A STANDARD DISK STAMPED EWA BEACH 1969, SET IN A
TU1650'DRILL HOLE IN BEDROCK WHICH IS FLUSH WITH THE SURFACE OF THE
TU1650'GROUND.  IT IS 27 FEET SOUTHEAST OF THE CENTER OF NORTH ROAD, 21
TU1650'FEET SOUTHWEST OF THE CENTER OF GRAVE ROAD AND 19 FEET NORTHWEST
TU1650'OF A CYCLONE FENCE AROUND CANAL.
TU1650'
TU1650'HEIGHT OF LIGHT ABOVE STATION MARK 25.4 METERS.
TU1650
TU1650                          STATION RECOVERY (2004)
TU1650
TU1650'RECOVERY NOTE BY HAWAII DEPARTMENT OF TRANSPORTATION 2004 (CBG)
TU1650'RECOVERED BY STATE OF HAWAII DEPARTMENT OF TRANSPORTATION 2004 (CBG)
TU1650'TO REACH STATION ADEQUATE  DISK IS LOCATED 1.0 FT (0.3 M) BELOW
TU1650'GROUND, 2.85 FT (0.9 M) EAST FROM CHANIKINK FENCE, 70 FT (21.3 M) WEST
TU1650'OF MONKEY POD TREE, 33 FT (10.1 M) NORTHWEST OF 1.4 FT (0.4 M) HIGH
TU1650'WATER VALVE, 7 FT (2.1 M) SOUTHEAST OF A WATER VALVE ON A CONCRETE
TU1650'SIDEWALK.
```

PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
AA6240	GPS2241/B	20100824	88	U	H	G	302.404	11526176	

AA6240	GPS2917	20130513	88	U	H	B	302.399	11526176	
AA6240	GPS866	19950728	88	U	H	G	302.40	11526176	
AA6240	L27658		88	U	F	N	302.43355	11526176	20111001

```
1        National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
AA6240 ***********************************************************************
AA6240  DESIGNATION -  EAST
AA6240  PID         -  AA6240
AA6240  STATE/COUNTY-  MN/CHIPPEWA
AA6240  COUNTRY     -  US
AA6240  USGS QUAD   -  MONTEVIDEO (1994)
AA6240
AA6240                        *CURRENT SURVEY CONTROL
AA6240  ______________________________________________________________________
AA6240* NAD 83(2011) POSITION- 44 56 57.08023(N) 095 44 40.73823(W)   ADJUSTED
AA6240* NAD 83(2011) ELLIP HT-   276.083 (meters)        (06/27/12)   ADJUSTED
AA6240* NAD 83(2011) EPOCH   -  2010.00
AA6240* NAVD 88 ORTHO HEIGHT -   302.40   (meters)      992.1   (feet) LEVELING
AA6240  ______________________________________________________________________
AA6240  GEOID HEIGHT    -        -26.32  (meters)                      GEOID12A
AA6240  NAD 83(2011) X  -   -452,607.967 (meters)                      COMP
AA6240  NAD 83(2011) Y  - -4,499,068.364 (meters)                      COMP
AA6240  NAD 83(2011) Z  -  4,483,548.868 (meters)                      COMP
AA6240  LAPLACE CORR    -         -1.35  (seconds)                     DEFLEC12A
AA6240  VERT ORDER      -  THIRD
AA6240
AA6240  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AA6240  Type                                           Horiz  Ellip  Dist(km)
AA6240  ----------------------------------------------------------------------
AA6240  NETWORK                                         0.33   0.41
AA6240  ----------------------------------------------------------------------
AA6240  MEDIAN LOCAL ACCURACY AND DIST (014 points)    0.40   0.41      2.98
AA6240  ----------------------------------------------------------------------
AA6240  NOTE: Click here for information on individual local accuracy
AA6240  values and other accuracy information.
AA6240
AA6240
AA6240.The horizontal coordinates were established by GPS observations
AA6240.and adjusted by the National Geodetic Survey in June 2012.
AA6240
AA6240.NAD 83(2011) refers to NAD 83 coordinates where the reference
AA6240.frame has been affixed to the stable North American tectonic plate. See
AA6240.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AA6240
AA6240.The horizontal coordinates are valid at the epoch date displayed above
AA6240.which is a decimal equivalence of Year/Month/Day.
AA6240
AA6240.The orthometric height was determined by differential leveling.
AA6240.The vertical network tie was performed by a horz. field party for horz.
AA6240.obs reductions. Reset procedures were used to establish the elevation.
AA6240
AA6240.Photographs are available for this station.
AA6240
AA6240.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA6240
AA6240.The Laplace correction was computed from DEFLEC12A derived deflections.
AA6240
AA6240.The ellipsoidal height was determined by GPS observations
AA6240.and is referenced to NAD 83.
AA6240
AA6240. The following values were computed from the NAD 83(2011) position.
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AA6240
AA6240;                    North         East     Units Scale Factor Converg.
AA6240;SPC MN S     -   318,049.481   662,335.368   MT  0.99995254   -1 13 22.3
AA6240;SPC MN S     - 1,043,467.34  2,173,011.95   sFT  0.99995254   -1 13 22.3
AA6240;UTM  15      - 4,980,971.034   283,488.270   MT  1.00017646   -1 56 23.2
AA6240
AA6240!             -  Elev Factor  x  Scale Factor =   Combined Factor
AA6240!SPC MN S     -   0.99995672  x   0.99995254  =   0.99990926
AA6240!UTM  15      -   0.99995672  x   1.00017646  =   1.00013317
AA6240
AA6240                          SUPERSEDED SURVEY CONTROL
AA6240
AA6240  NAD 83(2007)-  44 56 57.08036(N)    095 44 40.73890(W) AD(2002.00) 0
AA6240  ELLIP H (02/10/07)  276.106  (m)                       GP(2002.00)
AA6240  NAD 83(1996)-  44 56 57.07995(N)    095 44 40.73852(W) AD(       ) 1
AA6240  ELLIP H (03/16/99)  276.135  (m)                       GP(       ) 4 1
AA6240  NAD 83(1996)-  44 56 57.08009(N)    095 44 40.73762(W) AD(       ) 1
AA6240  NAD 83(1986)-  44 56 57.08297(N)    095 44 40.73127(W) AD(       ) 1
AA6240  NAVD 88 (08/24/10)  302.40   (m)  UNKNOWN model used   GPS OBS
AA6240  NAVD 88 (07/28/95)  302.4    (m)  GEOID93 model used   GPS OBS
AA6240
AA6240.Superseded values are not recommended for survey control.
AA6240
AA6240.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA6240.See file dsdata.txt to determine how the superseded data were derived.
AA6240
AA6240_U.S. NATIONAL GRID SPATIAL ADDRESS: 15TTK8348880971(NAD 83)
AA6240
AA6240_MARKER: DD = SURVEY DISK
AA6240_SETTING: 50 = ALUMINUM ALLOY ROD W/O SLEEVE (10 FT.+)
AA6240_SP_SET: /
AA6240_STAMPING: EAST 1993
AA6240_MARK LOGO: MNDT
AA6240_PROJECTION: FLUSH
AA6240_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET
AA6240_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AA6240_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA6240+SATELLITE: SATELLITE OBSERVATIONS - April 11, 2012
AA6240_ROD/PIPE-DEPTH:  3.0 meters
AA6240
AA6240  HISTORY     - Date     Condition        Report By
AA6240  HISTORY     - 19931013 MONUMENTED       MNDT
AA6240  HISTORY     - 20051005 GOOD             MNDT
AA6240  HISTORY     - 20110511 GOOD             MNDT
AA6240  HISTORY     - 20120411 GOOD             MNDT
AA6240
AA6240                          STATION DESCRIPTION
AA6240
AA6240'DESCRIBED BY MN DEPT OF TRANSP 1993 (DKH)
AA6240'DESCRIBED BY MINNESOTA DEPARTMENT OF TRANSPORTATION.  THE MARK IS
AA6240'LOCATED 1.5 MI (2.4 KM) EAST OF MONTEVIDEO, AT THE JCT OF TH 7 AND CO
AA6240'RD 15, AT TH 7 MP 71.55, 63 FT (19.2 M) SW OF TH 7/59, 47.5 FT (14.5
AA6240'M) SOUTH OF CO RD 15, 21.2 FT (6.5 M) SE OF A P-POLE, AND 9.5 FT (2.9
AA6240'M) SSE OF A WIT POST.
AA6240
AA6240                          STATION RECOVERY (2005)
AA6240
AA6240'RECOVERY NOTE BY MN DEPT OF TRANSP 2005 (MPP)
AA6240'THE MARK WAS RECOVERED IN GOOD CONDITION.  A NEW DESCRIPTION FOLLOWS.
AA6240'THE MARK IS 1.5 MILES (2.4 KM) EAST OF MONTEVIDEO, AT JUNCTION OF
AA6240'TRUNK HIGHWAY 7 AND COUNTY ROAD 15, AT TRUNK HIGHWAY 7 MILEPOINT
AA6240'71.55, 63 FEET (19.2 M) SOUTHWEST OF TRUNK HIGHWAY 7, 47.5 FEET (14.5
AA6240'M) SOUTH OF COUNTY ROAD 15, 21.5 FEET (6.6 M) SOUTHEAST OF POWER POLE,
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AA6240'9.5 FEET (2.9 M) SOUTH-SOUTHEAST OF WITNESS POST.
AA6240
AA6240                          STATION RECOVERY (2011)
AA6240
AA6240'RECOVERY NOTE BY MN DEPT OF TRANSP 2011 (MAS)
AA6240'RECOVERED AS DESCRIBED.
AA6240
AA6240                          STATION RECOVERY (2012)
AA6240
AA6240'RECOVERY NOTE BY MN DEPT OF TRANSP 2012 (PXG)
AA6240'1.5 MILES WEST OF MONTEVIDEO, 0.7 MILE WEST-SOUTHWEST ALONG TRUNK
AA6240'HIGHWAY 7 FROM JUNCTION OF TRUNK HIGHWAY 7 AND TRUNK HIGHWAY 29 IN
AA6240'MONTEVIDEO, THEN 0.8 MILE WEST ON COUNTY ROAD 15 (CANTON AVENUE
AA6240'SHORTCUT TO TRUNK HIGHWAY 7 WEST), AT WEST JUNCTION OF TRUNK HIGHWAY 7
AA6240'AND COUNTY ROAD 15, AT TRUNK HIGHWAY 7 MILEPOINT 71.55, 63 FEET
AA6240'SOUTHWEST OF TRUNK HIGHWAY 7, 47.5 FEET SOUTH OF COUNTY ROAD 15, 75
AA6240'FEET NORTHEAST OF REFERENCE MARK 1, 102 FEET SOUTHEAST OF REFERENCE
AA6240'MARK 2, 21.5 FEET SOUTHEAST OF POWER POLE, 9.5 FEET SOUTH-SOUTHEAST OF
AA6240'WITNESS POST.
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PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
DE5506	L26347		LT	U	F	N	6.12396	11577166	20020219
DE5506	00000418/1	20030425	PR	U	A	N	6.07353	11577166	
DE5506	GPS1682	20040506	PR	U	H	B	6.074	11577166	

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1        National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
 DE5506 ***********************************************************************
 DE5506  DESIGNATION -  F 1004
 DE5506  PID         -  DE5506
 DE5506  STATE/COUNTY-  PR/ARECIBO
 DE5506  COUNTRY     -  US
 DE5506  USGS QUAD   -
 DE5506
 DE5506                         *CURRENT SURVEY CONTROL
 DE5506  ______________________________________________________________________
 DE5506* NAD 83(2011) POSITION- 18 27 11.79208(N) 066 43 05.97413(W)   ADJUSTED
 DE5506* NAD 83(2011) ELLIP HT-   -37.568 (meters)        (06/27/12)   ADJUSTED
 DE5506* NAD 83(2011) EPOCH    -  2010.00
 DE5506* PRVD02  ORTHO HEIGHT -     6.074  (meters)      19.93  (feet) ADJUSTED
 DE5506  ______________________________________________________________________
 DE5506  NAD 83(2011) X  -  2,392,134.915 (meters)                     COMP
 DE5506  NAD 83(2011) Y  - -5,559,369.130 (meters)                     COMP
 DE5506  NAD 83(2011) Z  -  2,006,025.168 (meters)                     COMP
 DE5506  LAPLACE CORR    -          0.57  (seconds)                    DEFLEC12A
 DE5506  GEOID HEIGHT    -        -43.65  (meters)                     GEOID12A
 DE5506  VERT ORDER      -  FIRST     CLASS II
 DE5506
 DE5506  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DE5506  Type                                           Horiz  Ellip  Dist(km)
 DE5506  ----------------------------------------------------------------------
 DE5506  NETWORK                                         0.89   2.00
 DE5506  ----------------------------------------------------------------------
 DE5506  MEDIAN LOCAL ACCURACY AND DIST (013 points)   0.95   1.72     36.84
 DE5506  ----------------------------------------------------------------------
 DE5506  NOTE: Click here for information on individual local accuracy
 DE5506  values and other accuracy information.
 DE5506
 DE5506
 DE5506.The horizontal coordinates were established by GPS observations
 DE5506.and adjusted by the National Geodetic Survey in June 2012.
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DE5506
DE5506.NAD 83(2011) refers to NAD 83 coordinates where the reference
DE5506.frame has been affixed to the stable North American tectonic plate. See
DE5506.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
DE5506
DE5506.The horizontal coordinates are valid at the epoch date displayed above
DE5506.which is a decimal equivalence of Year/Month/Day.
DE5506
DE5506.The orthometric height was determined by differential leveling and
DE5506.adjusted by the NATIONAL GEODETIC SURVEY
DE5506.in April 2003.
DE5506
DE5506.No vertical observational check was made to the station.
DE5506
DE5506.Photographs are available for this station.
DE5506
DE5506.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DE5506
DE5506.The Laplace correction was computed from DEFLEC12A derived deflections.
DE5506
DE5506.The ellipsoidal height was determined by GPS observations
DE5506.and is referenced to NAD 83.
DE5506
DE5506. The following values were computed from the NAD 83(2011) position.
DE5506
DE5506;                    North         East     Units Scale Factor Converg.
DE5506;SPC PRVI     -   268,639.898   169,895.868   MT  1.00000127   -0 05 21.0
DE5506;UTM  19      - 2,041,854.675   740,970.606   MT  1.00031791   +0 43 21.3
DE5506
DE5506!             -  Elev Factor  x  Scale Factor =   Combined Factor
DE5506!SPC PRVI     -   1.00000591  x   1.00000127  =   1.00000718
DE5506!UTM  19      -   1.00000591  x   1.00031791  =   1.00032382
DE5506
DE5506                          SUPERSEDED SURVEY CONTROL
DE5506
DE5506  NAD 83(2007)-  18 27 11.79102(N)    066 43 05.97912(W) AD(2002.00) 0
DE5506  ELLIP H (02/10/07)  -37.583  (m)                       GP(2002.00)
DE5506  NAD 83(2002)-  18 27 11.79108(N)    066 43 05.97897(W) AD(       ) A
DE5506  ELLIP H (05/06/04)  -37.554  (m)                       GP(       ) 4 1
DE5506
DE5506.Superseded values are not recommended for survey control.
DE5506
DE5506.NGS no longer adjusts projects to the PR datum.
DE5506.See file dsdata.txt to determine how the superseded data were derived.
DE5506
DE5506_U.S. NATIONAL GRID SPATIAL ADDRESS: 19QGA4097041854(NAD 83)
DE5506
DE5506_MARKER: F = FLANGE-ENCASED ROD
DE5506_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
DE5506_STAMPING: F 1004 2002
DE5506_MARK LOGO: NGS
DE5506_PROJECTION: FLUSH
DE5506_MAGNETIC: I = MARKER IS A STEEL ROD
DE5506_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
DE5506_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DE5506+SATELLITE: SATELLITE OBSERVATIONS - September 02, 2012
DE5506_ROD/PIPE-DEPTH: 8.0  meters
DE5506_SLEEVE-DEPTH  : 0.9 meters
DE5506
DE5506  HISTORY     - Date     Condition        Report By
DE5506  HISTORY     - 2002     MONUMENTED       NGS
DE5506  HISTORY     - 20020507 GOOD             NGS
DE5506  HISTORY     - 20100630 GOOD             RLDA
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 DE5506  HISTORY     - 20120902 GOOD
 DE5506
 DE5506                          STATION DESCRIPTION
 DE5506
 DE5506'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002 (JMW)
 DE5506'IN ARECIBO, AT THE JUNCTION OF STATE HIGHWAYS 10 AND 2, IN A TRIANGLE
 DE5506'MEDIAN FORMED BY THE NORTHBOUND STATE HIGHWAY 10, THE STATE HIGHWAY 10
 DE5506'NORTHBOUND ON-RAMP LEADING TO WESTBOUND STATE HIGHWAY 22, AND THE
 DE5506'STATE HIGHWAY 22 WESTBOUND OFF-RAMP LEADING TO NORTHBOUND STATE
 DE5506'HIGHWAY 10, 129.0 M NORTH OF THE CENTERLINE OF THE WESTBOUND HIGHWAY
 DE5506'22, 33.9 M EAST OF THE CENTERLINE OF THE NORTHBOUND STATE HIGHWAY 10,
 DE5506'20.8 M EAST OF A METAL LIGHT POLE, 20.3 M SOUTHWEST OF THE CENTER OF
 DE5506'THE STATE HIGHWAY 22 OFF-RAMP, 19.1 M SOUTHEAST OF A WITNESS POST AND
 DE5506'A UTILITY POLE, 16.8 M NORTHWEST OF THE CENTER OF THE STATE HIGHWAY 22
 DE5506'ON-RAMP, AND 1.0 M ABOVE THE LEVEL OF STATE HIGHWAY 10.
 DE5506'NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.  THE
 DE5506'SLEEVE DEPTH DOES NOT MEET THE SPECIFICATIONS FOR A CLASS A MARK.  THE
 DE5506'MARK IS ON THE HIGHWAY RIGHT-OF-WAY.
 DE5506
 DE5506                          STATION RECOVERY (2002)
 DE5506
 DE5506'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2002 (JMW)
 DE5506'RECOVERED AS DESCRIBED.
 DE5506
 DE5506                          STATION RECOVERY (2010)
 DE5506
 DE5506'RECOVERY NOTE BY RLDA SURVEYING AND MAPPING 2010 (RLD)
 DE5506'RECOVERED AS DESCRIBED.
 DE5506
 DE5506                          STATION RECOVERY (2012)
 DE5506
 DE5506'RECOVERY NOTE BY POLYTECHNIC UNIVERSITY OF PUERTO RICO 2012 (LMR)
 DE5506'RECOVERED AS DESCRIBED
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PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
DM7511	GPS2017	20050630	88	U	H	G	240.097	11641346	
DM7511	00000488/2	20060419	88	U	A	N	240.13389	11641346	

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1        National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
 DM7511 ***********************************************************************
 DM7511  CORS        -  This is a GPS Continuously Operating Reference Station.
 DM7511  DESIGNATION -  CRBT_SCGN_CN2001 GRP
 DM7511  CORS_ID     -  CRBT
 DM7511  PID         -  DM7511
 DM7511  STATE/COUNTY-  CA/MONTEREY
 DM7511  COUNTRY     -  US
 DM7511  USGS QUAD   -  SAN MIGUEL (1979)
 DM7511
 DM7511                        *CURRENT SURVEY CONTROL
 DM7511  ______________________________________________________________________
 DM7511* NAD 83(2011) POSITION- 35 47 29.78910(N) 120 45 02.66558(W)   ADJUSTED
 DM7511* NAD 83(2011) ELLIP HT-   206.025 (meters)        (08/??/12)   ADJUSTED
 DM7511* NAD 83(2011) EPOCH   -  2010.00
 DM7511* NAVD 88 ORTHO HEIGHT -   240.134  (meters)     787.84  (feet) ADJUSTED
 DM7511  ______________________________________________________________________
 DM7511  NAD 83(2011) X  - -2,648,414.056 (meters)                     COMP
 DM7511  NAD 83(2011) Y  - -4,451,452.882 (meters)                     COMP
 DM7511  NAD 83(2011) Z  -  3,709,580.951 (meters)                     COMP
 DM7511  LAPLACE CORR    -          1.73  (seconds)                    DEFLEC12A
 DM7511  GEOID HEIGHT    -        -34.10  (meters)                     GEOID12A
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DM7511  VERT ORDER      -  SECOND    CLASS II
DM7511
DM7511.Formal positional accuracy estimates are not available for this CORS
DM7511.because its coordinates were determined in part using modeled
DM7511.velocities. Approximate one-sigma accuracies for latitude, longitude,
DM7511.and ellipsoid height can be obtained from the short-term time series.
DM7511.Additional information regarding modeled velocities is available on
DM7511.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DM7511
DM7511.The horizontal coordinates were established by GPS observations
DM7511.and adjusted by the National Geodetic Survey in August 2012.
DM7511
DM7511.NAD 83(2011) refers to NAD 83 coordinates where the reference
DM7511.frame has been affixed to the stable North American Tectonic Plate.
DM7511
DM7511.The horizontal coordinates are valid at the epoch date displayed above
DM7511.which is a decimal equivalence of Year/Month/Day.
DM7511
DM7511.The orthometric height was determined by differential leveling and
DM7511.adjusted by the NATIONAL GEODETIC SURVEY
DM7511.in April 2006.
DM7511
DM7511.No vertical observational check was made to the station.
DM7511
DM7511.The XYZ, and position/ellipsoidal ht. are equivalent.
DM7511
DM7511.The Laplace correction was computed from DEFLEC12A derived deflections.
DM7511
DM7511.The ellipsoidal height was determined by GPS observations
DM7511.and is referenced to NAD 83.
DM7511
DM7511. The following values were computed from the NAD 83(2011) position.
DM7511
DM7511;                    North         East     Units Scale Factor Converg.
DM7511;SPC CA 4     -   552,294.392 1,841,734.031   MT  1.00004593   -1 02 40.1
DM7511;SPC CA 4     - 1,811,985.85  6,042,422.40   sFT  1.00004593   -1 02 40.1
DM7511;UTM  10      - 3,963,169.274   703,269.051   MT  1.00010917   +1 18 57.3
DM7511
DM7511!             -  Elev Factor  x  Scale Factor =   Combined Factor
DM7511!SPC CA 4     -   0.99996766  x   1.00004593  =   1.00001359
DM7511!UTM  10      -   0.99996766  x   1.00010917  =   1.00007683
DM7511
DM7511                          SUPERSEDED SURVEY CONTROL
DM7511
DM7511  NAD 83(2011)-  35 47 29.78909(N)    120 45 02.66558(W) AD(2010.00) A
DM7511  ELLIP H (08/??/11)  206.017  (m)                       GP(2010.00) 4 1
DM7511  NAD 83(CORS)-  35 47 29.78023(N)    120 45 02.65743(W) AD(2002.00) A
DM7511  ELLIP H (05/??/11)  206.031  (m)                       GP(2002.00) 4 1
DM7511  NAVD 88 (06/30/05)  240.1    (m)  GEOID03 model used   GPS OBS
DM7511
DM7511.Superseded values are not recommended for survey control.
DM7511
DM7511.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DM7511.See file dsdata.txt to determine how the superseded data were derived.
DM7511
DM7511_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SGE0326963169(NAD 83)
DM7511
DM7511_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DM7511+SATELLITE: SATELLITE OBSERVATIONS - August 01, 2004
DM7511
DM7511  HISTORY     - Date     Condition        Report By
DM7511  HISTORY     - 20010913 MONUMENTED
DM7511  HISTORY     - 2004     SEE DESCRIPTION  USGS
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DM7511  HISTORY     - 20040801 SEE DESCRIPTION  CSRC
DM7511
DM7511                          STATION DESCRIPTION
DM7511
DM7511'DESCRIBED BY US GEOLOGICAL SURVEY 2004 (MSP)
DM7511'THIS MONUMENT IS ASSOCIATED WITH CORS SITE 'CRBT'
DM7511'LATEST INFORMATION INCLUDING POSITIONS AND VELOCITIES
DM7511'ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DM7511'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DM7511'   ftp://cors.ngs.noaa.gov/cors/README.txt
DM7511'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DM7511'   ftp://cors.ngs.noaa.gov/cors/station_log
DM7511'   http://geodesy.noaa.gov/CORS
```

PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
AJ8468	GPS2447	20080611	LT	U	H	G	5.486	11575920	
AJ8468	GPS2597	20091204	LT	U	H	G	5.546	11575920	

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1        National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
 AJ8468 ***********************************************************************
 AJ8468  HT_MOD      -  This is a Height Modernization Survey Station.
 AJ8468  CORS        -  This is a GPS Continuously Operating Reference Station.
 AJ8468  DESIGNATION -  HONOLULU TIDE GAU CORS ARP
 AJ8468  CORS_ID     -  HNLC
 AJ8468  PID         -  AJ8468
 AJ8468  STATE/COUNTY-  HI/HONOLULU
 AJ8468  COUNTRY     -  US
 AJ8468  USGS QUAD   -  HONOLULU (1983)
 AJ8468
 AJ8468                        *CURRENT SURVEY CONTROL
 AJ8468  ______________________________________________________________________
 AJ8468* NAD 83(PA11) POSITION- 21 18 11.81027(N) 157 51 52.28441(W)   ADJUSTED
 AJ8468* NAD 83(PA11) ELLIP HT-    21.687 (meters)        (08/??/11)   ADJUSTED
 AJ8468* NAD 83(PA11) EPOCH    -  2010.00
 AJ8468* LMSL    ORTHO HEIGHT -     5.55   (meters)      18.2   (feet) GPS OBS
 AJ8468  ______________________________________________________________________
 AJ8468  LMSL orthometric height was determined with an earlier geoid model
 AJ8468  NAD 83(PA11) X  - -5,506,797.917 (meters)                    COMP
 AJ8468  NAD 83(PA11) Y  - -2,240,051.673 (meters)                    COMP
 AJ8468  NAD 83(PA11) Z  -  2,302,719.535 (meters)                    COMP
 AJ8468  GEOID HEIGHT    -         15.50  (meters)                    GEOID12A
 AJ8468
 AJ8468  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AJ8468  Type                                          Horiz  Ellip  Dist(km)
 AJ8468  ----------------------------------------------------------------------
 AJ8468  NETWORK                                        0.15   0.16
 AJ8468  ----------------------------------------------------------------------
 AJ8468  NOTE: Click here for information on individual local accuracy
 AJ8468  values and other accuracy information.
 AJ8468
 AJ8468
 AJ8468.The coordinates were established by GPS observations
 AJ8468.and adjusted by the National Geodetic Survey in August 2011.
 AJ8468
 AJ8468.NAD 83(PA11) refers to NAD 83 coordinates where the reference
 AJ8468.frame has been affixed to the stable Pacific Tectonic Plate.
 AJ8468
 AJ8468.The coordinates are valid at the epoch date displayed above
 AJ8468.which is a decimal equivalence of Year/Month/Day.
 AJ8468
 AJ8468.The orthometric height was determined by GPS observations and a
 AJ8468.high-resolution geoid model using precise GPS observation and
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AJ8468.processing techniques.
AJ8468
AJ8468.The PID for the CORS L1 Phase Center is AJ8469.
AJ8468
AJ8468.The XYZ, and position/ellipsoidal ht. are equivalent.
AJ8468
AJ8468.The ellipsoidal height was determined by GPS observations
AJ8468.and is referenced to NAD 83.
AJ8468
AJ8468. The following values were computed from the NAD 83(PA11) position.
AJ8468
AJ8468;                    North         East     Units Scale Factor Converg.
AJ8468;SPC HI 4     -    57,809.090   669,710.676   MT  1.00034578   +0 35 39.5
AJ8468
AJ8468!             -  Elev Factor  x  Scale Factor =   Combined Factor
AJ8468!SPC HI 4     -   0.99999659  x   1.00034578  =   1.00034237
AJ8468
AJ8468                           SUPERSEDED SURVEY CONTROL
AJ8468
AJ8468  NAD 83(CORS)-  21 18 11.81080(N)    157 51 52.28411(W) AD(2002.00) c
AJ8468  ELLIP H (06/??/07)   21.706  (m)                       GP(2002.00) c c
AJ8468  NAD 83(CORS)-  21 18 11.81046(N)    157 51 52.28420(W) AD(2002.00) c
AJ8468  ELLIP H (10/??/02)   21.695  (m)                       GP(2002.00) c c
AJ8468  NAD 83(CORS)-  21 18 11.81653(N)    157 51 52.29486(W) AD(1997.00) c
AJ8468  ELLIP H (03/??/02)   21.593  (m)                       GP(1997.00) c c
AJ8468  NAD 83(CORS)-  21 18 11.81653(N)    157 51 52.29486(W) AD(1993.62) c
AJ8468  ELLIP H (03/??/02)   21.593  (m)                       GP(1993.62) c c
AJ8468
AJ8468.Superseded values are not recommended for survey control.
AJ8468
AJ8468.NGS no longer adjusts projects to the OLD HI datum.
AJ8468.See file dsdata.txt to determine how the superseded data were derived.
AJ8468
AJ8468_U.S. NATIONAL GRID SPATIAL ADDRESS: 4QFJ1777456137(NAD 83)
AJ8468
AJ8468_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
AJ8468
AJ8468                           STATION DESCRIPTION
AJ8468
AJ8468'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
AJ8468'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
AJ8468'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
AJ8468'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
AJ8468'   ftp://cors.ngs.noaa.gov/cors/README.txt
AJ8468'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
AJ8468'   ftp://cors.ngs.noaa.gov/cors/station_log
AJ8468'   http://geodesy.noaa.gov/CORS
```

PID	ADJ_ID	ADJ_DATE	DATUM	ELEV_AVAIL	ELEV_SOURCE	ELEV_TECH	HEIGHT	NUID	OBS_DATE
AE8289	00000317	19990721	88	U	A	N	184.34788	11549919	
AE8289	GPS1212	19990525	88	U	H	B	184.347	11549919	

```
1        National Geodetic Survey,   Retrieval Date = JANUARY 22, 2014
 AE8289 ***********************************************************************
 AE8289  CBN         -  This is a Cooperative Base Network Control Station.
 AE8289  WATER LEVEL -  This is a Water Level Survey Control Monument.
 AE8289  DESIGNATION -  602
 AE8289  PID         -  AE8289
 AE8289  STATE/COUNTY-  MN/ST LOUIS
 AE8289  COUNTRY     -  US
 AE8289  USGS QUAD   -  DULUTH (1993)
 AE8289
```

```
AE8289                          *CURRENT SURVEY CONTROL
AE8289  ______________________________________________________________________
AE8289* NAD 83(2011) POSITION- 46 46 29.10992(N) 092 05 37.38770(W)   ADJUSTED
AE8289* NAD 83(2011) ELLIP HT-   156.085 (meters)        (06/27/12)   ADJUSTED
AE8289* NAD 83(2011) EPOCH    -  2010.00
AE8289* NAVD 88 ORTHO HEIGHT -   184.348  (meters)      604.82  (feet) ADJUSTED
AE8289  ______________________________________________________________________
AE8289  NAD 83(2011) X  -   -159,876.179 (meters)                     COMP
AE8289  NAD 83(2011) Y  - -4,373,152.958 (meters)                     COMP
AE8289  NAD 83(2011) Z  -  4,624,765.036 (meters)                     COMP
AE8289  LAPLACE CORR    -         -2.92  (seconds)                    DEFLEC12A
AE8289  GEOID HEIGHT    -        -28.27  (meters)                     GEOID12A
AE8289  DYNAMIC HEIGHT  -        184.373 (meters)      604.90  (feet) COMP
AE8289  MODELED GRAVITY -    980,748.1   (mgal)                       NAVD 88
AE8289
AE8289  VERT ORDER      -  FIRST     CLASS II
AE8289
AE8289  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AE8289  Type                                           Horiz  Ellip  Dist(km)
AE8289  ----------------------------------------------------------------------
AE8289  NETWORK                                         0.33   0.53
AE8289  ----------------------------------------------------------------------
AE8289  MEDIAN LOCAL ACCURACY AND DIST (055 points)    0.42   0.61     77.83
AE8289  ----------------------------------------------------------------------
AE8289  NOTE: Click here for information on individual local accuracy
AE8289  values and other accuracy information.
AE8289
AE8289
AE8289.The horizontal coordinates were established by GPS observations
AE8289.and adjusted by the National Geodetic Survey in June 2012.
AE8289
AE8289.NAD 83(2011) refers to NAD 83 coordinates where the reference
AE8289.frame has been affixed to the stable North American tectonic plate. See
AE8289.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AE8289
AE8289.The horizontal coordinates are valid at the epoch date displayed above
AE8289.which is a decimal equivalence of Year/Month/Day.
AE8289
AE8289.The orthometric height was determined by differential leveling and
AE8289.adjusted by the NATIONAL GEODETIC SURVEY
AE8289.in July 1999.
AE8289
AE8289.No vertical observational check was made to the station.
AE8289
AE8289.This Water Level Mark is designated as VM 13392
AE8289.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
AE8289
AE8289.Photographs are available for this station.
AE8289
AE8289.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AE8289
AE8289.The Laplace correction was computed from DEFLEC12A derived deflections.
AE8289
AE8289.The ellipsoidal height was determined by GPS observations
AE8289.and is referenced to NAD 83.
AE8289
AE8289.The dynamic height is computed by dividing the NAVD 88
AE8289.geopotential number by the normal gravity value computed on the
AE8289.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AE8289.degrees latitude (g = 980.6199 gals.).
AE8289
AE8289.The modeled gravity was interpolated from observed gravity values.
AE8289
```

```
AE8289. The following values were computed from the NAD 83(2011) position.
AE8289
AE8289;                     North         East     Units Scale Factor Converg.
AE8289;SPC MN N     -   131,046.494   876,858.168   MT  1.00007249   +0 44 45.2
AE8289;SPC MN N     -   429,941.71  2,876,825.51   sFT  1.00007249   +0 44 45.2
AE8289;UTM  15      - 5,180,532.442   569,189.402   MT  0.99965884   +0 39 37.5
AE8289
AE8289!             -  Elev Factor  x  Scale Factor =   Combined Factor
AE8289!SPC MN N     -   0.99997553  x   1.00007249  =   1.00004802
AE8289!UTM  15      -   0.99997553  x   0.99965884  =   0.99963438
AE8289
AE8289:                Primary Azimuth Mark                    Grid Az
AE8289:SPC MN N     -  ALDER 2                                 158 06 20.5
AE8289:UTM  15      -  ALDER 2                                 158 11 28.2
AE8289
AE8289|---------------------------------------------------------------------|
AE8289| PID    Reference Object                    Distance      Geod. Az  |
AE8289|                                                          dddmmss.s |
AE8289| DO4896 ALDER 2                           447.259 METERS 1585105.7 |
AE8289|---------------------------------------------------------------------|
AE8289
AE8289                          SUPERSEDED SURVEY CONTROL
AE8289
AE8289  NAD 83(2007)-  46 46 29.11030(N)    092 05 37.38857(W) AD(2002.00) 0
AE8289  ELLIP H (02/10/07)  156.113  (m)                       GP(2002.00)
AE8289  NAD 83(1997)-  46 46 29.11054(N)    092 05 37.38918(W) AD(       ) A
AE8289  ELLIP H (05/25/99)  156.130  (m)                       GP(       ) 3 1
AE8289  NAVD 88 (05/25/99)  184.35   (m)          604.8    (f) LEVELING    3
AE8289
AE8289.Superseded values are not recommended for survey control.
AE8289
AE8289.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AE8289.See file dsdata.txt to determine how the superseded data were derived.
AE8289
AE8289_U.S. NATIONAL GRID SPATIAL ADDRESS: 15TWM6918980532(NAD 83)
AE8289
AE8289_MARKER: DS = TRIANGULATION STATION DISK
AE8289_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE
AE8289_SP_SET: DOCK WALL
AE8289_STAMPING: 602 1988
AE8289_MARK LOGO: USACE
AE8289_PROJECTION: FLUSH
AE8289_MAGNETIC: N = NO MAGNETIC MATERIAL
AE8289_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AE8289+STABILITY: SURFACE MOTION
AE8289_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AE8289+SATELLITE: SATELLITE OBSERVATIONS - August 27, 2012
AE8289
AE8289  HISTORY     - Date     Condition        Report By
AE8289  HISTORY     - 19880401 MONUMENTED       USACE
AE8289  HISTORY     - 19940917 GOOD             NOS
AE8289  HISTORY     - 19950828 GOOD             NOS
AE8289  HISTORY     - 19970616 GOOD             MNDT
AE8289  HISTORY     - 20000114 GOOD             NGS
AE8289  HISTORY     - 20010909 GOOD             USPSQD
AE8289  HISTORY     - 20040421 GOOD             MNDT
AE8289  HISTORY     - 20050714 GOOD             NGS
AE8289  HISTORY     - 20050801 GOOD             NGS
AE8289  HISTORY     - 20100706 GOOD             MNDT
AE8289  HISTORY     - 20100719 GOOD             NGS
AE8289  HISTORY     - 20120725 GOOD             GEOCAC
AE8289  HISTORY     - 20120827 GOOD             MNDT
AE8289
```

```
AE8289                          STATION DESCRIPTION
AE8289
AE8289'DESCRIBED BY NATIONAL OCEAN SERVICE 1994 (JRS)
AE8289'IN DULUTH, ON MINNESOTA POINT, MN.  LOCATED ON THE U.S.  CORPS OF
AE8289'ENGINEERS VESSEL YARD, AT THE WEST END OF SOUTHERN DOCK ON COE BASE,
AE8289'23.2 METERS (76.1 FT) SOUTH OF THE NORTH FACE OF CONCRETE BULKHEAD,
AE8289'0.90 METERS (2.95 FT) NORTH OF SOUTH FACE OF COE CONCRETE BULKHEAD,
AE8289'0.90 METERS (2.95 FT) EAST OF THE WEST FACE OF COE CONCRETE BULKHEAD
AE8289'AND 0.65 METERS (2.13 FT) NW OF THE LAST CLEET ON THE NORTH SIDE OF
AE8289'COE CONCRETE BULKHEAD.
AE8289
AE8289                          STATION RECOVERY (1995)
AE8289
AE8289'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1995 (MJB)
AE8289'RECOVERED AS DESCRIBED.
AE8289
AE8289                          STATION RECOVERY (1997)
AE8289
AE8289'RECOVERY NOTE BY MN DEPT OF TRANSP 1997 (WAS)
AE8289'THE MARK WAS RECOVERED AS DESCRIBED IN GOOD CONDITION.
AE8289
AE8289                          STATION RECOVERY (2000)
AE8289
AE8289'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (DBH)
AE8289'RECOVERED AS DESCRIBED.
AE8289'
AE8289'OBTAIN PERMISSION TO WALK ON THE DOCK AT THE OFFICE JUST INSIDE
AE8289'THE GATE ON THE WEST SIDE.  IF THE DOCK IS UNMANNED, GET
AE8289'PERMISSION AT THE CORPS HEADQUARTERS LOCATED AT THE NORTHWEST
AE8289'BASE OF THE HIGH LIFT BRIDGE.  ELECTRICAL POWER IS AVAILABLE WITHIN
AE8289'100 FEET OF THE STATION.
AE8289'
AE8289
AE8289                          STATION RECOVERY (2001)
AE8289
AE8289'RECOVERY NOTE BY US POWER SQUADRON 2001 (VO)
AE8289'RECOVERED IN GOOD CONDITION.
AE8289
AE8289                          STATION RECOVERY (2004)
AE8289
AE8289'RECOVERY NOTE BY MN DEPT OF TRANSP 2004 (DKH)
AE8289'IN DULUTH, ON MINNESOTA POINT, AT COE VESSEL YARD, AT WEST END OF
AE8289'SOUTH DOCK, 2.9 FEET NORTH OF SOUTH FACE OF CONCRETE BULKHEAD, 76 FEET
AE8289'SOUTH OF NORTH FACE OF CONCRETE BULKHEAD, 2.9 FEET EAST OF WEST FACE
AE8289'OF BULKHEAD, 2.1 FEET NORTHWEST OF LAST CLEAT.
AE8289
AE8289                          STATION RECOVERY (2005)
AE8289
AE8289'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (DW)
AE8289'TO ACCESS MARK GO SSE ON LAKE AVE., OVER LIFT BRIDGE, TO 9TH ST.,
AE8289'THENCE WSW (RIGHT) TO USE (COE) FACILITY AT 9TH ST. AND MINNESOTA ST.
AE8289'
AE8289'SOUTH DOCK IS SSE OF TWO DOCKS AND EXTENDS WSW ('WEST' ON PREVIOUS
AE8289'DESCRIPTIONS) INTO DULUTH HARBOR BASIN.
AE8289
AE8289                          STATION RECOVERY (2005)
AE8289
AE8289'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (DAC)
AE8289'RECOVERED AS DESCRIBED.
AE8289
AE8289                          STATION RECOVERY (2010)
AE8289
AE8289'RECOVERY NOTE BY MN DEPT OF TRANSP 2010 (KMS)
```

```
AE8289'IN DULUTH, ON MINNESOTA POINT, AT CORPS OF ENGINEERS VESSEL YARD, 0.25
AE8289'MILE SOUTHEAST ALONG LAKE STREET FROM THE LIFT BRIDGE AT CANEL PARK,
AE8289'THEN 0.05 MILES SOUTHWEST ON NINTH STREET TO UNITED STATES CORPS OF
AE8289'ENGINEERS BUILDING, THEN 0.10 MILES THROUGH GATE, AT WEST END OF SOUTH
AE8289'DOCK, 76 FEET SOUTH OF NORTH FACE OF CONCRETE BULKHEAD, 2.9 FEET NORTH
AE8289'OF SOUTH FACE OF CONCRETE BULKHEAD, 2.9 FEET EAST OF WEST FACE OF
AE8289'BULKHEAD, 2.1 FEET NORTHWEST OF LAST CLEAT.
AE8289
AE8289                          STATION RECOVERY (2010)
AE8289
AE8289'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2010 (JDR)
AE8289'RECOVERED AS DESCRIBED.
AE8289
AE8289                          STATION RECOVERY (2012)
AE8289
AE8289'RECOVERY NOTE BY GEOCACHING 2012 (LPC)
AE8289'RECOVERED IN GOOD CONDITION.
AE8289
AE8289                          STATION RECOVERY (2012)
AE8289
AE8289'RECOVERY NOTE BY MN DEPT OF TRANSP 2012 (BXS)
AE8289'IN DULUTH, ON MINNESOTA POINT, AT CORPS OF ENGINEERS VESSEL YARD, 0.25
AE8289'MILE SOUTHEAST ALONG LAKE STREET FROM THE LIFT BRIDGE AT CANAL PARK,
AE8289'THEN 0.05 MILES SOUTHWEST ON NINTH STREET TO UNITED STATES CORPS OF
AE8289'ENGINEERS BUILDING, THEN 0.10 MILES THROUGH GATE, AT WEST END OF SOUTH
AE8289'DOCK, 76 FEET SOUTH OF NORTH FACE OF CONCRETE BULKHEAD, 2.9 FEET NORTH
AE8289'OF SOUTH FACE OF CONCRETE BULKHEAD, 2.9 FEET EAST OF WEST FACE OF
AE8289'BULKHEAD, 2.1 FEET NORTHWEST OF LAST CLEAT.
```

4. Make sure that mark AH5645 displays the proper best elevation in the CURRENT SURVEY CONTROL section of the datasheet and that the superseded elevations are properly displayed in the SUPERSEDED SURVEY CONTROL section of the datasheet. AH5445 currently displays a superseded elevation as the best elevation and should display an N-Height as the best elevation.

   This issue occurred for this PID and others because the best height algorithm expected the best height to be an adjusted elevation, a HT_MOD, or a leveled benchmark. Elevations where this issue occurs will have an ELEV_SOURCE of ‘B’, ‘C’, ‘M’, ‘N’, ‘P’, ‘R’, or ‘U’. The definitions of these ELEV_SOURCE codes is below.

```
‘B’ - UNCHECKED ADJUSTED
‘C’ - COMPUTED USING UNCORRECTED HEIGHT DIFFERENCES,
‘M’ - OLDER OBS APPLIED TO ADJUSTED HEIGHT GENERATED FROM A MORE RECENT SURVEY
‘N’ - HEIGHT FROM PRECISE LEVELING CONNECTED AT ONLY ONE NSRS PT-FOR GPS CHECK
‘P’ - POSTED BENCH MARK
‘R’ - RESET COMPUTATION,
‘U’ - UNVALIDATED HEIGHT FROM PRECISE LEVELING CONNECTED AT ONLY ONE NSRS PT
```

   This issue has been corrected in the best height algorithm. Other PIDs where this situation occurred were AW6997, ER0673, ED2385, AH5645, DC2131, NP0165, JA0699, LA0533, GU3417, and DH6678.

   The partial datasheet for AH5645 BEFORE it was corrected is shown below.

```
1        National Geodetic Survey,   Retrieval Date = FEBRUARY  7, 2014
 AH5645 ***********************************************************************
```

```
AH5645  SACS        -  This is a Secondary Airport Control Station.
AH5645  DESIGNATION -  EHO A
AH5645  PID         -  AH5645
AH5645  STATE/COUNTY-  NC/CLEVELAND
AH5645  COUNTRY     -  US
AH5645  USGS QUAD   -  SHELBY (1983)
AH5645
AH5645                        *CURRENT SURVEY CONTROL
AH5645  ______________________________________________________________________
AH5645* NAD 83(2011) POSITION- 35 15 33.14195(N) 081 35 51.11016(W)   ADJUSTED
AH5645* NAD 83(2011) ELLIP HT-   224.278 (meters)        (06/27/12)   ADJUSTED
AH5645* NAD 83(2011) EPOCH   -  2010.00
AH5645* NAVD 88 ORTHO HEIGHT -   256.076  (meters)     840.14  (feet) SUPERSEDED
AH5645  ______________________________________________________________________
AH5645  NAD 83(2011) X  -    761,908.330 (meters)                    COMP
AH5645  NAD 83(2011) Y  - -5,158,094.799 (meters)                    COMP
AH5645  NAD 83(2011) Z  -  3,661,515.417 (meters)                    COMP
AH5645  LAPLACE CORR    -          1.05  (seconds)                   DEFLEC12A
AH5645  GEOID HEIGHT    -        -31.80  (meters)                    GEOID12A
AH5645
AH5645  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AH5645  Type                                          Horiz  Ellip  Dist(km)
AH5645  ----------------------------------------------------------------------
AH5645  NETWORK                                        0.35   0.63
AH5645  ----------------------------------------------------------------------
AH5645  MEDIAN LOCAL ACCURACY AND DIST (003 points)   0.16   0.14      0.51
AH5645  ----------------------------------------------------------------------
AH5645  NOTE: Click here for information on individual local accuracy
AH5645  values and other accuracy information.
AH5645
AH5645
AH5645.This mark is at Shelby Airport (EHO)
AH5645
AH5645.The horizontal coordinates were established by GPS observations
AH5645.and adjusted by the National Geodetic Survey in June 2012.
AH5645
AH5645.NAD 83(2011) refers to NAD 83 coordinates where the reference
AH5645.frame has been affixed to the stable North American tectonic plate. See
AH5645.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AH5645
AH5645.The horizontal coordinates are valid at the epoch date displayed above
AH5645.which is a decimal equivalence of Year/Month/Day.
AH5645
AH5645.GPS derived orthometric heights for airport stations designated as
AH5645.PACS or SACS are published to 2 decimal places.  This maintains
AH5645.centimeter relative accuracy between the PACS and SACS.  It does
AH5645.not indicate centimeter accuracy relative to other marks which are
AH5645.part of the NAVD 88 network.
AH5645
AH5645.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AH5645
AH5645.The Laplace correction was computed from DEFLEC12A derived deflections.
AH5645
AH5645.The ellipsoidal height was determined by GPS observations
AH5645.and is referenced to NAD 83.
AH5645
AH5645. The following values were computed from the NAD 83(2011) position.
AH5645
AH5645;                   North         East     Units Scale Factor Converg.
AH5645;SPC NC       -   170,508.090   373,284.683   MT  0.99987260   -1 29 57.2
AH5645;SPC NC       -   559,408.63  1,224,684.83   sFT  0.99987260   -1 29 57.2
AH5645;UTM  17      - 3,901,952.268   445,646.517   MT  0.99963641   -0 20 41.8
AH5645
```

```
AH5645!             -  Elev Factor  x  Scale Factor =   Combined Factor
AH5645!SPC NC       -   0.99996480  x   0.99987260  =   0.99983740
AH5645!UTM  17      -   0.99996480  x   0.99963641  =   0.99960122
AH5645
AH5645:                Primary Azimuth Mark                    Grid Az
AH5645:SPC NC       -  SHELPORT                                206 23 57.0
AH5645:UTM  17      -  SHELPORT                                205 14 41.6
AH5645
AH5645|---------------------------------------------------------------------|
AH5645| PID    Reference Object                    Distance      Geod. Az   |
AH5645|                                                          dddmmss.s  |
AH5645| DG6083 CLEV 000                          269.566 METERS 20206      |
AH5645| FA3604 SHELPORT                          APPROX. 0.5 KM 2045359.8  |
AH5645|---------------------------------------------------------------------|
AH5645
AH5645                          SUPERSEDED SURVEY CONTROL
AH5645
AH5645  NAD 83(2007)-  35 15 33.14199(N)    081 35 51.11092(W) AD(2002.00) 0
AH5645  ELLIP H (02/10/07)  224.284  (m)                       GP(2002.00)
AH5645  NAD 83(1986)-  35 15 33.15776(N)    081 35 51.11203(W) AD(       ) 1
AH5645  NAD 83(2001)-  35 15 33.14213(N)    081 35 51.11096(W) AD(       ) B
AH5645  ELLIP H (01/30/03)  224.295  (m)                       GP(       ) 4 2
AH5645  NAD 83(1995)-  35 15 33.14229(N)    081 35 51.11070(W) AD(       ) B
AH5645  ELLIP H (12/21/98)  224.300  (m)                       GP(       ) 4 1
AH5645  NAVD 88 (07/13/99)  256.08   (m)          840.2    (f) N HEIGHT    3
AH5645  NAVD 88 (12/21/98)  256.08   (m)          840.2    (f) LEVELING    3
AH5645
AH5645.Superseded values are not recommended for survey control.
```

The partial datasheet for AH5645 AFTER it was corrected is shown below.

```
1        National Geodetic Survey,   Retrieval Date = FEBRUARY  7, 2014
 AH5645 ***********************************************************************
 AH5645  SACS        -  This is a Secondary Airport Control Station.
 AH5645  DESIGNATION -  EHO A
 AH5645  PID         -  AH5645
 AH5645  STATE/COUNTY-  NC/CLEVELAND
 AH5645  COUNTRY     -  US
 AH5645  USGS QUAD   -  SHELBY (1983)
 AH5645
 AH5645                        *CURRENT SURVEY CONTROL
 AH5645  ______________________________________________________________________
 AH5645* NAD 83(2011) POSITION- 35 15 33.14195(N) 081 35 51.11016(W)   ADJUSTED
 AH5645* NAD 83(2011) ELLIP HT-   224.278 (meters)        (06/27/12)   ADJUSTED
 AH5645* NAD 83(2011) EPOCH   -  2010.00
 AH5645* NAVD 88 ORTHO HEIGHT -   256.08   (meters)     840.2   (feet) N HEIGHT
 AH5645  ______________________________________________________________________
 AH5645  NAD 83(2011) X  -    761,908.330 (meters)                    COMP
 AH5645  NAD 83(2011) Y  - -5,158,094.799 (meters)                    COMP
 AH5645  NAD 83(2011) Z  -  3,661,515.417 (meters)                    COMP
 AH5645  LAPLACE CORR    -          1.05  (seconds)                   DEFLEC12A
 AH5645  GEOID HEIGHT    -        -31.80  (meters)                    GEOID12A
 AH5645  DYNAMIC HEIGHT  -        255.83  (meters)      839.3   (feet) COMP
 AH5645  MODELED GRAVITY -    979,651.0   (mgal)                      NAVD 88
 AH5645
 AH5645  VERT ORDER      -  THIRD
 AH5645
 AH5645  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AH5645  Type                                           Horiz  Ellip  Dist(km)
 AH5645  ----------------------------------------------------------------------
 AH5645  NETWORK                                         0.35   0.63
 AH5645  ----------------------------------------------------------------------
 AH5645  MEDIAN LOCAL ACCURACY AND DIST (003 points)    0.16   0.14      0.51
```

```
AH5645  ---------------------------------------------------------------------
AH5645  NOTE: Click here for information on individual local accuracy
AH5645  values and other accuracy information.
AH5645
AH5645
AH5645.This mark is at Shelby Airport (EHO)
AH5645
AH5645.The horizontal coordinates were established by GPS observations
AH5645.and adjusted by the National Geodetic Survey in June 2012.
AH5645
AH5645.NAD 83(2011) refers to NAD 83 coordinates where the reference
AH5645.frame has been affixed to the stable North American tectonic plate. See
AH5645.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AH5645
AH5645.The horizontal coordinates are valid at the epoch date displayed above
AH5645.which is a decimal equivalence of Year/Month/Day.
AH5645
AH5645.The orthometric height was determined by differential leveling
AH5645.and adjusted by the NATIONAL GEODETIC SURVEY in July 1999.
AH5645
AH5645.The height was determined by precise leveling from only one NSRS
AH5645.bench mark.  This was not adequate "tie leveling" to NSRS and was
AH5645.allowed ONLY to validate the GPS-derived height.
AH5645
AH5645.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AH5645
AH5645.The Laplace correction was computed from DEFLEC12A derived deflections.
AH5645
AH5645.The ellipsoidal height was determined by GPS observations
AH5645.and is referenced to NAD 83.
AH5645
AH5645.The dynamic height is computed by dividing the NAVD 88
AH5645.geopotential number by the normal gravity value computed on the
AH5645.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AH5645.degrees latitude (g = 980.6199 gals.).
AH5645
AH5645.The modeled gravity was interpolated from observed gravity values.
AH5645
AH5645. The following values were computed from the NAD 83(2011) position.
AH5645
AH5645;                    North         East     Units Scale Factor Converg.
AH5645;SPC NC       -   170,508.090   373,284.683   MT  0.99987260   -1 29 57.2
AH5645;SPC NC       -   559,408.63  1,224,684.83   sFT  0.99987260   -1 29 57.2
AH5645;UTM  17      - 3,901,952.268   445,646.517   MT  0.99963641   -0 20 41.8
AH5645
AH5645!             -  Elev Factor  x  Scale Factor =   Combined Factor
AH5645!SPC NC       -   0.99996480  x   0.99987260  =   0.99983740
AH5645!UTM  17      -   0.99996480  x   0.99963641  =   0.99960122
AH5645
AH5645:                Primary Azimuth Mark                    Grid Az
AH5645:SPC NC       -  SHELPORT                                206 23 57.0
AH5645:UTM  17      -  SHELPORT                                205 14 41.6
AH5645
AH5645|---------------------------------------------------------------------|
AH5645| PID    Reference Object                    Distance      Geod. Az  |
AH5645|                                                          dddmmss.s |
AH5645| DG6083 CLEV 000                          269.566 METERS 20206     |
AH5645| FA3604 SHELPORT                          APPROX. 0.5 KM 2045359.8 |
AH5645|---------------------------------------------------------------------|
AH5645
AH5645                          SUPERSEDED SURVEY CONTROL
AH5645
AH5645  NAD 83(2007)-  35 15 33.14199(N)    081 35 51.11092(W) AD(2002.00) 0
```

```
AH5645  ELLIP H (02/10/07)  224.284  (m)                        GP(2002.00)
AH5645  NAD 83(1986)-  35 15 33.15776(N)    081 35 51.11203(W) AD(       ) 1
AH5645  NAD 83(2001)-  35 15 33.14213(N)    081 35 51.11096(W) AD(       ) B
AH5645  ELLIP H (01/30/03)  224.295  (m)                        GP(       ) 4 2
AH5645  NAD 83(1995)-  35 15 33.14229(N)    081 35 51.11070(W) AD(       ) B
AH5645  ELLIP H (12/21/98)  224.300  (m)                        GP(       ) 4 1
AH5645  NAVD 88 (12/21/98)  256.08   (m)          840.2    (f) LEVELING    3
AH5645  NAVD 88 (07/10/98)  256.076  (m)          840.14   (f) SUPERSEDED  2 2
AH5645
AH5645.Superseded values are not recommended for survey control.
```

Other PIDs where this situation occurs are AW6997, ER0673, ED2385, AH5645, DC2131, NP0165, JA0699, LA0533, GU3417, and DH6678.

5. Update the dsdata.txt file's Horizontal Control section as well as the section on historical US datums. The added text can be seen below.

```
DSDATA.TXT
********************************************************************************
*                          dsdata.txt                                          *
********************************************************************************

…

                                  ***
 DATA ITEM: Text regarding Horizontal Control
 DISPLAYED: As required when explaining source of data values.
 COMMENTS :

 EXAMPLES :_____________________________________________________________
AA0000.The horizontal coordinates were established by classical geodetic methods
AA0000.and adjusted by the National Geodetic Survey in June, 1995.

AA0000.The horizontal coordinates were established by classical geodetic methods
AA0000.and adjusted by the National Geodetic Survey.

AA0000.The horizontal coordinates were established by GPS observations
AA0000.and adjusted by the National Geodetic Survey in June, 1995.

AA0000.The horizontal coordinates were established by GPS observations
AA0000.and adjusted by the National Geodetic Survey.

AA0000.The coordinates were established by GPS observations
AA0000.and adjusted by the National Geodetic Survey in June, 1995.

AA0000.The coordinates were established by GPS observations
AA0000.and adjusted by the National Geodetic Survey.

AA0000.The horizontal coordinates were established by VLBI observations
AA0000.and local terrestrial surveys and adjusted by the National Geodetic
AA0000.Survey in June, 1995.

AA0000.The horizontal coordinates were established by VLBI observations
AA0000.and local terrestrial surveys and adjusted by the National Geodetic
AA0000.Survey.

AA0000.The horizontal coordinates were scaled from a topographic map and have
AA0000.an estimated accuracy of +/- 6 seconds.

AA0000.The horizontal coordinates were established by autonomous hand held GPS
AA0000.observations and have an estimated accuracy of +/- 10 meters.
```

AA0000.The horizontal coordinates were determined by differentially corrected
AA0000.hand held GPS observations or other comparable positioning techniques
AA0000.and have an estimated accuracy of +/- 3 meters.

AA0000.No horizontal observational check was made to the station.

AA0000.NAD 83(2011) refers to NAD 83 coordinates where the reference
AA0000.frame has been affixed to the stable North American Tectonic Plate.

AA0000.NAD 83(MA11) refers to NAD 83 coordinates where the reference
AA0000.frame has been affixed to the stable Mariana Tectonic Plate.

AA0000.NAD 83(PA11) refers to NAD 83 coordinates where the reference
AA0000.frame has been affixed to the stable Pacific Tectonic Plate.

AA0000.The datum tag of NAD 83(CORS) is equivalent to NAD83(MARP00).

AA0000.The datum tag of NAD 83(CORS) is equivalent to NAD83(PACP00).

AA0000.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).

AA0000.The horizontal coordinates are valid at the epoch date displayed above.
AA0000.The epoch date for horizontal control is a decimal equivalence
AA0000.of Year/Month/Day.

AA0000.The coordinates are valid at the epoch date displayed above.
AA0000.The epoch date for horizontal control is a decimal equivalence
AA0000.of Year/Month/Day.

***

…

DATA ITEM: Superseded Survey Control
DISPLAYED: When available.
COMMENTS : Superseded control are previously published data control values
that are obsolete but reprinted for continuity of records.
Format is similar to 'Current Survey Control',
but is not marked with '*' in cc 8.
AD means ADJUSTED, referring to horizontal position.
GP means GPS_OBS, referring to GPS derived ellipsoidal height.
This is followed by an epoch date (if available).
This is followed by Order (if available, Horizontal or Vertical),
then is followed by Class (if available, Vertical only).

A horizontal Order of 'c' is used for CORS stations.
Superseded elevations have no epoch date but the
Order and Class are displayed for bench mark heights.
The determination text used for superseded elevations
is identical to that used for the current survey control.

USSD refers to positions computed on the US Standard Datum
(also called the North American Datum), which was realized
prior to the North American Datum of 1927. The positions
were obtained from historical documents and the supporting
observations are not stored in the NGS database. Therefore
USSD values should be used with caution."

EXAMPLES :
AA0000 SUPERSEDED SURVEY CONTROL

```
 AA0000
 AB6382  NAD 83(CORS)-  31 52 26.11223(N)   102 18 54.55641(W) AD(1996.00) c
 FV1057  NAD 83(1992)-  35 33 50.72286(N)   120 54 24.79262(W) AD(1991.35) 1
 HW3152  NAD 83(1986)-  38 26 14.08939(N)   079 49 54.57180(W) AD(       ) 3
 HW3152  NAD 27      -  38 26 13.66570(N)   079 49 55.35309(W) AD(       ) 3
 TV1290  PR          -  18 28 33.07855(N)   066 48 04.76640(W) AD(       ) 2
 TU3368  OLD HI      -  21 12 45.75000(N)   156 58 20.86500(W) AD(       ) 3
 GA3397  USSD        -  36 03 40.80000(N    082 37 38.87300(W) AD(       ) 3
 RF0849  ELLIP HT    -       164.56   (m)           (04/19/96) GP(1995.00) 3 1
 HV9260  ELLIP HT    -       131.19   (m)           (06/29/94) GP(       ) 4 1
 HV0454  NGVD 29     -         1.266  (m)            4.15   (f) ADJUSTED    1 2
 GW1440  NGVD 29     -       304.876  (m)         1000.25   (f) ADJ UNCH    2 0
 AA4380  NGVD 29     -       175.86   (m)          577.0    (f) LEVELING    3
 FE2754  NGVD 29     -        84.07   (m)          275.8    (f) N HEIGHT    3
 FV1057  NGVD 29     -       564.37   (m)         1851.6    (f) RESET       3
 CA0570  NGVD 29     -       545.10   (m)         1788.4    (f) COMPUTED    1 2
 AA8531  NGVD 29     -        75.8    (m)          249.     (f) GPS OBS
 UV2087  NGVD 29     -         6.8    (m)           22.     (f) VERT ANG
 LX3119.No superseded survey control is available for this station.
```

The following datums refer to positions computed on the US Standard Datum (also called the North American Datum) or earlier datums, which were realized prior to the North American Datum of 1927. The positions were obtained from historical documents and the supporting observations are not stored in the NGS database. Therefore, these superseded values should be used with caution.

US (CONUS) DATUMS:

ABBREVIATION	DEFINITION
USBS	BESSEL SPHEROID
USCA	CALIFORNIA STANDARD DATUM
USCC	CAMP COLONA 1890 DATUM
USCH	CHARLESTON AND SAVANNAH DATUM
ELPS	EL PASO DATUM
USIA	INDEPENDENT ASTRO DATUM 1880
MORC	MISSOURI RIVER COMMISSION DATUM
USNO	NEW ORLEANS MOBILE DATUM
USSD	US STANDARD DATUM
USVN	VICKSBURG NATCHEZ DATUM

ALASKA DATUMS:

ABBREVIATION	DEFINITION
AKAN	ANCHORAGE PT ASTRO DATUM
AKBA	BARTER ISLAND DATUM OF 1948
AKCC	CAMP COLONA 1890 DATUM
AKFW	KRIPNIYUK KWIKLOKCHUN DATUM
AKFX	FLAXMAN ISLAND DATUM 1912
AKGO	GOLOFNIN BAY 1899 DATUM
AKIL	ILIAMNA ASTRO DATUM
AKMI	MARY ISLAND POINT SIMPSON ASTRO DATUM
AKPB	POINT BARROW DATUM 1945
AKPC	POINT CLARENCE ASTRO DATUM
USPU	PUGET SOUND
AKPW	PRINCE WILLIAM SOUND DATUM
AKSE	SOUTHEAST ALASKA DATUM
AKSG	ST GEORGE 1897 DATUM
AKSM	SAINT MICHAEL ASTRO DATUM
AKSP	SAINT PAUL 1897
AKUN	UNALASKA DATUM
AKVD	VALDEZ DATUM
AKYA	YAKUTAT 1897 DATUM
AKYK	YUKON DATUM

Version 8.3 at 10:01am on 09/17/2013 (Sybase version) and re-released at 11:43am on 05/08/2014 (Oracle version) as part of the final changeover from Sybase to Oracle.

This release encompasses 5 change requests and 2 bug fixes:

6. Display the message "NAVD 88 orthometric height was determined with an earlier geoid model." whenever there is no orthometric height record in the database that matches the current geoid model. Note: the only orthometric height (elevation) records that [can] have a matching GEOID_HT record are those with an ELEV_SOURCE="H" and an ELEV_TECH="G".

   and

7. Remove of the HORIZ ORDER and ELLIP ORDER lines from CORS data sheets for all CORS stations except those where the CORS dtm_tag is "(CORS)" (a.k.a. CORS96).

An example datasheet BEFORE these two changes were made is shown below.

```
PROGRAM = datasheet95, VERSION = 8.2
1        National Geodetic Survey,   Retrieval Date = AUGUST 7, 2013
 AF9658 ***********************************************************************
 AF9658  HT_MOD      -  This is a Height Modernization Survey Station.
 AF9658  CORS        -  This is a GPS Continuously Operating Reference Station.
 AF9658  DESIGNATION -  TUCUMCARI CORS ARP
 AF9658  CORS_ID     -  TCUN
 AF9658  PID         -  AF9658
 AF9658  STATE/COUNTY-  NM/QUAY
 AF9658  COUNTRY     -  US
 AF9658  USGS QUAD   -  TUCUMCARI SE (1968)
 AF9658
 AF9658                        *CURRENT SURVEY CONTROL
 AF9658  ______________________________________________________________________
 AF9658* NAD 83(2011) POSITION- 35 05 06.05130(N) 103 36 32.79519(W)   ADJUSTED
 AF9658* NAD 83(2011) ELLIP HT-  1219.309 (meters)        (08/??/11)   ADJUSTED
 AF9658* NAD 83(2011) EPOCH   -  2010.00
 AF9658* NAVD 88 ORTHO HEIGHT -  1242.76   (meters)    4077.3   (feet) GPS OBS
 AF9658  ______________________________________________________________________
 AF9658  NAD 83(2011) X  - -1,229,662.429 (meters)                    COMP
 AF9658  NAD 83(2011) Y  - -5,079,281.616 (meters)                    COMP
 AF9658  NAD 83(2011) Z  -  3,646,289.652 (meters)                    COMP
 AF9658  GEOID HEIGHT    -        -23.49  (meters)                    GEOID12A
 AF9658  HORZ ORDER      -  SPECIAL (CORS)
 AF9658  ELLP ORDER      -  SPECIAL (CORS)
 AF9658
 AF9658  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AF9658  Type                                          Horiz  Ellip  Dist(km)
 AF9658  ----------------------------------------------------------------------
 AF9658  NETWORK                                       0.29   0.87
 AF9658  ----------------------------------------------------------------------
 AF9658  NOTE: Click here for information on individual local accuracy
 AF9658  values and other accuracy information.
 AF9658
 AF9658
 AF9658.The coordinates were established by GPS observations
```

```
AF9658.and adjusted by the National Geodetic Survey in August 2011.
AF9658
AF9658.NAD 83(2011) refers to NAD 83 coordinates where the reference
AF9658.frame has been affixed to the stable North American Tectonic Plate.
AF9658
AF9658.The coordinates are valid at the epoch date displayed above
AF9658.which is a decimal equivalence of Year/Month/Day.
AF9658
AF9658.The orthometric height was determined by GPS observations and a
AF9658.high-resolution geoid model using precise GPS observation and
AF9658.processing techniques.
AF9658
AF9658.The PID for the CORS L1 Phase Center is AE5457.
AF9658
AF9658.The XYZ, and position/ellipsoidal ht. are equivalent.
AF9658
AF9658.The ellipsoidal height was determined by GPS observations
AF9658.and is referenced to NAD 83.
AF9658
AF9658. The following values were computed from the NAD 83(2011) position.
AF9658
AF9658;                    North         East     Units Scale Factor Converg.
AF9658;SPC NM E     -   453,248.896   231,039.189   MT  0.99996282   +0 24 58.7
AF9658;SPC NM E     - 1,487,034.09    758,001.07   sFT  0.99996282   +0 24 58.7
AF9658
AF9658!             -  Elev Factor  x  Scale Factor =   Combined Factor
AF9658!SPC NM E     -   0.99980865  x   0.99996282  =   0.99977147
AF9658
AF9658                          SUPERSEDED SURVEY CONTROL
AF9658
AF9658  NAD 83(CORS)-  35 05 06.05115(N)    103 36 32.79604(W) AD(2002.00) c
AF9658  ELLIP H (03/??/02) 1219.316  (m)                       GP(2002.00) c c
AF9658  NAD 83(CORS)-  35 05 06.05061(N)    103 36 32.79572(W) AD(1997.00) c
AF9658  ELLIP H (07/??/98) 1219.360  (m)                       GP(1997.00) c c
AF9658  NAD 83(CORS)-  35 05 06.05061(N)    103 36 32.79572(W) AD(1996.00) c
AF9658  ELLIP H (01/??/98) 1219.360  (m)                       GP(1996.00) c c
AF9658
AF9658.Superseded values are not recommended for survey control.
AF9658
AF9658.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AF9658.See file dsdata.txt to determine how the superseded data were derived.
AF9658
AF9658_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SFU2679383355(NAD 83)
AF9658
AF9658_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
AF9658
AF9658                          STATION DESCRIPTION
AF9658
AF9658'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
AF9658'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
AF9658'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
AF9658'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
AF9658'   ftp://cors.ngs.noaa.gov/cors/README.txt
AF9658'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
AF9658'   ftp://cors.ngs.noaa.gov/cors/station_log
AF9658'   http://geodesy.noaa.gov/CORS

*** retrieval complete.
Elapsed Time = 00:00:02
```

The example datasheet AFTER the two changes were made is shown below.

```
1        National Geodetic Survey,   Retrieval Date = AUGUST 7, 2013
 AF9658 ***********************************************************************
 AF9658  HT_MOD      -  This is a Height Modernization Survey Station.
 AF9658  CORS        -  This is a GPS Continuously Operating Reference Station.
 AF9658  DESIGNATION -  TUCUMCARI CORS ARP
 AF9658  CORS_ID     -  TCUN
 AF9658  PID         -  AF9658
 AF9658  STATE/COUNTY-  NM/QUAY
 AF9658  COUNTRY     -  US
 AF9658  USGS QUAD   -  TUCUMCARI SE (1968)
 AF9658
 AF9658                        *CURRENT SURVEY CONTROL
 AF9658  ______________________________________________________________________
 AF9658* NAD 83(2011) POSITION- 35 05 06.05130(N) 103 36 32.79519(W)   ADJUSTED
 AF9658* NAD 83(2011) ELLIP HT-  1219.309 (meters)        (08/??/11)   ADJUSTED
 AF9658* NAD 83(2011) EPOCH   -  2010.00
 AF9658* NAVD 88 ORTHO HEIGHT -  1242.76   (meters)    4077.3   (feet) GPS OBS
 AF9658  ______________________________________________________________________
 AF9658  NAVD 88 orthometric height was determined with an earlier geoid model
 AF9658  NAD 83(2011) X  - -1,229,662.429 (meters)                     COMP
 AF9658  NAD 83(2011) Y  - -5,079,281.616 (meters)                     COMP
 AF9658  NAD 83(2011) Z  -  3,646,289.652 (meters)                     COMP
 AF9658  GEOID HEIGHT    -        -23.49  (meters)                     GEOID12A
 AF9658
 AF9658  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AF9658  Type                                          Horiz  Ellip  Dist(km)
 AF9658  ----------------------------------------------------------------------
 AF9658  NETWORK                                        0.29   0.87
 AF9658  ----------------------------------------------------------------------
 AF9658  NOTE: Click here for information on individual local accuracy
 AF9658  values and other accuracy information.
 AF9658
 AF9658
 AF9658.The coordinates were established by GPS observations
 AF9658.and adjusted by the National Geodetic Survey in August 2011.
 AF9658
 AF9658.NAD 83(2011) refers to NAD 83 coordinates where the reference
 AF9658.frame has been affixed to the stable North American Tectonic Plate.
 AF9658
 AF9658.The coordinates are valid at the epoch date displayed above
 AF9658.which is a decimal equivalence of Year/Month/Day.
 AF9658
 AF9658.The orthometric height was determined by GPS observations and a
 AF9658.high-resolution geoid model using precise GPS observation and
 AF9658.processing techniques.
 AF9658
 AF9658.The PID for the CORS L1 Phase Center is AE5457.
 AF9658
 AF9658.The XYZ, and position/ellipsoidal ht. are equivalent.
 AF9658
 AF9658.The ellipsoidal height was determined by GPS observations
 AF9658.and is referenced to NAD 83.
 AF9658
 AF9658. The following values were computed from the NAD 83(2011) position.
 AF9658
 AF9658;                    North         East     Units Scale Factor Converg.
 AF9658;SPC NM E     -   453,248.896   231,039.189   MT  0.99996282   +0 24 58.7
 AF9658;SPC NM E     - 1,487,034.09    758,001.07   sFT  0.99996282   +0 24 58.7
 AF9658
 AF9658!             -  Elev Factor  x  Scale Factor =   Combined Factor
 AF9658!SPC NM E     -   0.99980865  x   0.99996282  =   0.99977147
 AF9658
 AF9658                          SUPERSEDED SURVEY CONTROL
```

```
 AF9658
 AF9658  NAD 83(CORS)-  35 05 06.05115(N)    103 36 32.79604(W) AD(2002.00) c
 AF9658  ELLIP H (03/??/02) 1219.316  (m)                       GP(2002.00) c c
 AF9658  NAD 83(CORS)-  35 05 06.05061(N)    103 36 32.79572(W) AD(1997.00) c
 AF9658  ELLIP H (07/??/98) 1219.360  (m)                       GP(1997.00) c c
 AF9658  NAD 83(CORS)-  35 05 06.05061(N)    103 36 32.79572(W) AD(1996.00) c
 AF9658  ELLIP H (01/??/98) 1219.360  (m)                       GP(1996.00) c c
 AF9658
 AF9658.Superseded values are not recommended for survey control.
 AF9658
 AF9658.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AF9658.See file dsdata.txt to determine how the superseded data were derived.
 AF9658
 AF9658_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SFU2679383355(NAD 83)
 AF9658
 AF9658_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 AF9658
 AF9658                           STATION DESCRIPTION
 AF9658
 AF9658'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
 AF9658'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 AF9658'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 AF9658'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 AF9658'   ftp://cors.ngs.noaa.gov/cors/README.txt
 AF9658'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 AF9658'   ftp://cors.ngs.noaa.gov/cors/station_log
 AF9658'   http://geodesy.noaa.gov/CORS

 *** retrieval complete.
 Elapsed Time = 00:00:08
```

An example partial datasheet where the (CORS) dtm_tag should still display (because it's a CORS96 station) is shown below.

```
1        National Geodetic Survey,   Retrieval Date = AUGUST 7, 2013
 AF9556 ***********************************************************************
 AF9556  CORS        -  This is a GPS Continuously Operating Reference Station.
 AF9556  DESIGNATION -  OLD TABLE MOUNTN CORS ARP
 AF9556  CORS_ID     -  TMG0
 AF9556  PID         -  AF9556
 AF9556  STATE/COUNTY-  CO/BOULDER
 AF9556  COUNTRY     -  US
 AF9556  USGS QUAD   -  HYGIENE (1979)
 AF9556
 AF9556                        *CURRENT SURVEY CONTROL
 AF9556 ______________________________________________________________________
 AF9556* NAD 83(CORS) POSITION- 40 07 51.33464(N) 105 13 57.72238(W)   ADJUSTED
 AF9556* NAD 83(CORS) ELLIP HT-  1673.646 (meters)        (10/??/95)   ADJUSTED
 AF9556* NAD 83(CORS) EPOCH   -  1996.00
 AF9556* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 AF9556 ______________________________________________________________________
 AF9556  NAD 83(CORS) X  - -1,283,387.210 (meters)                    COMP
 AF9556  NAD 83(CORS) Y  - -4,713,016.789 (meters)                    COMP
 AF9556  NAD 83(CORS) Z  -  4,090,189.996 (meters)                    COMP
 AF9556  GEOID HEIGHT    -        -15.92  (meters)                    GEOID12A
 AF9556  HORZ ORDER      -  SPECIAL (CORS)
 AF9556  ELLP ORDER      -  SPECIAL (CORS)
 AF9556
```

8. Remove the warning message:

```
   <PID>.WARNING-GPS observations at this control monument resulted in a GPS
   <PID>.derived orthometric height which differed from the leveled height by
   <PID>.more than one decimeter (0.1 meter).
```

This message displayed whenever there was a bad bench mark (BM).

The example partial datasheet BEFORE this message was removed is shown below.

```
1        National Geodetic Survey,   Retrieval Date = AUGUST 7, 2013
 FQ0454 ***********************************************************************
 FQ0454  FBN         -  This is a Federal Base Network Control Station.
 FQ0454  DESIGNATION -  FLAGSTAFF NCMN
 FQ0454  PID         -  FQ0454
 FQ0454  STATE/COUNTY-  AZ/COCONINO
 FQ0454  COUNTRY     -  US
 FQ0454  USGS QUAD   -  FLAGSTAFF WEST (1983)
 FQ0454
 FQ0454                        *CURRENT SURVEY CONTROL
 FQ0454  ______________________________________________________________________
 FQ0454* NAD 83(2011) POSITION- 35 12 52.88891(N) 111 38 05.04140(W)   ADJUSTED
 FQ0454* NAD 83(2011) ELLIP HT-  2145.357 (meters)        (06/27/12)   ADJUSTED
 FQ0454* NAD 83(2011) EPOCH   -  2010.00
 FQ0454* NAVD 88 ORTHO HEIGHT -  2168.480  (meters)    7114.42  (feet) ADJUSTED
 FQ0454  ______________________________________________________________________
 FQ0454  NAD 83(2011) X  - -1,923,992.157 (meters)                     COMP
 FQ0454  NAD 83(2011) Y  - -4,850,855.823 (meters)                     COMP
 FQ0454  NAD 83(2011) Z  -  3,658,589.266 (meters)                     COMP
 FQ0454  LAPLACE CORR    -         -2.41  (seconds)                    DEFLEC12A
 FQ0454  GEOID HEIGHT    -        -23.14  (meters)                     GEOID12A
 FQ0454  DYNAMIC HEIGHT  -       2165.393 (meters)     7104.29  (feet) COMP
 FQ0454  MODELED GRAVITY -    979,132.0   (mgal)                       NAVD 88
 FQ0454
 FQ0454  VERT ORDER      -  FIRST     CLASS II
 FQ0454
 FQ0454  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 FQ0454  Type                                           Horiz  Ellip  Dist(km)
 FQ0454  ----------------------------------------------------------------------
 FQ0454  NETWORK                                         0.18   0.37
 FQ0454  ----------------------------------------------------------------------
 FQ0454  MEDIAN LOCAL ACCURACY AND DIST (121 points)   0.46   1.00    107.25
 FQ0454  ----------------------------------------------------------------------
 FQ0454  NOTE: Click here for information on individual local accuracy
 FQ0454  values and other accuracy information.
 FQ0454
 FQ0454
 FQ0454.The horizontal coordinates were established by GPS observations
 FQ0454.and adjusted by the National Geodetic Survey in June 2012.
 FQ0454
 FQ0454.NAD 83(2011) refers to NAD 83 coordinates where the reference
 FQ0454.frame has been affixed to the stable North American tectonic plate. See
 FQ0454.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 FQ0454
 FQ0454.The horizontal coordinates are valid at the epoch date displayed above
 FQ0454.which is a decimal equivalence of Year/Month/Day.
 FQ0454
 FQ0454.The orthometric height was determined by differential leveling and
 FQ0454.adjusted by the NATIONAL GEODETIC SURVEY
 FQ0454.in June 1991.
 FQ0454
 FQ0454.WARNING-GPS observations at this control monument resulted in a GPS
 FQ0454.derived orthometric height which differed from the leveled height by
```

```
FQ0454.more than one decimeter (0.1 meter).
FQ0454
FQ0454.Photographs are available for this station.
FQ0454
```

This same example partial datasheet AFTER this message was removed is shown below.

```
1        National Geodetic Survey,   Retrieval Date = AUGUST 7, 2013
 FQ0454 ***********************************************************************
 FQ0454  FBN         -  This is a Federal Base Network Control Station.
 FQ0454  DESIGNATION -  FLAGSTAFF NCMN
 FQ0454  PID         -  FQ0454
 FQ0454  STATE/COUNTY-  AZ/COCONINO
 FQ0454  COUNTRY     -  US
 FQ0454  USGS QUAD   -  FLAGSTAFF WEST (1983)
 FQ0454
 FQ0454                        *CURRENT SURVEY CONTROL
 FQ0454  ______________________________________________________________________
 FQ0454* NAD 83(2011) POSITION- 35 12 52.88891(N) 111 38 05.04140(W)   ADJUSTED
 FQ0454* NAD 83(2011) ELLIP HT-  2145.357 (meters)        (06/27/12)   ADJUSTED
 FQ0454* NAD 83(2011) EPOCH   -  2010.00
 FQ0454* NAVD 88 ORTHO HEIGHT -  2168.480  (meters)    7114.42  (feet) ADJUSTED
 FQ0454  ______________________________________________________________________
 FQ0454  NAD 83(2011) X  - -1,923,992.157 (meters)                     COMP
 FQ0454  NAD 83(2011) Y  - -4,850,855.823 (meters)                     COMP
 FQ0454  NAD 83(2011) Z  -  3,658,589.266 (meters)                     COMP
 FQ0454  LAPLACE CORR    -         -2.41  (seconds)                    DEFLEC12A
 FQ0454  GEOID HEIGHT    -        -23.14  (meters)                     GEOID12A
 FQ0454  DYNAMIC HEIGHT  -       2165.393 (meters)     7104.29  (feet) COMP
 FQ0454  MODELED GRAVITY -    979,132.0   (mgal)                       NAVD 88
 FQ0454
 FQ0454  VERT ORDER      -  FIRST     CLASS II
 FQ0454
 FQ0454  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 FQ0454  Type                                          Horiz  Ellip  Dist(km)
 FQ0454  ----------------------------------------------------------------------
 FQ0454  NETWORK                                        0.18   0.37
 FQ0454  ----------------------------------------------------------------------
 FQ0454  MEDIAN LOCAL ACCURACY AND DIST (121 points)   0.46   1.00    107.25
 FQ0454  ----------------------------------------------------------------------
 FQ0454  NOTE: Click here for information on individual local accuracy
 FQ0454  values and other accuracy information.
 FQ0454
 FQ0454
 FQ0454.The horizontal coordinates were established by GPS observations
 FQ0454.and adjusted by the National Geodetic Survey in June 2012.
 FQ0454
 FQ0454.NAD 83(2011) refers to NAD 83 coordinates where the reference
 FQ0454.frame has been affixed to the stable North American tectonic plate. See
 FQ0454.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 FQ0454
 FQ0454.The horizontal coordinates are valid at the epoch date displayed above
 FQ0454.which is a decimal equivalence of Year/Month/Day.
 FQ0454
 FQ0454.The orthometric height was determined by differential leveling and
 FQ0454.adjusted by the NATIONAL GEODETIC SURVEY
 FQ0454.in June 1991.
 FQ0454
 FQ0454.Photographs are available for this station.
```

9. Make sure the STATE/COUNTY and COUNTRY lines on the datasheet for only the countries of Canada, Mexico, and those in Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama) come out in the following format:

```
STATE/COUNTY- <state_name>
COUNTRY      - <country_name>
```

versus

```
STATE/COUNTY- <state_code>/<county_name>
COUNTRY      - <country_code>
```

Example datasheets in these countries BEFORE the correction was made are below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TY7857 ***********************************************************************
 TY7857  DESIGNATION -  LAKE IBC 1910
 TY7857  PID         -  TY7857
 TY7857  STATE/COUNTY-  YK/
 TY7857  COUNTRY     -  CA
 TY7857  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DK4127 ***********************************************************************
 DK4127  CORS        -  This is a GPS Continuously Operating Reference Station.
 DK4127  DESIGNATION -  MERIDA WAAS CORS L1 PHASE CENTER
 DK4127  CORS_ID     -  MMD1
 DK4127  PID         -  DK4127
 DK4127  STATE/COUNTY-  YU/
 DK4127  COUNTRY     -  MX
 DK4127  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 CQ9108 ***********************************************************************
 CQ9108  DESIGNATION -  WIN 1960 RM NORTH
 CQ9108  PID         -  CQ9108
 CQ9108  STATE/COUNTY-  BH/
 CQ9108  COUNTRY     -  BH
 CQ9108  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TZ0618 ***********************************************************************
 TZ0618  DESIGNATION -  2129 PIEDRA
 TZ0618  PID         -  TZ0618
 TZ0618  STATE/COUNTY-  CR/
 TZ0618  COUNTRY     -  CS
 TZ0618  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 BF4543 ***********************************************************************
 BF4543  DESIGNATION -  LA UNION
 BF4543  PID         -  BF4543
 BF4543  STATE/COUNTY-  ES/LA UNION
 BF4543  COUNTRY     -  ES
 BF4543  USGS QUAD   -
. . .
```

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DH4292 ***********************************************************************
 DH4292  DESIGNATION -  SANTA ELENA CA
 DH4292  PID         -  DH4292
 DH4292  STATE/COUNTY-  PT/
 DH4292  COUNTRY     -  GT
 DH4292  USGS QUAD   -
. . .


1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DH4295 ***********************************************************************
 DH4295  DESIGNATION -  SAN LORENZO CA
 DH4295  PID         -  DH4295
 DH4295  STATE/COUNTY-  VX/
 DH4295  COUNTRY     -  HO
 DH4295  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 BF4548 ***********************************************************************
 BF4548  DESIGNATION -  2954 II 2
 BF4548  PID         -  BF4548
 BF4548  STATE/COUNTY-  NU/MATAGALPA
 BF4548  COUNTRY     -  NU
 BF4548  USGS QUAD   -
. . .


1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TZ0548 ***********************************************************************
 TZ0548  DESIGNATION -  2201 LAIBON
 TZ0548  PID         -  TZ0548
 TZ0548  STATE/COUNTY-  PN/
 TZ0548  COUNTRY     -  PM
 TZ0548  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 AA4438 ***********************************************************************
 AA4438  DESIGNATION -  LELU
 AA4438  PID         -  AA4438
 AA4438  STATE/COUNTY-  FM/KOSRAE
 AA4438  COUNTRY     -  FM
 AA4438  USGS QUAD   -
. . .
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DM7818 ***********************************************************************
 DM7818  DESIGNATION -  MAJURO CGPS PILLAR ARP
 DM7818  PID         -  DM7818
 DM7818  STATE/COUNTY-  ML/MAJURO
 DM7818  COUNTRY     -  ML
 DM7818  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 AA4432 ***********************************************************************
 AA4432  DESIGNATION -  NGAT
 AA4432  PID         -  AA4432
 AA4432  STATE/COUNTY-  PW/NGATPANG
 AA4432  COUNTRY     -  PW
```

```
 AA4432  USGS QUAD   -
```

Example datasheets in these countries AFTER the correction was made are below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TY7857 ***********************************************************************
 TY7857  DESIGNATION -  LAKE IBC 1910
 TY7857  PID         -  TY7857
 TY7857  STATE/COUNTY-  YK/YUKON TERRITORY
 TY7857  COUNTRY     -  CANADA
 TY7857  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DK4127 ***********************************************************************
 DK4127  CORS        -  This is a GPS Continuously Operating Reference Station.
 DK4127  DESIGNATION -  MERIDA WAAS CORS L1 PHASE CENTER
 DK4127  CORS_ID     -  MMD1
 DK4127  PID         -  DK4127
 DK4127  STATE/COUNTY-  YU/YUCATAN
 DK4127  COUNTRY     -  MEXICO
 DK4127  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 CQ9108 ***********************************************************************
 CQ9108  DESIGNATION -  WIN 1960 RM NORTH
 CQ9108  PID         -  CQ9108
 CQ9108  STATE/COUNTY-  BH/DISTRICT OF BELIZE (BRITISH HONDURAS)
 CQ9108  COUNTRY     -  BELIZE (BRITISH HONDURAS)
 CQ9108  USGS QUAD   -
. . .

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TZ0618 ***********************************************************************
 TZ0618  DESIGNATION -  2129 PIEDRA
 TZ0618  PID         -  TZ0618
 TZ0618  STATE/COUNTY-  CR/PROVINCE OF COSTA RICA
 TZ0618  COUNTRY     -  COSTA RICA
 TZ0618  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 BF4543 ***********************************************************************
 BF4543  DESIGNATION -  LA UNION
 BF4543  PID         -  BF4543
 BF4543  STATE/COUNTY-  ES/LA UNION
 BF4543  COUNTRY     -  EL SALVADOR
 BF4543  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DH4292 ***********************************************************************
 DH4292  DESIGNATION -  SANTA ELENA CA
 DH4292  PID         -  DH4292
 DH4292  STATE/COUNTY-  PT/PETEN
 DH4292  COUNTRY     -  GUATEMALA
 DH4292  USGS QUAD   -
...
```

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DH4295 ***********************************************************************
 DH4295  DESIGNATION -  SAN LORENZO CA
 DH4295  PID         -  DH4295
 DH4295  STATE/COUNTY-  VX/VALLE
 DH4295  COUNTRY     -  HONDURAS
 DH4295  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 BF4548 ***********************************************************************
 BF4548  DESIGNATION -  2954 II 2
 BF4548  PID         -  BF4548
 BF4548  STATE/COUNTY-  NU/MATAGALPA
 BF4548  COUNTRY     -  NICARAGUA
 BF4548  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 TZ0548 ***********************************************************************
 TZ0548  DESIGNATION -  2201 LAIBON
 TZ0548  PID         -  TZ0548
 TZ0548  STATE/COUNTY-  PN/PROVINCE OF PANAMA
 TZ0548  COUNTRY     -  PANAMA
 TZ0548  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 AA4438 ***********************************************************************
 AA4438  DESIGNATION -  LELU
 AA4438  PID         -  AA4438
 AA4438  STATE/COUNTY-  FM/KOSRAE
 AA4438  COUNTRY     -  FEDERATED STATES OF MICRONESIA
 AA4438  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 DM7818 ***********************************************************************
 DM7818  DESIGNATION -  MAJURO CGPS PILLAR ARP
 DM7818  PID         -  DM7818
 DM7818  STATE/COUNTY-  ML/MAJURO
 DM7818  COUNTRY     -  REPUBLIC OF MARSHAL ISLANDS
 DM7818  USGS QUAD   -
...

1        National Geodetic Survey,   Retrieval Date = SEPTEMBER  5, 2013
 AA4432 ***********************************************************************
 AA4432  DESIGNATION -  NGAT
 AA4432  PID         -  AA4432
 AA4432  STATE/COUNTY-  PW/NGATPANG
 AA4432  COUNTRY     -  REPUBLIC OF PALAU
 AA4432  USGS QUAD   -
```

10. Remove the excess blank padding of the agency name in the descriptive text as shown below. Blank spaces are represented by a ␣.

```
    AA5758'6935.
```

```
 AA5758
 AA5758                              STATION RECOVERY (2013)
 AA5758
 AA5758'RECOVERY NOTE BY BASE 9 GEODETIC CONSULTING
SERVICEbbbbbbbbbbbbbbbbb
 2013 (DRD)
 AA5758'MARK IS 14.38 M (47.2 FT) NORTHWEST OF MAILBOX 6900 AND 1.47 M
(4.8
 AA5758'FT) SOUTHWEST OF THE EDGE OF THE PAVEMENT OF THE ROAD.
```

11. Make it so that CORS sites PNB1 (PID=AH8904) and PNB2 (PID=AH8906) publicly publishable. We no longer have to look in the CORS_SITE_STATUS.STATUS field to see if a CORS ARP is publishable. This also means that on unpublishable datasheets that there no longer is a trigger/condition to display the horizontal or vertical reason code of "A - CORS site is not active" on them.

12. Make sure that on the NAVD88 line in the CURRENT SURVEY CONTROL section that the best height is the GPS_OBS record and not the old ADJUSTED record for PIDs BW1876 and BW1864. Also make sure that in the superseded section that the last ADJUSTED record is in the SUPERSEDED SURVEY CONTROL section.

The example datasheet for one of these PIDs, BW1876, BEFORE the correction was made is shown below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 11, 2013
 BW1876 ***********************************************************************
 BW1876  DESIGNATION -  T 337
 BW1876  PID         -  BW1876
 BW1876  STATE/COUNTY-  LA/TENSAS
 BW1876  COUNTRY     -  US
 BW1876  USGS QUAD   -  LAKE BRUIN (1994)
 BW1876
 BW1876                        *CURRENT SURVEY CONTROL
 BW1876  ______________________________________________________________________
 BW1876* NAD 83(2011) POSITION- 31 53 05.72415(N) 091 18 21.69085(W)   ADJUSTED
 BW1876* NAD 83(2011) ELLIP HT-     3.005 (meters)        (06/27/12)   ADJUSTED
 BW1876* NAD 83(2011) EPOCH   -  2010.00
 BW1876* NAVD 88 ORTHO HEIGHT -    29.248  (meters)      95.96  (feet) ADJUSTED
 BW1876  ______________________________________________________________________
 BW1876  NAD 83(2011) X  -   -123,553.673 (meters)                     COMP
 BW1876  NAD 83(2011) Y  - -5,419,403.633 (meters)                     COMP
 BW1876  NAD 83(2011) Z  -  3,349,604.836 (meters)                     COMP
 BW1876  LAPLACE CORR    -         -0.13  (seconds)                    DEFLEC12A
 BW1876  GEOID HEIGHT    -        -26.21  (meters)                     GEOID12A
 BW1876  DYNAMIC HEIGHT  -         29.214 (meters)       95.85  (feet) COMP
 BW1876  MODELED GRAVITY -    979,472.7   (mgal)                       NAVD 88
 BW1876
 BW1876  VERT ORDER      -  FIRST     CLASS II
 BW1876
 BW1876  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 BW1876  Type                                           Horiz  Ellip  Dist(km)
 BW1876  ----------------------------------------------------------------------
 BW1876  NETWORK                                         1.32   1.78
 BW1876  ----------------------------------------------------------------------
 BW1876  MEDIAN LOCAL ACCURACY AND DIST (010 points)    1.39   2.10     34.59
 BW1876  ----------------------------------------------------------------------
 BW1876  NOTE: Click here for information on individual local accuracy
 BW1876  values and other accuracy information.
```

```
BW1876
BW1876
BW1876.The horizontal coordinates were established by GPS observations
BW1876.and adjusted by the National Geodetic Survey in June 2012.
BW1876
BW1876.NAD 83(2011) refers to NAD 83 coordinates where the reference
BW1876.frame has been affixed to the stable North American tectonic plate. See
BW1876.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BW1876
BW1876.The horizontal coordinates are valid at the epoch date displayed above
BW1876.which is a decimal equivalence of Year/Month/Day.
BW1876
BW1876.The orthometric height was determined by differential leveling and
BW1876.adjusted by the NATIONAL GEODETIC SURVEY
BW1876.in February 1994.
BW1876
BW1876.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BW1876
BW1876.The Laplace correction was computed from DEFLEC12A derived deflections.
BW1876
BW1876.The ellipsoidal height was determined by GPS observations
BW1876.and is referenced to NAD 83.
BW1876
BW1876.The dynamic height is computed by dividing the NAVD 88
BW1876.geopotential number by the normal gravity value computed on the
BW1876.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BW1876.degrees latitude (g = 980.6199 gals.).
BW1876
BW1876.The modeled gravity was interpolated from observed gravity values.
BW1876
BW1876. The following values were computed from the NAD 83(2011) position.
BW1876
BW1876;                    North         East     Units Scale Factor Converg.
BW1876;SPC LA N     -   154,175.371 1,112,951.213   MT  0.99991490   +0 37 52.5
BW1876;SPC LA N     -   505,823.70  3,651,407.44   sFT  0.99991490   +0 37 52.5
BW1876;UTM  15      - 3,528,931.689   660,214.885   MT  0.99991658   +0 53 41.9
BW1876
BW1876!             -  Elev Factor  x  Scale Factor =   Combined Factor
BW1876!SPC LA N     -   0.99999953  x   0.99991490  =   0.99991443
BW1876!UTM  15      -   0.99999953  x   0.99991658  =   0.99991611
BW1876
BW1876                          SUPERSEDED SURVEY CONTROL
BW1876
BW1876  NAD 83(2007)-  31 53 05.72402(N)    091 18 21.69142(W) AD(2002.00) 0
BW1876  ELLIP H (02/10/07)    3.013  (m)                       GP(2002.00)
BW1876  NAD 83(1992)-  31 53 05.72380(N)    091 18 21.69127(W) AD(       ) B
BW1876  ELLIP H (06/28/04)    3.012  (m)                       GP(       ) 4 2
BW1876  NAVD 88 (06/28/04)   29.17   (m)  GEOID03 model used   GPS OBS
BW1876  NAVD 88 (06/15/91)   29.259  (m)           95.99   (f) SUPERSEDED  1 2
BW1876  NGVD 29 (??/??/??)   29.260  (m)           96.00   (f) ADJUSTED    1 2
BW1876
BW1876.Superseded values are not recommended for survey control.
BW1876
BW1876.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BW1876.See file dsdata.txt to determine how the superseded data were derived.
BW1876
BW1876_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RXR6021428931(NAD 83)
BW1876
BW1876_MARKER: DB = BENCH MARK DISK
BW1876_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
BW1876_SP_SET: STAINLESS STEEL ROD
BW1876_STAMPING: T 337 1979
BW1876_PROJECTION: RECESSED 5 CENTIMETERS
```

```
 BW1876_MAGNETIC: N = NO MAGNETIC MATERIAL
 BW1876_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 BW1876_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 BW1876+SATELLITE: SATELLITE OBSERVATIONS - 2003
 BW1876_ROD/PIPE-DEPTH: 7.62 meters
 BW1876
 BW1876  HISTORY     - Date     Condition        Report By
 BW1876  HISTORY     - 1979     MONUMENTED       NGS
 BW1876  HISTORY     - 2003     GOOD             PYBURN
 BW1876
 BW1876                          STATION DESCRIPTION
 BW1876
 BW1876'DESCRIBED BY NATIONAL GEODETIC SURVEY 1979
 BW1876'8.15 MI NE FROM WATERPROOF.
 BW1876'8.15 MILES NORTHEAST ALONG THE GRAVEL ROAD ON TOP OF THE LEVEE FROM
 BW1876'THE WATER TANK AT THE JUNCTION OF 4TH STREET IN WATERPROOF, TO A
 BW1876'CATTLE GUARD AND THE MARK ON THE LEFT, 0.15 MILE EAST OF AN OIL WELL
 BW1876'AND A CLUSTER OF OIL TANKS, 9.5 FEET NORTH OF THE CENTER OF THE CATTLE
 BW1876'GUARD AND ROAD, 2 FEET NORTHWEST OF THE SOUTH FENCE POST AT THE NORTH
 BW1876'SIDE OF THE CATTLE GUARD, 1 FOOT WEST OF THE BARB WIRE FENCE.
 BW1876'THE MARK IS 1 FT  S FROM A WITNESS POST.
 BW1876'THE MARK IS 1 FT BELOW ROAD.
 BW1876
 BW1876                          STATION RECOVERY (2003)
 BW1876
 BW1876'RECOVERY NOTE BY PYBURN AND ODOM, INCORPORATED 2003 (RC)
 BW1876'RECOVERED AS DESCRIBED IPYBURN

 *** retrieval complete.
 Elapsed Time = 00:00:03
```

The example datasheet for one of these PIDs, BW1876, AFTER the correction was made is shown below.

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 11, 2013
 BW1876 ***********************************************************************
 BW1876  HT_MOD      -  This is a Height Modernization Survey Station.
 BW1876  DESIGNATION -  T 337
 BW1876  PID         -  BW1876
 BW1876  STATE/COUNTY-  LA/TENSAS
 BW1876  COUNTRY     -  US
 BW1876  USGS QUAD   -  LAKE BRUIN (1994)
 BW1876
 BW1876                         *CURRENT SURVEY CONTROL
 BW1876  ______________________________________________________________________
 BW1876* NAD 83(2011) POSITION- 31 53 05.72415(N) 091 18 21.69085(W)   ADJUSTED
 BW1876* NAD 83(2011) ELLIP HT-     3.005 (meters)        (06/27/12)   ADJUSTED
 BW1876* NAD 83(2011) EPOCH   -  2010.00
 BW1876* NAVD 88 ORTHO HEIGHT -    29.17   (meters)      95.7   (feet) GPS OBS
 BW1876  ______________________________________________________________________
 BW1876  NAVD 88 orthometric height was determined with geoid model    GEOID03
 BW1876  GEOID HEIGHT    -        -26.16  (meters)                     GEOID03
 BW1876  GEOID HEIGHT    -        -26.21  (meters)                     GEOID12A
 BW1876  NAD 83(2011) X  -   -123,553.673 (meters)                     COMP
 BW1876  NAD 83(2011) Y  - -5,419,403.633 (meters)                     COMP
 BW1876  NAD 83(2011) Z  -  3,349,604.836 (meters)                     COMP
 BW1876  LAPLACE CORR    -         -0.13  (seconds)                    DEFLEC12A
 BW1876
 BW1876  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 BW1876  Type                                           Horiz  Ellip  Dist(km)
 BW1876  ----------------------------------------------------------------------
```

```
BW1876  NETWORK                                          1.32   1.78
BW1876  ---------------------------------------------------------------------
BW1876  MEDIAN LOCAL ACCURACY AND DIST (010 points)   1.39   2.10     34.59
BW1876  ---------------------------------------------------------------------
BW1876  NOTE: Click here for information on individual local accuracy
BW1876  values and other accuracy information.
BW1876
BW1876
BW1876.The horizontal coordinates were established by GPS observations
BW1876.and adjusted by the National Geodetic Survey in June 2012.
BW1876
BW1876.NAD 83(2011) refers to NAD 83 coordinates where the reference
BW1876.frame has been affixed to the stable North American tectonic plate. See
BW1876.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BW1876
BW1876.The horizontal coordinates are valid at the epoch date displayed above
BW1876.which is a decimal equivalence of Year/Month/Day.
BW1876
BW1876.The orthometric height was determined by GPS observations and a
BW1876.high-resolution geoid model using precise GPS observation and
BW1876.processing techniques.
BW1876
BW1876.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BW1876
BW1876.The Laplace correction was computed from DEFLEC12A derived deflections.
BW1876
BW1876.The ellipsoidal height was determined by GPS observations
BW1876.and is referenced to NAD 83.
BW1876
BW1876. The following values were computed from the NAD 83(2011) position.
BW1876
BW1876;                    North         East     Units Scale Factor Converg.
BW1876;SPC LA N     -   154,175.371 1,112,951.213   MT  0.99991490   +0 37 52.5
BW1876;SPC LA N     -   505,823.70  3,651,407.44   sFT  0.99991490   +0 37 52.5
BW1876;UTM  15      - 3,528,931.689   660,214.885   MT  0.99991658   +0 53 41.9
BW1876
BW1876!             -  Elev Factor  x  Scale Factor =   Combined Factor
BW1876!SPC LA N     -   0.99999953  x   0.99991490  =   0.99991443
BW1876!UTM  15      -   0.99999953  x   0.99991658  =   0.99991611
BW1876
BW1876                          SUPERSEDED SURVEY CONTROL
BW1876
BW1876  NAD 83(2007)-  31 53 05.72402(N)    091 18 21.69142(W) AD(2002.00) 0
BW1876  ELLIP H (02/10/07)    3.013  (m)                        GP(2002.00)
BW1876  NAD 83(1992)-  31 53 05.72380(N)    091 18 21.69127(W) AD(       ) B
BW1876  ELLIP H (06/28/04)    3.012  (m)                        GP(       ) 4 2
BW1876  NAVD 88 (02/14/94)   29.248  (m)           95.96   (f) ADJUSTED    1 2
BW1876  NAVD 88 (06/15/91)   29.259  (m)           95.99   (f) SUPERSEDED  1 2
BW1876  NGVD 29 (??/??/??)   29.260  (m)           96.00   (f) ADJUSTED    1 2
BW1876
BW1876.Superseded values are not recommended for survey control.
BW1876
BW1876.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BW1876.See file dsdata.txt to determine how the superseded data were derived.
BW1876
BW1876_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RXR6021428931(NAD 83)
BW1876
BW1876_MARKER: DB = BENCH MARK DISK
BW1876_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
BW1876_SP_SET: STAINLESS STEEL ROD
BW1876_STAMPING: T 337 1979
BW1876_PROJECTION: RECESSED 5 CENTIMETERS
BW1876_MAGNETIC: N = NO MAGNETIC MATERIAL
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BW1876_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
BW1876_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BW1876+SATELLITE: SATELLITE OBSERVATIONS - 2003
BW1876_ROD/PIPE-DEPTH: 7.62 meters
BW1876
BW1876  HISTORY     - Date     Condition        Report By
BW1876  HISTORY     - 1979     MONUMENTED       NGS
BW1876  HISTORY     - 2003     GOOD             PYBURN
BW1876
BW1876                          STATION DESCRIPTION
BW1876
BW1876'DESCRIBED BY NATIONAL GEODETIC SURVEY 1979
BW1876'8.15 MI NE FROM WATERPROOF.
BW1876'8.15 MILES NORTHEAST ALONG THE GRAVEL ROAD ON TOP OF THE LEVEE FROM
BW1876'THE WATER TANK AT THE JUNCTION OF 4TH STREET IN WATERPROOF, TO A
BW1876'CATTLE GUARD AND THE MARK ON THE LEFT, 0.15 MILE EAST OF AN OIL WELL
BW1876'AND A CLUSTER OF OIL TANKS, 9.5 FEET NORTH OF THE CENTER OF THE CATTLE
BW1876'GUARD AND ROAD, 2 FEET NORTHWEST OF THE SOUTH FENCE POST AT THE NORTH
BW1876'SIDE OF THE CATTLE GUARD, 1 FOOT WEST OF THE BARB WIRE FENCE.
BW1876'THE MARK IS 1 FT  S FROM A WITNESS POST.
BW1876'THE MARK IS 1 FT BELOW ROAD.
BW1876
BW1876                          STATION RECOVERY (2003)
BW1876
BW1876'RECOVERY NOTE BY PYBURN AND ODOM, INCORPORATED 2003 (RC)
BW1876'RECOVERED AS DESCRIBED IPYBURN

*** retrieval complete.
Elapsed Time = 00:00:05
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Version 8.2 at 12:55pm on 07/25/2013

This release adds the default crustal motion epoch of 2002.00 to positions found in the SUPERSEDED SURVEY CONTROL section of a datasheet where:

(1) The control point's superseded position has a dtm_tag of (2007) and
(2) The control point is located in a US state other than the six western states of "AK", "AZ", "CA", "NV', "OR", and WA.

and it adds the same default crustal motion epoch of 2002.00 to the this superseded position's matching ellipsoid height if and only if it's crustal motion is blank.

The crustal motion default epoch of 2002.00 on an ellipsoid height in the superseded survey control section of a datasheet (that matches by adj_id a superseded NAD83(2007) position) should not replace a *non-blank crustal motion epoch* already there such as 2006.81 for control point AU0092, a control point that resides in the dynamic regions/subsidence areas.

Example: The 2006.81 crustal motion epoch on the superseded ellipsoid height should not be replaced with 2002.00 as 2006.81 is a non-blank crustal motion epoch.

```
AU0092                          SUPERSEDED SURVEY CONTROL
AU0092
AU0092  ELLIP H (10/11/11)  -22.177  (m)                        GP(       ) 4 1
AU0092  NAD 83(2007)-  29 46 22.52606(N)    091 10 36.97894(W) AD(2002.00) A
AU0092  ELLIP H (03/12/08)  -22.114  (m)                        GP(2006.81) 3 1
AU0092  NAVD 88 (02/14/94)    3.834  (m)           12.58    (f) ADJUSTED    1 1
AU0092  NGVD 29 (??/??/??)    3.913  (m)           12.84    (f) ADJUSTED    1 1
```

Note: dtm_tag (i.e. "(2007)") is not to be confused with the horizontal datum (i.e. NAD83), even though both of them appear concatenated together (i.e. NAD83(2007)) on a datasheet. They are really two separate fields. Only positions with NAD83 can have the dtm_tag of (2007).

Version 8.1 release at 5:54pm on 03/19/2013

This release incorporates the new requirements for modifying the datasheet display rules for VTDP information in the Gulf Region found in the document https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V8.1/RD_2013-02-11_Modify_rules_for_display_of_VTDP_messages.docx This release builds on top of dynamic region (in LA) initially defined in datasheet95 V7.89. Please refer to https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V7.89/DATASHEET95_ReleaseNotes_7_89_updated.docx for more information on how the Gulf Region's dynamic regions.

A dynamic region/subsidence area is an area known or suspected of subsidence, uplift, or other tectonic vertical motion. In 2005, there was a single dynamic region in the state of LA that was defined with a *latitude/longitude polygon*. In 2007 the LA dynamic region polygon was put aside in favor of defining the dynamic regions in the state of LA with a series of *three minimum/maximum latitude/longitude areas*. As of 2012 the dynamic regions now spans the lower parts of Gulf Coast states of AL, FL, MS, and LA and is comprised of several

minimum/maximum latitude/longitude areas. These regions have been updated in this release and are comprised of the following sub-areas shown in Table 1. The changes to the latitude and longitude ranges are highlighted in green.

Table 1: Dynamic Regions/Subsidence Areas of the Gulf Coast

State	Latitude Range	Longitude Range
LA	latitude ≤ N303432	longitude ≥ W0912738
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738
LA	None	longitude ≤ W0903401
MS	latitude ≤ N320608	None
AL	latitude ≤ N312344	longitude ≥ W0880000
FL	latitude ≤ N303716	longitude ≥ W0870744

In a dynamic region/subsidence area, datasheets are publicly publishable for control points in specific projects (a.k.a. adjustment identifiers). If a control point is not part of these specific projects, then a public datasheet also includes the reason that the elevation for this control point should not be used in project (sample output below).

```
DATABASE = QCTESTNGSIDB., PROGRAM = datasheet95, VERSION = 8.1
1        National Geodetic Survey,   Retrieval Date = MARCH 15, 2013
 AU2715 ***********************************************************************
 AU2715  DESIGNATION -  BLOUNT
 AU2715  PID         -  AU2715
 AU2715  STATE/COUNTY-  LA/ORLEANS
 AU2715  COUNTRY     -  US
 AU2715  USGS QUAD   -  NEW ORLEANS EAST (1992)
 AU2715
 AU2715                         *CURRENT SURVEY CONTROL
 AU2715  ______________________________________________________________________
 AU2715* NAD 83(1992) POSITION- 29 59 16.91707(N) 090 04 04.03998(W)   ADJUSTED
 AU2715* NAD 83(1992) ELLIP HT-   -26.558 (meters)        (01/21/03)   ADJUSTED
 AU2715* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AU2715  **This station is located in a suspected subsidence area (see below).
 AU2715  ______________________________________________________________________
 AU2715  NAD 83(1992) X  -     -6,541.453 (meters)                     COMP
 AU2715  NAD 83(1992) Y  - -5,528,892.959 (meters)                     COMP
 AU2715  NAD 83(1992) Z  -  3,169,211.502 (meters)                     COMP
 AU2715  LAPLACE CORR    -         -0.03  (seconds)                    DEFLEC12A
 AU2715  GEOID HEIGHT    -        -26.07  (meters)                     GEOID12A
 AU2715  MODELED GRAVITY -    979,315.7   (mgal)                       NAVD 88
 AU2715
 AU2715  HORZ ORDER      -  FIRST
 AU2715  VERT ORDER      -  FIRST     CLASS II (See Below)
 AU2715  ELLP ORDER      -  FOURTH    CLASS II
 AU2715
 AU2715.The horizontal coordinates were established by GPS observations
 AU2715.and adjusted by the National Geodetic Survey in January 1993.
 AU2715
 AU2715 ** This station is in an area of known vertical motion.  If an
 AU2715 ** orthometric height was ever established but is not available
 AU2715 ** in the current survey control section, the orthometric height
 AU2715 ** is considered suspect.  Suspect heights are available in the
 AU2715 ** superseded section only if requested.
 AU2715
 AU2715.The vertical order pertains to the NGVD 29 superseded value.
```

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AU2715
AU2715.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AU2715
AU2715.The Laplace correction was computed from DEFLEC12A derived deflections.
AU2715
AU2715.The ellipsoidal height was determined by GPS observations
AU2715.and is referenced to NAD 83.
AU2715
AU2715.The modeled gravity was interpolated from observed gravity values.
AU2715
AU2715. The following values were computed from the NAD 83(1992) position.
AU2715
AU2715;                    North         East     Units Scale Factor Converg.
AU2715;SPC LA S     -   165,614.205 1,122,110.777   MT  0.99992577   +0 37 58.0
AU2715;SPC LA S     -   543,352.60  3,681,458.44   sFT  0.99992577   +0 37 58.0
AU2715;UTM  15      - 3,321,079.437   782,901.138   MT  1.00058755   +1 27 59.6
AU2715;UTM  16      - 3,321,422.241   204,012.094   MT  1.00068105   -1 32 04.0
AU2715
AU2715!             -  Elev Factor  x  Scale Factor =   Combined Factor
AU2715!SPC LA S     -   1.00000417  x   0.99992577  =   0.99992994
AU2715!UTM  15      -   1.00000417  x   1.00058755  =   1.00059172
AU2715!UTM  16      -   1.00000417  x   1.00068105  =   1.00068522
AU2715
AU2715:                Primary Azimuth Mark                    Grid Az
AU2715:SPC LA S     -  NEW ORLEANS TV STA WGNO TOWER           173 56 45.5
AU2715:UTM  15      -  NEW ORLEANS TV STA WGNO TOWER           173 06 43.9
AU2715:UTM  16      -  NEW ORLEANS TV STA WGNO TOWER           176 06 47.5
AU2715
AU2715|---------------------------------------------------------------------|
AU2715| PID    Reference Object                    Distance      Geod. Az  |
AU2715|                                                          dddmmss.s |
AU2715| DD6373 BLOUNT RM 1                          9.753 METERS 00927     |
AU2715| DD6374 BLOUNT RM 2                          7.636 METERS 12049     |
AU2715| AU2712 NEW ORLEANS TV STA WGNO TOWER      APPROX. 4.4 KM 1743443.5 |
AU2715| AU2716 BLOUNT LDH 1972 A POINT             11.035 METERS 31101     |
AU2715|---------------------------------------------------------------------|
AU2715
AU2715                          SUPERSEDED SURVEY CONTROL
AU2715
AU2715  ELLIP H (01/21/93)  -26.535  (m)                        GP(       ) 4 2
AU2715  NAD 83(1986)-  29 59 16.93360(N)    090 04 04.03759(W) AD(       ) 1
AU2715  NAD 83(1986)-  29 59 16.93200(N)    090 04 04.03840(W) AD(       ) 2
AU2715  NAD 27      -  29 59 16.20246(N)    090 04 03.78046(W) AD(       ) 2
AU2715
AU2715.Superseded values are not recommended for survey control.
AU2715
AU2715.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU2715.See file dsdata.txt to determine how the superseded data were derived.
AU2715
AU2715_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP8290121079(NAD 83)
AU2715
AU2715_MARKER: DS = TRIANGULATION STATION DISK
AU2715_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
AU2715_SP_SET: APRON
AU2715_STAMPING: BLOUNT 1972
AU2715_MARK LOGO: LADHGS
AU2715_MAGNETIC: N = NO MAGNETIC MATERIAL
AU2715_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AU2715_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AU2715+SATELLITE: SATELLITE OBSERVATIONS - November 04, 1994
AU2715
AU2715  HISTORY     - Date     Condition        Report By
AU2715  HISTORY     - 1972     MONUMENTED       LADH
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AU2715  HISTORY     - 1972     GOOD             LADH
AU2715  HISTORY     - 19880920 GOOD             LADTD
AU2715  HISTORY     - 19890125 GOOD
AU2715  HISTORY     - 19910110 GOOD             NGS
AU2715  HISTORY     - 19941104 GOOD             NGS
AU2715
AU2715                          STATION DESCRIPTION
AU2715
AU2715'DESCRIBED BY LA DEPT OF HIGHWAYS 1972 (RT)
AU2715'THE STATION IS LOCATED 3 MILES NORTHEAST OF DOWNTOWN NEW ORLEANS, 5
AU2715'MILES NORTH OF GRETNA AND 8 MILES EAST OF KENNER, IN THE SOUTHEAST
AU2715'QUARTER OF SECTION 24, T12S, R11E, AND ON THE PROPERTY OWNED BY
AU2715'ORLEANS PARISH WATER BOARD.
AU2715'
AU2715'TO REACH THE STATION FROM THE INTERSECTION OF NORTH BROAD STREET AND
AU2715'TULANE AVENUE IN DOWNTOWN NEW ORLEANS, GO NORTHEAST ALONG NORTH
AU2715'BROAD STREET FOR 2.3 MILES TO PUMPING STATION NO. 3 ON THE LEFT AND
AU2715'NORTHWEST OF THE STREET.  THE STATION IS SET TO THE SOUTH OF
AU2715'THE PUMPING STATION NEAR A CLEAN-OUT RAMP ON A CANAL.
AU2715'
AU2715'THE STATION MARK IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN A
AU2715'CONCRETE SLAB CLEAN-OUT RAMP ON A CANAL, FLUSH WITH THE SLAB.  IT
AU2715'IS STAMPED BLOUNT 1972.  IT IS 74 FEET NORTH OF A POWER POLE, 58
AU2715'FEET WEST OF THE CENTER OF THE SOUTH BOUND LANE ON NORTH BROAD
AU2715'STREET, 43 FEET WEST OF A METAL DRAIN, 42 FEET NORTHWEST OF A
AU2715'SIGNAL LIGHT STANDARD, 39 FEET EAST OF THE NORTHEAST CORNER OF
AU2715'A METAL BUILDING, 2 FEET NORTH OF A METAL WITNESS POST AND SIGN, AND
AU2715'1 FOOT EAST OF THE WEST END OF A CONVEYOR FOR CLEAN-OUT ON CANAL.
AU2715'
AU2715'REFERENCE MARK 1 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN THE
AU2715'SOUTHWEST CORNER OF A CONCRETE BASE FOR CONVEYOR, FLUSH WITH
AU2715'CONCRETE, 4 FEET ABOVE GROUND.  IT IS STAMPED BLOUND R.M. 1 1972.  IT
AU2715'IS 71 FEET WEST-SOUTHWEST OF THE CENTER OF THE SOUTH BOUND LANE OF
AU2715'NORTH BROAD STREET, 24 FEET NORTH-NORTHEAST OF THE NORTHEAST
AU2715'CORNER OF A METAL BUILDING, 21 FEET EAST-SOUTHEAST OF A CANAL
AU2715'CLEAN-OUT PLATFORM, AND 14 FEET NORTHWEST OF AN ELECTRIC CONTROL
AU2715'PANEL.
AU2715'
AU2715'REFERENCE MARK 2 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLD IN A
AU2715'CONCRETE SLAB FOR A CLEAN-OUT FOR CANAL, FLUSH WITH THE CONCRETE
AU2715'SLAB.  IT IS STAMPED BLOUNT R.M. 2 1972.  IT IS 80 FEET NORTH OF A
AU2715'POWER POLE, 33 FEET NORTH-NORTHWEST OF A SIGNAL LIGHT STANDARD, 32
AU2715'FEET WEST OF THE CENTER OF THE SOUTH BOUND LANE ON NORTH BROAD
AU2715'STREET, 18 FEET NORTH OF A METAL DRAIN, AND 1.5 FEET WEST OF THE EAST
AU2715'END OF A CONVEYOR ON A CLEAN-OUT FOR A CANAL.
AU2715'
AU2715'HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.
AU2715
AU2715                          STATION RECOVERY (1972)
AU2715
AU2715'RECOVERY NOTE BY LA DEPT OF HIGHWAYS 1972
AU2715'RECOVERED IN GOOD CONDITION.
AU2715
AU2715                          STATION RECOVERY (1988)
AU2715
AU2715'RECOVERY NOTE BY LA TRANSP AND DEV 1988
AU2715'THE STATION IS LOCATED 4.8 KM (3.00 MI) NORTHEAST OF DOWNTOWN NEW
AU2715'ORLEANS, 8 KM (4.95 MI) NORTH OF GRETNA AND 12.8 KM (7.95 MI) EAST OF
AU2715'KENNER, IN THE SOUTHEAST QUARTER OF SECTION 24, T 12 S, R 11 E.
AU2715'OWNERSHIP--ORLEANS PARISH WATER BOARD.
```

AU2715'TO REACH THE STATION FROM THE INTERSECTION OF NORTH BROAD STREET AND
AU2715'TULANE AVENUE IN DOWNTOWN NEW ORLEANS, GO NORTHEAST ALONG NORTH BROAD
AU2715'STREET FOR 3.7 KM (2.30 MI) TO PUMPING STATION NO. 3 ON THE LEFT AND
AU2715'NORTHWEST OF THE STREET. THE STATION IS SET TO THE SOUTH OF THE
AU2715'PUMPING STATION NEAR A CLEAN-OUT RAMP ON A CANAL.
AU2715'THE STATION MARK IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U.
AU2715'S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN A CONCRETE
AU2715'SLAB FLUSH WITH THE SURFACE OF THE RAMP 22.6 M (74.1 FT) NORTH OF A
AU2715'POWER POLE, 17.7 M (58.1 FT) WEST OF THE CENTER OF THE SOUTH BOUND
AU2715'LANE OF NORTH BROAD STREET, 13.1 M (43.0 FT) WEST OF A METAL DRAIN,
AU2715'12.8 M (42.0 FT) NORTHWEST OF A SIGNAL LIGHT STANDARD, 11.9 M
AU2715'(39.0 FT) EAST OF THE NORTHEAST CORNER OF A METAL BUILDING, 0.6 M
AU2715'(2.0 FT) NORTH OF A METAL WITNESS POST AND SIGN AND 0.3 M (1.0 FT)
AU2715'EAST OF THE WEST END OF A CONVEYER FOR CLEAN-OUT ON THE CANAL.
AU2715'REFERENCE MARK 1 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U
AU2715'S COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN THE SOUTHWEST
AU2715'CORNER OF A CONCRETE BASE FOR A CONVEYER, 1.2 M (3.9 FT) ABOVE THE
AU2715'GROUND STAMPED---BLOUNT RM 1 1972---, 21.6 M (70.9 FT) WEST-SOUTHWEST
AU2715'OF THE CENTER OF THE SOUTH BOUND LANE OF NORTH BROAD STREET, 7.3 M
AU2715'(24.0 FT) NORTH-NORTHEAST OF THE NORTHEAST CORNER OF A METAL BUILDING,
AU2715'6.4 M (21.0 FT) EAST-SOUTHEAST OF A CANAL CLEAN-OUT PLATFORM AND 4.3 M
AU2715'(14.1 FT) NORTHWEST OF AN ELECTRIC CONTROL PANEL.
AU2715'REFERENCE MARK 2 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U
AU2715'S COAST AND GEODETIC SURVEY DISK STAMPED---BLOUNT RM 2 1972---SET IN A
AU2715'DRILL HOLE IN A CONCRETE SLAB FOR A CLEAN-OUT FOR THE CANAL 24.4 M
AU2715'(80.1 FT) NORTH OF A POWER POLE, 10.1 M (33.1 FT) NORTH-NORTHWEST OF A
AU2715'SIGNAL LIGHT STANDARD, 9.8 M (32.2 FT) WEST OF THE CENTER OF THE SOUTH
AU2715'BOUND LANE OF NORTH BROAD STREET, 5.5 M (18.0 FT) NORTH OF A METAL
AU2715'DRAIN AND 0.46 M (1.5 FT) WEST OF THE EAST END OF THE CONVEYER.
AU2715
AU2715   STATION RECOVERY (1989)
AU2715
AU2715'RECOVERED 1989
AU2715'RECOVERED IN GOOD CONDITION.
AU2715
AU2715   STATION RECOVERY (1991)
AU2715
AU2715'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
AU2715'IN NEW ORLEANS, AT THE INTERSECTION OF NORTH BROAD STREET AND A.P.
AU2715'TUREAUD AVENUE, IN A CONCRETE APRON AT THE SOUTHWEST CORNER OF A
AU2715'CANAL CLEAN OUT RAMP AT PUMP STATION 3, 17.7 M (58.1 FT) NORTHWEST OF
AU2715'THE CENTER OF THE SOUTHWEST BOUND LANES OF THE STREET, 12.8 M (42.0
AU2715'FT) NORTH OF A TRAFFIC LIGHT, 3.3 M (10.8 FT) EAST OF A CHAIN-LINK
AU2715'FENCE, 2.0 M (6.6 FT) NORTH OF A CHAIN-LINK FENCE, 0.6 M (2.0 FT)
AU2715'ABOVE THE LEVEL OF THE STREET, AND ON THE EXTENDED CENTER OF THE
AU2715'NORTHBOUND LANES OF THE AVENUE.
AU2715
AU2715   STATION RECOVERY (1994)
AU2715
AU2715'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GAS)
AU2715'IN NEW ORLEANS, AT THE INTERSECTION OF NORTH BROAD STREET AND A P
AU2715'TUREAUD AVENUE, IN A CONCRETE APRON AT THE SOUTHWEST CORNER OF A CANAL
AU2715'CLEAN OUT RAMP AT PUMP STATION NUMBER 3, 17.7 M (58.1 FT) NORTHWEST OF
AU2715'THE CENTER OF THE SOUTHWEST BOUND LANES OF THE STREET, 12.8 M (42.0
AU2715'FT) NORTH OF A TRAFFIC LIGHT, 3.3 M (10.8 FT) SOUTHEAST OF A
AU2715'CHAIN-LINK FENCE, 2.0 M (6.6 FT) NORTHEAST OF A CHAIN-LINK FENCE, 0.6
AU2715'M (2.0 FT) ABOVE THE LEVEL OF THE STREET, AND ON THE EXTENDED CENTER
AU2715'OF THE NORTHBOUND LANES OF THE AVENUE. NOTE--THE MARK IS ON PROPERTY
AU2715'OWNED BY THE CITY OF NEW ORLEANS. TO GAIN ACCESS TO THE MARK
AU2715'CONTACT--RAY FABRE, 2800 PEOPLES AVENUE, NEW ORLEANS, LA 70119,
AU2715'TELEPHONE NUMBER (504) 585 2420.

*** retrieval complete.

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 Elapsed Time = 00:00:04
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-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- --------------------------------                             -
-       A        CORS site is not active                                      -
-       B        Station is a RBN antenna                                     -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       L        CORS L1 Phase Center is not publishable                      -
-       N        No geodetic control                                          -
-       O        Outside NGS publication area                                 -
-       P        Purpose of position is not for network control               -
-       R        Restricted position                                          -
-       T        Station is a temporary point/bench mark                      -
-       V        Station is a VOR antenna                                     -
-       W        Weakly determined position                                   -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-                                                                             -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ------------------------------                               -
-       A        CORS site is not active                                      -
-       D        No descriptive text available                                -
-       F        Bench mark not yet adjusted                                  -
-       N        No geodetic control                                          -
-       L        CORS L1 Phase Center is not publishable                      -
-       O        Outside NGS publication area                                 -
-       R        Restricted elevation                                         -
-       S        Mark is in a subsidence area                                 -
-       T        Station is a temporary point/bench mark                      -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-       Z        Presumed destroyed                                           -
-                                                                             -
-                                                                             -
-   NOTE - Stations found in this listing may still have a valid              -
-          datasheet produced by use of other publishable values.             -
-          For example, an ADJUSTED height may be non-publishable             -
-          but a good GPS height might be found on the datasheet.             -
-          This listing does not imply that values found on the datasheet     -
-          are restricted.  If it's on the datasheet, use it.                 -
-                                                                             -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
```

```
>AU2715 BLOUNT                        29 59 16.9/090 04 04.0     -0.    1 1  S
```

Control points in a dynamic region/subsidence area are publicly publishable if:

(1) The control point is in the Gulf Coast dynamic regions/subsidence areas (Table 1) ***and*** the control point is a list of publishable project/state combinations in the dynamic regions/subsidence areas (Table 3).

(2) The control point is in the Gulf Coast dynamic regions/subsidence areas (Table 1) ***and*** the control point itself is designated as being publicly publishable in the normally unpublishable region due to being constrained (i.e. must appear in a list of publishable UIDs for the region found in Table 4).

Below is a complete list of projects (a.k.a. ADJ_IDs) and their epochs that are in the Gulf Coast dynamic regions/subsidence areas. New projects added in datasheet95 V8.0 that weren't in datasheet95 V7.89 are highlighted in green.

Table 2: List of Publishable Projects in the Gulf Coast Dynamic Regions/Subsidence Areas

Project	Epoch
00000729/1	2009.55
00000729/2	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000731	2009.55
00000732	2009.55
00000772	2009.55
GPS2329	2006.81
GPS2100	2004.65
GPS2021/C	2004.65
GPS2212	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2262	2004.65
GPS2896/B	2009.55
GPS2896/C	2009.55

Table 3 consists of a list of publishable project/state combinations in the dynamic regions/subsidence areas that generate a publicly publishable datasheet. The project and states that have changed in datasheet95 V8.0 from datasheet95 V7.89 are highlighted in green.

Table 3: Valid Project/State Combinations in the Dynamic Regions/Subsidence Areas

Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000731	FL
00000732	TX
00000772	MS
GPS2896/B	LA
GPS2896/B	MS
GPS2896/B	AL
GPS2896/C	LA
GPS2896/C	MS
GPS2896/C	AL

*In the near future, control points in the state of LA and in project GPS2772 will be added to the list above.

Below is a list of control points (by their individual UID and PID) designated as publicly publishable regardless of the fact that they are in the dynamic regions/subsidence areas. These control points were constrained (held constant).

Table 4: Specific Control Points publishable in the Dynamic Regions/Subsidence Areas (unchanged from datasheet V7.89)

UID	PID
10478369	BH1210
10478372	BH1213
11634989	DL9666
11634990	DL9667
10478371	BH1212
10484553	BG1724

Control points not in a publishable project/state combination (Table 3) or not exceptions to the rule by UID (Table 4) formerly generated a datasheet with "NOT PUB" in the CURRENT SURVEY CONTROL section. This included control points in past project/state combinations that formerly generated a publishable datasheet if the control point was in one of them. A list of these formerly valid project/state combinations appears is Table 5 below. All control points that had one of these projects (a.k.a. ADJ_IDs) as their "best" NAVD88 elevation, have been superseded with projects in table 3 above.

Table 5: Past HT_MOD Projects in Louisiana that formerly generated a publishable datasheet if the control point was in one of them

Project	State
GPS2100	LA
GPS2021/C	LA
GPS2212	LA
GPS2307	LA
GPS2262	LA

There is a message (paragraph) that is new in datasheet95 V8.1. The message:

```
<PID> ** The orthometric height was determined with a Vertical Time-Dependent
<PID> ** Positioning (VTDP) model and has been validated through GNSS
<PID> ** observations for the NAVD 88 epoch indicated.  For additional
<PID> ** information on VTDP, please refer to the following web pages:
<PID> ** www.ngs.noaa.gov/heightmod/GulfCoastProject.shtml
<PID> ** www.ngs.noaa.gov/heightmod/NOAANOSNGSTR50.pdf
<PID>
```

Is displayed if:

(1) The control point is in a dynamic region/subsidence area (Table 1) and the control point is publishable in this area because it appears in either Table 3 or Table 4 *and*
(2) The control point was a HT_MOD (i.e. ELEVATION.ELEV_SOURCE="H" and ELEVATION.ELEV_TECH="G") or a Precise Leveled Bench Mark (ELEVATION.ELEV_SOURCE="H" and ELEVATION.ELEV_SOURCE="B") *and*
(3) The control point is VTDP constrained (i.e. UID appears in the LA_VTDP_CONSTRAINT table).

An example PID that produces this message on a datasheet is BH3030:

```
DATABASE = QCTESTNGSIDB., PROGRAM = datasheet95, VERSION = 8.1
1        National Geodetic Survey,   Retrieval Date = MARCH 15, 2013
 BJ1655 ***********************************************************************
 BJ1655  DESIGNATION -  E 191
 BJ1655  PID         -  BJ1655
 BJ1655  STATE/COUNTY-  LA/ST JAMES
 BJ1655  COUNTRY     -  US
 BJ1655  USGS QUAD   -  LUTCHER (1994)
 BJ1655
 BJ1655                        *CURRENT SURVEY CONTROL
 BJ1655  _______________________________________________________________________
```

```
BJ1655* NAD 83(2011) POSITION- 30 01 07.27893(N) 090 43 50.57444(W)   ADJUSTED
BJ1655* NAD 83(2011) ELLIP HT-   -21.910 (meters)        (06/27/12)   ADJUSTED
BJ1655* NAD 83(2011) EPOCH    -  2010.00
BJ1655* NAVD 88 ORTHO HEIGHT -     4.40   (meters)      14.4   (feet) LEVELING
BJ1655* NAVD 88 EPOCH        -  2009.55
BJ1655  **This station is located in a suspected subsidence area (see below).
BJ1655  **This station is included in the VTDP model (see below).
BJ1655
BJ1655  _____________________________________________________________________
BJ1655  GEOID HEIGHT    -        -26.31  (meters)                    GEOID12A
BJ1655  NAD 83(2011) X  -    -70,488.617 (meters)                    COMP
BJ1655  NAD 83(2011) Y  - -5,526,752.046 (meters)                    COMP
BJ1655  NAD 83(2011) Z  -  3,172,156.732 (meters)                    COMP
BJ1655  LAPLACE CORR    -          0.53  (seconds)                   DEFLEC12A
BJ1655  HORZ ORDER      -  B
BJ1655  VERT ORDER      -  THIRD
BJ1655
BJ1655  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
BJ1655  Type                                          Horiz  Ellip  Dist(km)
BJ1655  ----------------------------------------------------------------------
BJ1655  NETWORK                                        0.32   1.23
BJ1655  ----------------------------------------------------------------------
BJ1655  MEDIAN LOCAL ACCURACY AND DIST (140 points)   0.50   2.02     61.05
BJ1655  ----------------------------------------------------------------------
BJ1655  NOTE: Click here for information on individual local accuracy
BJ1655  values and other accuracy information.
BJ1655
BJ1655
BJ1655.The horizontal coordinates were established by GPS observations
BJ1655.and adjusted by the National Geodetic Survey in February 2013.
BJ1655
BJ1655.NAD 83(2011) refers to NAD 83 coordinates where the reference
BJ1655.frame has been affixed to the stable North American tectonic plate. See
BJ1655.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BJ1655
BJ1655.The horizontal coordinates are valid at the epoch date displayed above
BJ1655.which is a decimal equivalence of Year/Month/Day.
BJ1655
BJ1655 ** This station is in an area of known vertical motion.  Due to the
BJ1655 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BJ1655 ** determined the orthometric heights for marks in these suspect
BJ1655 ** subsidence areas should be considered valid only at the epoch date
BJ1655 ** associated with the orthometric height.  These heights must always
BJ1655 ** be validated when used as control.  All previously superseded
BJ1655 ** orthometric heights are now considered suspect and are available
BJ1655 ** in the superseded section.  NGS does not recommend using suspect
BJ1655 ** or superseded heights as control.
BJ1655
BJ1655 ** The orthometric height was determined with a Vertical Time-dependent
BJ1655 ** Positioning (VTDP) model and has been validated through GNSS
BJ1655 ** observations for the epoch indicated.  For additional
BJ1655 ** information on VTDP, please refer to the following web pages:
BJ1655 ** www.ngs.noaa.gov/heightmod/GulfCoastProject.shtml
BJ1655 ** www.ngs.noaa.gov/heightmod/NOAANOSNGSTR50.pdf
BJ1655

. . .

 *** retrieval complete.
 Elapsed Time = 00:00:06
```

Version 8.0 released at 10:21am on 03/04/2013

In prior releases of the datasheet95 program, only passive marks had network and local accuracies as shown below:

```
AC6803  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AC6803  Type                                          Horiz  Ellip  Dist(km)
AC6803  ----------------------------------------------------------------------
AC6803  NETWORK                                        0.56   1.10
AC6803  ----------------------------------------------------------------------
AC6803  MEDIAN LOCAL ACCURACY AND DIST (032 points)   0.81   1.74     58.94
AC6803  ----------------------------------------------------------------------
AC6803  NOTE: Click here for information on individual local accuracy
AC6803  values and other accuracy information.
```

In this version of datasheet95, computed CORS stations (i.e. those CORS sites in the CORS_POSITION table with non-NULL sigma field values) have network accuracies (but not local accuracies/median calculations) on datasheets similar to that shown below:

```
AF9562  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AF9562  Type                                          Horiz  Ellip  Dist(km)
AF9562  ----------------------------------------------------------------------
AF9562  NETWORK                                        0.35   1.07
AF9562  ----------------------------------------------------------------------
AF9562  NOTE: Click here for information on individual local accuracy
AF9562  values and other accuracy information.
```

In addition, datasheets will display the paragraph below for modeled CORS stations (i.e. those CORS stations in the CORS_POSITION table with NULL sigma field values) only:

```
DH7952.Formal positional accuracy estimates are not available for this CORS
DH7952.because its coordinates were determined in part using modeled
DH7952.velocities. Approximate one-sigma accuracies for latitude, longitude,
DH7952.and ellipsoid height can be obtained from the short-term time series.
DH7952.Additional information regarding modeled velocities is available on
DH7952.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
```

It is important to note that if the PID/mark selected is a
CORS L1 Phase Center (i.e. CORS_GROUP.CORS_TYPE="L") or a
CORS Monument (i.e. CORS_GROUP.CORS_TYPE="M") and not a
CORS ARP (i.e. CORS_GROUP.CORS_TYPE="A") that the calculations for Horiz, and Ellip are based on the CORS ARP position and network accuracy data. This can be seen in the datasheets for DN9092/DN9093/AI4469 which are the ARP/L1 Phase Center/Monument for the CORS site of AZU1 in the state of California.

Also important to note is that for a modeled CORS site, the link short-term time series in the paragraph:

```
DH7952.Formal positional accuracy estimates are not available for this CORS
DH7952.because its coordinates were determined in part using modeled
DH7952.velocities. Approximate one-sigma accuracies for latitude, longitude,
```

```
DH7952.and ellipsoid height can be obtained from the short-term time series.
DH7952.Additional information regarding modeled velocities is available on
DH7952.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
```

will give a blank short-term time series graph if the site was decommissioned (i.e. DH7952), and a non-blank short-term time series graph otherwise (i.e. DN7446) .

Test 1: Run the datasheet95.w via the web link http://dev.ngs.noaa.gov/cgi-bin/datasheet.prl on the following PIDs to see if the network accuracies come out properly for the computed CORS components (ARP, L1 Phase Centers, Reference Monument). Make sure that the Horz, and Ellip values (highlighted in purple below) are the same in the network accuracy section as the ARP position and sigma values are to be used in their calculations.

- DN9092(CORS ARP),
- DN9093 (L1 Phase Center),
- AI4469 (Reference Monument)

The 3 example datasheet AFTER this correction has been completed can be seen below.

```
1        National Geodetic Survey,   Retrieval Date = NOVEMBER 28, 2012
 DN9092 ***********************************************************************
 DN9092  CORS         -  This is a GPS Continuously Operating Reference Station.
 DN9092  DESIGNATION -  AZUSA CORS ARP
 DN9092  CORS_ID      -  AZU1
 DN9092  PID          -  DN9092
 DN9092  STATE/COUNTY-  CA/LOS ANGELES
 DN9092  COUNTRY      -  US
 DN9092  USGS QUAD    -  AZUSA (1972)
 DN9092
 DN9092                        *CURRENT SURVEY CONTROL
 DN9092  ______________________________________________________________________
 DN9092* NAD 83(2011) POSITION- 34 07 33.65475(N) 117 53 47.30636(W)   ADJUSTED
 DN9092* NAD 83(2011) ELLIP HT-   145.525 (meters)        (06/??/12)   ADJUSTED
 DN9092* NAD 83(2011) EPOCH    -  2010.00
 DN9092* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DN9092  ______________________________________________________________________
 DN9092  NAD 83(2011) X  - -2,472,978.788 (meters)                      COMP
 DN9092  NAD 83(2011) Y  - -4,671,339.303 (meters)                      COMP
 DN9092  NAD 83(2011) Z  -  3,558,107.930 (meters)                      COMP
 DN9092  GEOID HEIGHT    -        -33.63  (meters)                      GEOID12
 DN9092  HORZ ORDER      -  SPECIAL (CORS)
 DN9092  ELLP ORDER      -  SPECIAL (CORS)
 DN9092
 DN9092  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DN9092  Type                                           Horiz  Ellip  Dist(km)
 DN9092  ----------------------------------------------------------------------
 DN9092  NETWORK                                        1.45   5.18
 DN9092  ----------------------------------------------------------------------
 DN9092  NOTE: Click here for information on individual local accuracy
 DN9092  values and other accuracy information.
 DN9092
 DN9092
 DN9092.The coordinates were established by GPS observations
 DN9092.and adjusted by the National Geodetic Survey in June 2012.
 DN9092
 DN9092.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DN9092.frame has been affixed to the stable North American Tectonic Plate.
 DN9092
```

```
 DN9092.The coordinates are valid at the epoch date displayed above
 DN9092.which is a decimal equivalence of Year/Month/Day.
 DN9092
 DN9092.The PID for the CORS L1 Phase Center is DN9093.
 DN9092
 DN9092.The XYZ, and position/ellipsoidal ht. are equivalent.
 DN9092
 DN9092.The ellipsoidal height was determined by GPS observations
 DN9092.and is referenced to NAD 83.
 DN9092
 DN9092. The following values were computed from the NAD 83(2011) position.
 DN9092
 DN9092;                    North         East     Units Scale Factor Converg.
 DN9092;SPC CA 5     -   569,446.071 2,009,549.901   MT  0.99998121   +0 03 32.4
 DN9092;SPC CA 5     - 1,868,257.65  6,592,998.30   sFT  0.99998121   +0 03 32.4
 DN9092
 DN9092!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DN9092!SPC CA 5     -   0.99997716  x   0.99998121  =   0.99995837
 DN9092
 DN9092                          SUPERSEDED SURVEY CONTROL
 DN9092
 DN9092  NAD 83(CORS)-  34 07 33.64838(N)    117 53 47.29833(W) AD(2002.00) c
 DN9092  ELLIP H (06/??/12)  145.542  (m)                      GP(2002.00) c c
 DN9092
 DN9092.Superseded values are not recommended for survey control.
 DN9092
 DN9092.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DN9092.See file dsdata.txt to determine how the superseded data were derived.
 DN9092
 DN9092_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SMT1733376491(NAD 83)
 DN9092
 DN9092_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DN9092
 DN9092                          STATION DESCRIPTION
 DN9092
 DN9092'DESCRIBED BY NATIONAL GEODETIC SURVEY 2012
 DN9092'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DN9092'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DN9092'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DN9092'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DN9092'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DN9092'   ftp://cors.ngs.noaa.gov/cors/station_log
 DN9092'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = NOVEMBER 28, 2012
 DN9093 ***********************************************************************
 DN9093  CORS        -  This is a GPS Continuously Operating Reference Station.
 DN9093  DESIGNATION -  AZUSA CORS L1 PHASE CENTER
 DN9093  CORS_ID     -  AZU1
 DN9093  PID         -  DN9093
 DN9093  STATE/COUNTY-  CA/LOS ANGELES
 DN9093  COUNTRY     -  US
 DN9093  USGS QUAD   -  AZUSA (1972)
 DN9093
 DN9093                         *CURRENT SURVEY CONTROL
 DN9093  ______________________________________________________________________
 DN9093* NAD 83(2011) POSITION- 34 07 33.65477(N) 117 53 47.30636(W)   ADJUSTED
 DN9093* NAD 83(2011) ELLIP HT-   145.615 (meters)        (06/??/12)   ADJUSTED
 DN9093* NAD 83(2011) EPOCH   -  2010.00
 DN9093* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DN9093  ______________________________________________________________________
 DN9093  NAD 83(2011) X  - -2,472,978.823 (meters)                      COMP
 DN9093  NAD 83(2011) Y  - -4,671,339.368 (meters)                      COMP
 DN9093  NAD 83(2011) Z  -  3,558,107.981 (meters)                      COMP
```

```
DN9093  GEOID HEIGHT    -        -33.63  (meters)                    GEOID12
DN9093  HORZ ORDER      -  SPECIAL (CORS)
DN9093  ELLP ORDER      -  SPECIAL (CORS)
DN9093
DN9093  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
DN9093  Type                                          Horiz  Ellip  Dist(km)
DN9093  ----------------------------------------------------------------------
DN9093  NETWORK                                        1.45   5.18
DN9093  ----------------------------------------------------------------------
DN9093  NOTE: Click here for information on individual local accuracy
DN9093  values and other accuracy information.
DN9093
DN9093
DN9093.The coordinates were established by GPS observations
DN9093.and adjusted by the National Geodetic Survey in June 2012.
DN9093
DN9093.NAD 83(2011) refers to NAD 83 coordinates where the reference
DN9093.frame has been affixed to the stable North American Tectonic Plate.
DN9093
DN9093.The coordinates are valid at the epoch date displayed above
DN9093.which is a decimal equivalence of Year/Month/Day.
DN9093
DN9093.The PID for the CORS ARP is DN9092.
DN9093
DN9093.The XYZ, and position/ellipsoidal ht. are equivalent.
DN9093
DN9093.The ellipsoidal height was determined by GPS observations
DN9093.and is referenced to NAD 83.
DN9093
DN9093. The following values were computed from the NAD 83(2011) position.
DN9093
DN9093;                    North         East     Units Scale Factor Converg.
DN9093;SPC CA 5     -   569,446.072 2,009,549.901   MT  0.99998121   +0 03 32.4
DN9093;SPC CA 5     - 1,868,257.65  6,592,998.30   sFT  0.99998121   +0 03 32.4
DN9093
DN9093!             -  Elev Factor  x  Scale Factor =   Combined Factor
DN9093!SPC CA 5     -   0.99997714  x   0.99998121  =   0.99995835
DN9093
DN9093                          SUPERSEDED SURVEY CONTROL
DN9093
DN9093  NAD 83(CORS)-  34 07 33.64840(N)    117 53 47.29833(W) AD(2002.00) c
DN9093  ELLIP H (06/??/12)  145.631  (m)                      GP(2002.00) c c
DN9093
DN9093.Superseded values are not recommended for survey control.
DN9093
DN9093.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DN9093.See file dsdata.txt to determine how the superseded data were derived.
DN9093
DN9093_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SMT1733376491(NAD 83)
DN9093
DN9093_MARKER: STATION IS THE L1 PHASE CENTER OF THE GPS ANTENNA
DN9093
DN9093                          STATION DESCRIPTION
DN9093
DN9093'DESCRIBED BY NATIONAL GEODETIC SURVEY
DN9093'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DN9093'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DN9093'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DN9093'   ftp://cors.ngs.noaa.gov/cors/README.txt
DN9093'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DN9093'   ftp://cors.ngs.noaa.gov/cors/station_log
DN9093'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = NOVEMBER 28, 2012
```

```
AI4469 ***********************************************************************
AI4469  CORS         -  This is a GPS Continuously Operating Reference Station.
AI4469  DESIGNATION -  AZUSA 49911M001
AI4469  CORS_ID      -  AZU1
AI4469  PID          -  AI4469
AI4469  STATE/COUNTY-  CA/LOS ANGELES
AI4469  COUNTRY      -  US
AI4469  USGS QUAD    -  AZUSA (1972)
AI4469
AI4469                        *CURRENT SURVEY CONTROL
AI4469  ______________________________________________________________________
AI4469* NAD 83(2011) POSITION- 34 07 33.65475(N) 117 53 47.30636(W)   ADJUSTED
AI4469* NAD 83(2011) ELLIP HT-   145.444 (meters)        (06/??/12)   ADJUSTED
AI4469* NAD 83(2011) EPOCH   -  2010.00
AI4469* NAVD 88 ORTHO HEIGHT -   179.1    (meters)     588.    (feet) GPS OBS
AI4469  ______________________________________________________________________
AI4469  NAD 83(2011) X  - -2,472,978.757 (meters)                     COMP
AI4469  NAD 83(2011) Y  - -4,671,339.243 (meters)                     COMP
AI4469  NAD 83(2011) Z  -  3,558,107.884 (meters)                     COMP
AI4469  LAPLACE CORR    -          4.77  (seconds)                    DEFLEC12A
AI4469  GEOID HEIGHT    -        -33.63  (meters)                     GEOID12
AI4469  HORZ ORDER      -  SPECIAL (CORS)
AI4469  ELLP ORDER      -  SPECIAL (CORS)
AI4469
AI4469  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
AI4469  Type                                          Horiz  Ellip  Dist(km)
AI4469  ----------------------------------------------------------------------
AI4469  NETWORK                                       1.45   5.18
AI4469  ----------------------------------------------------------------------
AI4469  NOTE: Click here for information on individual local accuracy
AI4469  values and other accuracy information.
AI4469
AI4469
AI4469.The horizontal coordinates were established by GPS observations
AI4469.and adjusted by the National Geodetic Survey in June 2012.
AI4469
AI4469.NAD 83(2011) refers to NAD 83 coordinates where the reference
AI4469.frame has been affixed to the stable North American Tectonic Plate.
AI4469
AI4469.The horizontal coordinates are valid at the epoch date displayed above
AI4469.which is a decimal equivalence of Year/Month/Day.
AI4469
AI4469.The orthometric height was determined by GPS observations and a
AI4469.high-resolution geoid model.
AI4469
AI4469.The XYZ, and position/ellipsoidal ht. are equivalent.
AI4469
AI4469.The Laplace correction was computed from DEFLEC12A derived deflections.
AI4469
AI4469.The ellipsoidal height was determined by GPS observations
AI4469.and is referenced to NAD 83.
AI4469
AI4469. The following values were computed from the NAD 83(2011) position.
AI4469
AI4469;                   North         East     Units Scale Factor Converg.
AI4469;SPC CA 6     -   718,506.638 1,848,114.621   MT  1.00004955   -0 54 17.2
AI4469;SPC CA 6     - 2,357,300.53  6,063,356.05   sFT  1.00004955   -0 54 17.2
AI4469;UTM  11      - 3,776,491.272   417,333.760   MT  0.99968424   -0 30 10.7
AI4469
AI4469!             -  Elev Factor  x  Scale Factor =   Combined Factor
AI4469!SPC CA 6     -   0.99997717  x   1.00004955  =   1.00002672
AI4469!UTM  11      -   0.99997717  x   0.99968424  =   0.99966142
AI4469
```

```
AI4469                          SUPERSEDED SURVEY CONTROL
AI4469
AI4469  NAD 83(CORS)-  34 07 33.64838(N)    117 53 47.29833(W) AD(2002.00) A
AI4469  ELLIP H (06/??/12)  145.460  (m)                       GP(2002.00) 4 1
AI4469  NAVD 88 (04/06/00)  179.2    (m)  GEOID99 model used   GPS OBS
AI4469
AI4469.Superseded values are not recommended for survey control.
AI4469
AI4469.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AI4469.See file dsdata.txt to determine how the superseded data were derived.
AI4469
AI4469_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SMT1733376491(NAD 83)
AI4469
AI4469_MARKER: Z = SEE DESCRIPTION
AI4469_SETTING: 0 = UNSPECIFIED SETTING
AI4469_STAMPING: NONE
AI4469_MARK LOGO: NONE
AI4469_MAGNETIC: N = NO MAGNETIC MATERIAL
AI4469_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
AI4469+STABILITY: POSITION/ELEVATION WELL
AI4469_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AI4469+SATELLITE: SATELLITE OBSERVATIONS - 1998
AI4469
AI4469  HISTORY     - Date     Condition        Report By
AI4469  HISTORY     - 1998     MONUMENTED       NGS
AI4469
AI4469                          STATION DESCRIPTION
AI4469
AI4469'DESCRIBED BY NATIONAL GEODETIC SURVEY 1998
AI4469'THIS MONUMENT IS ASSOCIATED WITH CORS SITE 'AZU1'
AI4469'LATEST INFORMATION INCLUDING POSITIONS AND VELOCITIES
AI4469'ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
AI4469'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
AI4469'   ftp://cors.ngs.noaa.gov/cors/README.txt
AI4469'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
AI4469'   ftp://cors.ngs.noaa.gov/cors/station_log
AI4469'   http://geodesy.noaa.gov/CORS

*** retrieval complete.
Elapsed Time = 00:00:02
```

Test 2: Run the datasheet95.w via the web link http://dev.ngs.noaa.gov/cgi-bin/datasheet.prl on two modeled CORS sites DN7446 and DNH7952. Note: DN7446 is an active modeled CORS site while DH7952 is not. The special modeled CORS paragraph should display on the datasheets.

```
1        National Geodetic Survey,   Retrieval Date = NOVEMBER 28, 2012
 DN7446 ***********************************************************************
 DN7446  CORS         -  This is a GPS Continuously Operating Reference Station.
 DN7446  DESIGNATION -  ESSEX_CTY_CS2007 CORS ARP
 DN7446  CORS_ID      -  P614
 DN7446  PID          -  DN7446
 DN7446  STATE/COUNTY-  CA/SAN BERNARDINO
 DN7446  COUNTRY      -  US
 DN7446  USGS QUAD    -  ESSEX (1985)
 DN7446
 DN7446                         *CURRENT SURVEY CONTROL
 DN7446 ______________________________________________________________________
 DN7446* NAD 83(2011) POSITION- 34 43 54.44390(N) 115 15 00.89684(W)   ADJUSTED
 DN7446* NAD 83(2011) ELLIP HT-   491.766 (meters)        (04/??/12)   ADJUSTED
 DN7446* NAD 83(2011) EPOCH    -  2010.00
```

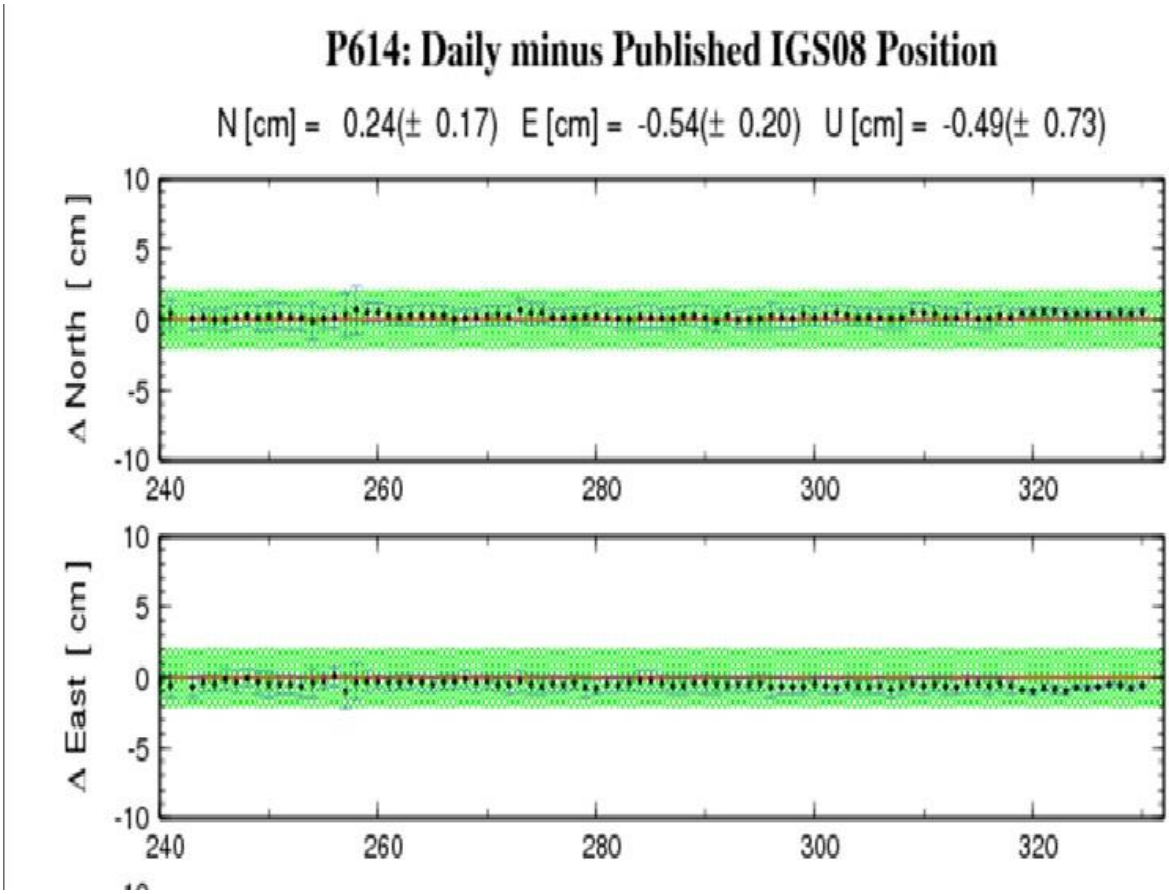
```
DN7446* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
DN7446  ____________________________________________________________________
DN7446  NAD 83(2011) X  - -2,238,585.339 (meters)                    COMP
DN7446  NAD 83(2011) Y  - -4,746,426.592 (meters)                    COMP
DN7446  NAD 83(2011) Z  -  3,613,733.592 (meters)                    COMP
DN7446  GEOID HEIGHT    -        -30.89  (meters)                    GEOID12
DN7446  HORZ ORDER      -  SPECIAL (CORS)
DN7446  ELLP ORDER      -  SPECIAL (CORS)
DN7446
DN7446.Formal positional accuracy estimates are not available for this CORS
DN7446.because its coordinates were determined in part using modeled
DN7446.velocities. Approximate one-sigma accuracies for latitude, longitude,
DN7446.and ellipsoid height can be obtained from the short-term time series.
DN7446.Additional information regarding modeled velocities is available on
DN7446.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DN7446
DN7446.The coordinates were established by GPS observations
DN7446.and adjusted by the National Geodetic Survey in April 2012.
DN7446
DN7446.NAD 83(2011) refers to NAD 83 coordinates where the reference
DN7446.frame has been affixed to the stable North American Tectonic Plate.
DN7446
DN7446.The coordinates are valid at the epoch date displayed above
DN7446.which is a decimal equivalence of Year/Month/Day.
DN7446
DN7446.The PID for the CORS L1 Phase Center is DN7447.
DN7446
DN7446.The XYZ, and position/ellipsoidal ht. are equivalent.
DN7446
DN7446.The ellipsoidal height was determined by GPS observations
DN7446.and is referenced to NAD 83.
DN7446
DN7446. The following values were computed from the NAD 83(2011) position.
DN7446
DN7446;                    North         East     Units Scale Factor Converg.
DN7446;SPC CA 5     -   640,080.125 2,251,785.044   MT  0.99992218   +1 34 02.6
DN7446;SPC CA 5     - 2,099,996.21  7,387,731.43   sFT  0.99992218   +1 34 02.6
DN7446
DN7446!             -  Elev Factor  x  Scale Factor =   Combined Factor
DN7446!SPC CA 5     -   0.99992281  x   0.99992218  =   0.99984500
DN7446
DN7446                          SUPERSEDED SURVEY CONTROL
DN7446
DN7446  NAD 83(CORS)-  34 43 54.44333(N)    115 15 00.89709(W) AD(2002.00) c
DN7446  ELLIP H (04/??/12)  491.761  (m)                       GP(2002.00) c c
DN7446
DN7446.Superseded values are not recommended for survey control.
DN7446
DN7446.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DN7446.See file dsdata.txt to determine how the superseded data were derived.
DN7446
DN7446_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SPU6019544694(NAD 83)
DN7446
DN7446_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DN7446
DN7446                          STATION DESCRIPTION
DN7446
DN7446'DESCRIBED BY NATIONAL GEODETIC SURVEY 2012
DN7446'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DN7446'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DN7446'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DN7446'   ftp://cors.ngs.noaa.gov/cors/README.txt
DN7446'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
```

```
 DN7446'   ftp://cors.ngs.noaa.gov/cors/station_log
 DN7446'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = NOVEMBER 28, 2012
 DH7952 ***********************************************************************
 DH7952  CORS         -  This is a GPS Continuously Operating Reference Station.
 DH7952  DESIGNATION -  LOYOLA 7 COOP CORS ARP
 DH7952  CORS_ID      -  LOY7
 DH7952  PID          -  DH7952
 DH7952  STATE/COUNTY-  VA/C OF ROANOKE
 DH7952  COUNTRY      -  US
 DH7952  USGS QUAD    -  ROANOKE (1984)
 DH7952
 DH7952                        *CURRENT SURVEY CONTROL
 DH7952  ______________________________________________________________________
 DH7952* NAD 83(CORS) POSITION- 37 19 56.61446(N) 079 58 39.26472(W)   ADJUSTED
 DH7952* NAD 83(CORS) ELLIP HT-   319.329 (meters)        (02/??/06)   ADJUSTED
 DH7952* NAD 83(CORS) EPOCH   -  2002.00
 DH7952* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DH7952  ______________________________________________________________________
 DH7952  NAD 83(CORS) X  -    883,736.040 (meters)                       COMP
 DH7952  NAD 83(CORS) Y  - -5,000,470.041 (meters)                       COMP
 DH7952  NAD 83(CORS) Z  -  3,846,983.290 (meters)                       COMP
 DH7952  GEOID HEIGHT    -        -32.42  (meters)                       GEOID12
 DH7952  HORZ ORDER      -  SPECIAL (CORS)
 DH7952  ELLP ORDER      -  SPECIAL (CORS)
 DH7952
 DH7952.Formal positional accuracy estimates are not available for this CORS
 DH7952.because its coordinates were determined in part using modeled
 DH7952.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DH7952.and ellipsoid height can be obtained from the short-term time series.
 DH7952.Additional information regarding modeled velocities is available on
 DH7952.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DH7952
 DH7952.The coordinates were established by GPS observations
 DH7952.and adjusted by the National Geodetic Survey in February 2006.
 DH7952
 DH7952.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
 DH7952
 DH7952.The coordinates are valid at the epoch date displayed above
 DH7952.which is a decimal equivalence of Year/Month/Day.
 DH7952
 DH7952.The PID for the CORS L1 Phase Center is DH7953.
 DH7952
 DH7952.The XYZ, and position/ellipsoidal ht. are equivalent.
 DH7952
 DH7952.The ellipsoidal height was determined by GPS observations
 DH7952.and is referenced to NAD 83.
 DH7952
 DH7952. The following values were computed from the NAD 83(CORS) position.
 DH7952
 DH7952;                    North         East     Units Scale Factor Converg.
 DH7952;SPC VA S     - 1,111,894.978 3,369,065.899   MT  0.99994559   -0 53 48.4
 DH7952;SPC VA S     - 3,647,942.11 11,053,343.70   sFT  0.99994559   -0 53 48.4
 DH7952
 DH7952!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DH7952!SPC VA S     -   0.99994989  x   0.99994559  =   0.99989548
 DH7952
 DH7952                          SUPERSEDED SURVEY CONTROL
 DH7952
 DH7952.No superseded survey control is available for this station.
 DH7952
 DH7952_U.S. NATIONAL GRID SPATIAL ADDRESS: 17SNB9057532236(NAD 83)
 DH7952
```

```
DH7952_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DH7952
DH7952                          STATION DESCRIPTION
DH7952
DH7952'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DH7952'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DH7952'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DH7952'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DH7952'   ftp://cors.ngs.noaa.gov/cors/README.txt
DH7952'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DH7952'   ftp://cors.ngs.noaa.gov/cors/station_log
DH7952'   http://geodesy.noaa.gov/CORS

*** retrieval complete.
Elapsed Time = 00:00:01
```

Now when you test the link short-term time series in the green highlighted paragraph for DN7446 you will not see a short-term time series graph but when you click the link short-term time series for DH7952 you will see a short-term time series graph like below:



This is because DN7446 is an active modeled CORS site whereas DH7952 is for a decommissioned CORS site.

Version 7.89.7 released at 4:34pm on 11/27/2012

This release incorporates 2 updates:

(1) The number format on the network accuracy lines on datasheets. The previous number format was:

```
 AW5439  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AW5439  Type                                          Horiz  Ellip  Dist(km)
 AW5439  ----------------------------------------------------------------------
 AW5439  NETWORK                                       99.99  99.99
 AW5439  ----------------------------------------------------------------------
 AW5439  MEDIAN LOCAL ACCURACY AND DIST (010 points)  99.99  99.99   9999.19
 AW5439  ----------------------------------------------------------------------
 AW5439  NOTE: Click here for information on individual local accuracy
 AW5439  values and other accuracy information.
```

The new number format is:

```
 AW5439  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AW5439  Type                                          Horiz  Ellip  Dist(km)
 AW5439  ----------------------------------------------------------------------
 AW5439  NETWORK                                    9999.99 999.99
 AW5439  ----------------------------------------------------------------------
 AW5439  MEDIAN LOCAL ACCURACY AND DIST (010 points)9999.99 999.99   9999.19
 AW5439  ----------------------------------------------------------------------
 AW5439  NOTE: Click here for information on individual local accuracy
 AW5439  values and other accuracy information.
```

An example datasheet BEFORE the number format was corrected can be seen below.

```
PROGRAM = datasheet95, VERSION = 7.89.6
1        National Geodetic Survey,   Retrieval Date = NOVEMBER  5, 2012
 AW5439 ***********************************************************************
 AW5439  HT_MOD      -  This is a Height Modernization Survey Station.
 AW5439  DESIGNATION -  HGCSD 18
 AW5439  PID         -  AW5439
 AW5439  STATE/COUNTY-  TX/HARRIS
 AW5439  COUNTRY     -  US
 AW5439  USGS QUAD   -  SATSUMA (1982)
 AW5439
 AW5439                        *CURRENT SURVEY CONTROL
 AW5439  ______________________________________________________________________
 AW5439* NAD 83(2011) POSITION- 29 52 45.31333(N) 095 36 41.68693(W)   ADJUSTED
 AW5439* NAD 83(2011) ELLIP HT-     8.461 (meters)        (06/27/12)   ADJUSTED
 AW5439* NAD 83(2011) EPOCH   -  2010.00
 AW5439* NAVD 88 ORTHO HEIGHT -    35.99   (meters)     118.1   (feet) GPS OBS
 AW5439  ______________________________________________________________________
 AW5439  NAVD 88 orthometric height was determined with geoid model    GEOID99
 AW5439  GEOID HEIGHT    -        -27.36  (meters)                     GEOID99
 AW5439  GEOID HEIGHT    -        -27.48  (meters)                     GEOID12A
 AW5439  NAD 83(2011) X  -   -541,229.190 (meters)                     COMP
 AW5439  NAD 83(2011) Y  - -5,508,418.859 (meters)                     COMP
 AW5439  NAD 83(2011) Z  -  3,158,779.244 (meters)                     COMP
 AW5439  LAPLACE CORR    -          0.43  (seconds)                    DEFLEC12A
 AW5439
 AW5439  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AW5439  Type                                          Horiz  Ellip  Dist(km)
 AW5439  ----------------------------------------------------------------------
```

```
AW5439  NETWORK                                          22.91  28.03
AW5439  ---------------------------------------------------------------------
AW5439  MEDIAN LOCAL ACCURACY AND DIST (010 points)  22.91  28.05      8.19
AW5439  ---------------------------------------------------------------------
AW5439  NOTE: Click here for information on individual local accuracy
AW5439  values and other accuracy information.
AW5439
AW5439
AW5439.The horizontal coordinates were established by GPS observations
AW5439.and adjusted by the National Geodetic Survey in June 2012.
AW5439
AW5439.NAD 83(2011) refers to NAD 83 coordinates where the reference
AW5439.frame has been affixed to the stable North American tectonic plate. See
AW5439.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AW5439
AW5439.The horizontal coordinates are valid at the epoch date displayed above
AW5439.which is a decimal equivalence of Year/Month/Day.
AW5439
AW5439.The orthometric height was determined by GPS observations and a
AW5439.high-resolution geoid model using precise GPS observation and
AW5439.processing techniques.
AW5439
AW5439.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AW5439
AW5439.The Laplace correction was computed from DEFLEC12A derived deflections.
AW5439
AW5439.The ellipsoidal height was determined by GPS observations
AW5439.and is referenced to NAD 83.
AW5439
AW5439. The following values were computed from the NAD 83(2011) position.
AW5439
AW5439;                    North         East     Units Scale Factor Converg.
AW5439;SPC TXSC     - 4,231,486.323   927,255.306   MT  0.99990823   +1 39 36.1
AW5439;SPC TXSC     -13,882,801.38  3,042,170.12   sFT  0.99990823   +1 39 36.1
AW5439;UTM  15      - 3,308,270.762   247,770.506   MT  1.00038501   -1 18 06.2
AW5439
AW5439!             -  Elev Factor  x  Scale Factor =   Combined Factor
AW5439!SPC TXSC     -   0.99999867  x   0.99990823  =   0.99990690
AW5439!UTM  15      -   0.99999867  x   1.00038501  =   1.00038368
AW5439
AW5439                          SUPERSEDED SURVEY CONTROL
AW5439
AW5439  NAD 83(2007)-  29 52 45.31261(N)    095 36 41.68785(W) AD(       ) 0
AW5439  ELLIP H (02/10/07)    8.547  (m)                       GP(       )
AW5439  NAD 83(1993)-  29 52 45.31234(N)    095 36 41.68786(W) AD(       ) 1
AW5439  ELLIP H (12/03/01)    8.553  (m)                       GP(       ) 4 2
AW5439  ELLIP H (10/25/00)    8.840  (m)                       GP(       ) 4 1
AW5439  NAD 83(1993)-  29 52 45.31262(N)    095 36 41.68709(W) AD(       ) 1
AW5439  ELLIP H (10/17/96)    8.957  (m)                       GP(       ) 3 1
AW5439  NAD 83(1993)-  29 52 45.31197(N)    095 36 41.68755(W) AD(       ) 1
AW5439  ELLIP H (02/16/96)    9.333  (m)                       GP(       ) 5 1
AW5439  NAD 83(1986)-  29 52 45.32657(N)    095 36 41.66906(W) AD(       ) 1
AW5439  NAVD 88 (10/17/96)   36.28   (m)  UNKNOWN model used   GPS OBS
AW5439  NAVD 88 (06/15/91)   36.872  (m)          120.97   (f) ADJUSTED    1 2
AW5439  NGVD 29 (12/23/87)   36.865  (m)          120.95   (f) ADJUSTED    1 2
AW5439
AW5439.Superseded values are not recommended for survey control.
AW5439
AW5439.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AW5439.See file dsdata.txt to determine how the superseded data were derived.
AW5439
AW5439_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RTP4777008270(NAD 83)
AW5439
```

```
AW5439_MARKER: I = METAL ROD
AW5439_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
AW5439_SP_SET: STAINLESS STEEL ROD IN SLEEVE
AW5439_STAMPING: HGCSD 18 1986
AW5439_MARK LOGO: NGS
AW5439_PROJECTION: FLUSH
AW5439_MAGNETIC: I = MARKER IS A STEEL ROD
AW5439_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
AW5439+STABILITY: POSITION/ELEVATION WELL
AW5439_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AW5439+SATELLITE: SATELLITE OBSERVATIONS - March 28, 2011
AW5439_ROD/PIPE-DEPTH: 16.8 meters
AW5439_SLEEVE-DEPTH  : 6.1 meters
AW5439
AW5439  HISTORY     - Date     Condition        Report By
AW5439  HISTORY     - 1986     MONUMENTED       NGS
AW5439  HISTORY     - 1987     GOOD             NGS
AW5439  HISTORY     - 19940326 GOOD             USPSQD
AW5439  HISTORY     - 19941117 GOOD             HGCSD
AW5439  HISTORY     - 20041011 GOOD             USPSQD
AW5439  HISTORY     - 20110328 GOOD             SAM1
AW5439
AW5439                          STATION DESCRIPTION
AW5439
AW5439'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986
AW5439'8.1 KM (5.05 MI) NW FROM FAIRBANKS.
AW5439'3.9 KM (2.4 MI) NORTHWESTERLY ALONG U.S. HIGHWAY 290 FROM THE POST
AW5439'OFFICE IN FAIRBANKS, THENCE 4.2 KM (2.6 MI) WESTERLY ALONG FARM ROAD
AW5439'529, 29.9 M (98.1 FT) SOUTH OF THE CENTERLINE OF THE ROAD, 22.7 M
AW5439'(74.5 FT) NORTH OF THE NORTHEAST CORNER OF THE SYSTEMS OFFICE
AW5439'BUILDING, AND 1.5 M (4.9 FT) WEST OF THE WEST EDGE OF A SIDEWALK.
AW5439'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
AW5439'THE MARK IS ABOVE LEVEL WITH THE ROAD.
AW5439
AW5439                          STATION RECOVERY (1987)
AW5439
AW5439'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1987 (REP)
AW5439'THE STATION IS LOCATED ABOUT 28.2 KM (17.5 MI)
AW5439'NORTHWEST OF HOUSTON, 23.3 KM (14.5 MI) NORTHEAST OF KATY AND
AW5439'12.9 KM (8.0 MI) SOUTHEAST OF CYPRESS.
AW5439'OWNERSHIP--JOHN B GOSS SR, 13223 SPENCER ROAD, HOUSTON TX 77041,
AW5439'PHONE 713-466-3441.
AW5439'
AW5439'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 290 AND
AW5439'FARM ROAD 529, WHICH IS ABOUT 24.1 KM (15.0 MI) NORTHWEST OF
AW5439'HOUSTON, GO WEST ON FARM ROAD 529 FOR 4.0 KM (2.5 MI) TO THE
AW5439'STATION ON THE LEFT.
AW5439'
AW5439'THE STATION IS A PUNCH MARK IN THE TOP OF A STAINLESS STEEL ROD
AW5439'DRIVEN INTO THE GROUND AND INSIDE A 1-INCH PVC PIPE THAT IS 20 FEET
AW5439'LONG FILLED WITH GREASE THAT IS ENCASED IN A 5-INCH PVC PIPE WITH A
AW5439'LOGO CAP STAMPED---HGCSD 18 1986---, THE ROD IS RECESSED 10 CM
AW5439'BELOW THE GROUND.  LOCATED
AW5439'29.9 METERS (98.0 FT) SOUTH FROM THE CENTERLINE OF FARM ROAD 529,
AW5439'22.5 METERS (73.7 FT) NORTH FROM THE NORTHEAST CORNER OF THE
AW5439'MECHANICAL SYSTEMS BUILDING AND
AW5439'1.5 METERS (4.8 FT) WEST FROM THE WEST EDGE OF A NORTH-SOUTH
AW5439'SIDEWALK.
AW5439'
AW5439'HARRIS-GALVESTON, TEXAS, SUBSIDENCE NETWORK, JAN 1987.
AW5439'
AW5439'THIS STATION IS SUITABLE FOR GPS SURVEYS.
AW5439'
```

```
 AW5439'DESCRIBED BY P.C. OSLEY.
 AW5439
 AW5439                          STATION RECOVERY (1994)
 AW5439
 AW5439'RECOVERY NOTE BY US POWER SQUADRON 1994
 AW5439'RECOVERED IN GOOD CONDITION.
 AW5439
 AW5439                          STATION RECOVERY (1994)
 AW5439
 AW5439'RECOVERY NOTE BY HARRIS-GALV CO DIST 1994 (JCH)
 AW5439'RECOVERED AS DESCRIBED.
 AW5439
 AW5439                          STATION RECOVERY (2004)
 AW5439
 AW5439'RECOVERY NOTE BY US POWER SQUADRON 2004 (GWS)
 AW5439'THE NAME OF THE OFFICE BUILDING IS SEATRAZ SYSTEMS.
 AW5439
 AW5439                          STATION RECOVERY (2011)
 AW5439
 AW5439'RECOVERY NOTE BY SURVEYING AND MAPPING, INC 2011 (TAT)
 AW5439'RECOVERED IN GOOD CONDITION.
```

An example datasheet AFTER the number format was corrected can be seen below.

```
1        National Geodetic Survey,   Retrieval Date = NOVEMBER  5, 2012
 AW5439 ***********************************************************************
 AW5439  HT_MOD      -  This is a Height Modernization Survey Station.
 AW5439  DESIGNATION -  HGCSD 18
 AW5439  PID         -  AW5439
 AW5439  STATE/COUNTY-  TX/HARRIS
 AW5439  COUNTRY     -  US
 AW5439  USGS QUAD   -  SATSUMA (1982)
 AW5439
 AW5439                        *CURRENT SURVEY CONTROL
 AW5439  ______________________________________________________________________
 AW5439* NAD 83(2011) POSITION- 29 52 45.31333(N) 095 36 41.68693(W)   ADJUSTED
 AW5439* NAD 83(2011) ELLIP HT-     8.461 (meters)        (06/27/12)   ADJUSTED
 AW5439* NAD 83(2011) EPOCH   -  2010.00
 AW5439* NAVD 88 ORTHO HEIGHT -    35.99   (meters)     118.1   (feet) GPS OBS
 AW5439  ______________________________________________________________________
 AW5439  NAVD 88 orthometric height was determined with geoid model    GEOID99
 AW5439  GEOID HEIGHT    -        -27.36  (meters)                     GEOID99
 AW5439  GEOID HEIGHT    -        -27.48  (meters)                     GEOID12A
 AW5439  NAD 83(2011) X  -   -541,229.190 (meters)                     COMP
 AW5439  NAD 83(2011) Y  - -5,508,418.859 (meters)                     COMP
 AW5439  NAD 83(2011) Z  -  3,158,779.244 (meters)                     COMP
 AW5439  LAPLACE CORR    -          0.43  (seconds)                    DEFLEC12A
 AW5439
 AW5439  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AW5439  Type                                          Horiz  Ellip  Dist(km)
 AW5439  ----------------------------------------------------------------------
 AW5439  NETWORK                                       22.91  28.03
 AW5439  ----------------------------------------------------------------------
 AW5439  MEDIAN LOCAL ACCURACY AND DIST (010 points)  22.91  28.05      8.19
 AW5439  ----------------------------------------------------------------------
 AW5439  NOTE: Click here for information on individual local accuracy
 AW5439  values and other accuracy information.
 AW5439
 AW5439
 AW5439.The horizontal coordinates were established by GPS observations
 AW5439.and adjusted by the National Geodetic Survey in June 2012.
 AW5439
 AW5439.NAD 83(2011) refers to NAD 83 coordinates where the reference
```

```
AW5439.frame has been affixed to the stable North American tectonic plate. See
AW5439.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
AW5439
AW5439.The horizontal coordinates are valid at the epoch date displayed above
AW5439.which is a decimal equivalence of Year/Month/Day.
AW5439
AW5439.The orthometric height was determined by GPS observations and a
AW5439.high-resolution geoid model using precise GPS observation and
AW5439.processing techniques.
AW5439
AW5439.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AW5439
AW5439.The Laplace correction was computed from DEFLEC12A derived deflections.
AW5439
AW5439.The ellipsoidal height was determined by GPS observations
AW5439.and is referenced to NAD 83.
AW5439
AW5439. The following values were computed from the NAD 83(2011) position.
AW5439
AW5439;                    North         East     Units Scale Factor Converg.
AW5439;SPC TXSC     - 4,231,486.323   927,255.306   MT  0.99990823   +1 39 36.1
AW5439;SPC TXSC     -13,882,801.38  3,042,170.12   sFT  0.99990823   +1 39 36.1
AW5439;UTM  15      - 3,308,270.762   247,770.506   MT  1.00038501   -1 18 06.2
AW5439
AW5439!             -  Elev Factor  x  Scale Factor =   Combined Factor
AW5439!SPC TXSC     -   0.99999867  x   0.99990823  =   0.99990690
AW5439!UTM  15      -   0.99999867  x   1.00038501  =   1.00038368
AW5439
AW5439                          SUPERSEDED SURVEY CONTROL
AW5439
AW5439  NAD 83(2007)-  29 52 45.31261(N)    095 36 41.68785(W) AD(       ) 0
AW5439  ELLIP H (02/10/07)    8.547  (m)                        GP(       )
AW5439  NAD 83(1993)-  29 52 45.31234(N)    095 36 41.68786(W) AD(       ) 1
AW5439  ELLIP H (12/03/01)    8.553  (m)                        GP(       ) 4 2
AW5439  ELLIP H (10/25/00)    8.840  (m)                        GP(       ) 4 1
AW5439  NAD 83(1993)-  29 52 45.31262(N)    095 36 41.68709(W) AD(       ) 1
AW5439  ELLIP H (10/17/96)    8.957  (m)                        GP(       ) 3 1
AW5439  NAD 83(1993)-  29 52 45.31197(N)    095 36 41.68755(W) AD(       ) 1
AW5439  ELLIP H (02/16/96)    9.333  (m)                        GP(       ) 5 1
AW5439  NAD 83(1986)-  29 52 45.32657(N)    095 36 41.66906(W) AD(       ) 1
AW5439  NAVD 88 (10/17/96)   36.28   (m)  UNKNOWN model used   GPS OBS
AW5439  NAVD 88 (06/15/91)   36.872  (m)          120.97   (f) ADJUSTED    1 2
AW5439  NGVD 29 (12/23/87)   36.865  (m)          120.95   (f) ADJUSTED    1 2
AW5439
AW5439.Superseded values are not recommended for survey control.
AW5439
AW5439.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AW5439.See file dsdata.txt to determine how the superseded data were derived.
AW5439
AW5439_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RTP4777008270(NAD 83)
AW5439
AW5439_MARKER: I = METAL ROD
AW5439_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
AW5439_SP_SET: STAINLESS STEEL ROD IN SLEEVE
AW5439_STAMPING: HGCSD 18 1986
AW5439_MARK LOGO: NGS
AW5439_PROJECTION: FLUSH
AW5439_MAGNETIC: I = MARKER IS A STEEL ROD
AW5439_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
AW5439+STABILITY: POSITION/ELEVATION WELL
AW5439_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AW5439+SATELLITE: SATELLITE OBSERVATIONS - March 28, 2011
AW5439_ROD/PIPE-DEPTH: 16.8 meters
```

```
AW5439_SLEEVE-DEPTH  : 6.1 meters
AW5439
AW5439  HISTORY     - Date     Condition        Report By
AW5439  HISTORY     - 1986     MONUMENTED       NGS
AW5439  HISTORY     - 1987     GOOD             NGS
AW5439  HISTORY     - 19940326 GOOD             USPSQD
AW5439  HISTORY     - 19941117 GOOD             HGCSD
AW5439  HISTORY     - 20041011 GOOD             USPSQD
AW5439  HISTORY     - 20110328 GOOD             SAM1
AW5439
AW5439                          STATION DESCRIPTION
AW5439
AW5439'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986
AW5439'8.1 KM (5.05 MI) NW FROM FAIRBANKS.
AW5439'3.9 KM (2.4 MI) NORTHWESTERLY ALONG U.S. HIGHWAY 290 FROM THE POST
AW5439'OFFICE IN FAIRBANKS, THENCE 4.2 KM (2.6 MI) WESTERLY ALONG FARM ROAD
AW5439'529, 29.9 M (98.1 FT) SOUTH OF THE CENTERLINE OF THE ROAD, 22.7 M
AW5439'(74.5 FT) NORTH OF THE NORTHEAST CORNER OF THE SYSTEMS OFFICE
AW5439'BUILDING, AND 1.5 M (4.9 FT) WEST OF THE WEST EDGE OF A SIDEWALK.
AW5439'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
AW5439'THE MARK IS ABOVE LEVEL WITH THE ROAD.
AW5439
AW5439                          STATION RECOVERY (1987)
AW5439
AW5439'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1987 (REP)
AW5439'THE STATION IS LOCATED ABOUT 28.2 KM (17.5 MI)
AW5439'NORTHWEST OF HOUSTON, 23.3 KM (14.5 MI) NORTHEAST OF KATY AND
AW5439'12.9 KM (8.0 MI) SOUTHEAST OF CYPRESS.
AW5439'OWNERSHIP--JOHN B GOSS SR, 13223 SPENCER ROAD, HOUSTON TX 77041,
AW5439'PHONE 713-466-3441.
AW5439'
AW5439'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 290 AND
AW5439'FARM ROAD 529, WHICH IS ABOUT 24.1 KM (15.0 MI) NORTHWEST OF
AW5439'HOUSTON, GO WEST ON FARM ROAD 529 FOR 4.0 KM (2.5 MI) TO THE
AW5439'STATION ON THE LEFT.
AW5439'
AW5439'THE STATION IS A PUNCH MARK IN THE TOP OF A STAINLESS STEEL ROD
AW5439'DRIVEN INTO THE GROUND AND INSIDE A 1-INCH PVC PIPE THAT IS 20 FEET
AW5439'LONG FILLED WITH GREASE THAT IS ENCASED IN A 5-INCH PVC PIPE WITH A
AW5439'LOGO CAP STAMPED---HGCSD 18 1986---, THE ROD IS RECESSED 10 CM
AW5439'BELOW THE GROUND.  LOCATED
AW5439'29.9 METERS (98.0 FT) SOUTH FROM THE CENTERLINE OF FARM ROAD 529,
AW5439'22.5 METERS (73.7 FT) NORTH FROM THE NORTHEAST CORNER OF THE
AW5439'MECHANICAL SYSTEMS BUILDING AND
AW5439'1.5 METERS (4.8 FT) WEST FROM THE WEST EDGE OF A NORTH-SOUTH
AW5439'SIDEWALK.
AW5439'
AW5439'HARRIS-GALVESTON, TEXAS, SUBSIDENCE NETWORK, JAN 1987.
AW5439'
AW5439'THIS STATION IS SUITABLE FOR GPS SURVEYS.
AW5439'
AW5439'DESCRIBED BY P.C. OSLEY.
AW5439
AW5439                          STATION RECOVERY (1994)
AW5439
AW5439'RECOVERY NOTE BY US POWER SQUADRON 1994
AW5439'RECOVERED IN GOOD CONDITION.
AW5439
AW5439                          STATION RECOVERY (1994)
AW5439
AW5439'RECOVERY NOTE BY HARRIS-GALV CO DIST 1994 (JCH)
AW5439'RECOVERED AS DESCRIBED.
AW5439
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AW5439                          STATION RECOVERY (2004)
AW5439
AW5439'RECOVERY NOTE BY US POWER SQUADRON 2004 (GWS)
AW5439'THE NAME OF THE OFFICE BUILDING IS SEATRAZ SYSTEMS.
AW5439
AW5439                          STATION RECOVERY (2011)
AW5439
AW5439'RECOVERY NOTE BY SURVEYING AND MAPPING, INC 2011 (TAT)
AW5439'RECOVERED IN GOOD CONDITION.
```

(2) Publish the latest available network and local accuracies on the datasheet based on the most recent load date for GPS projects loaded since the 2011 national readjustment. So if there were three local accuracies that were loaded at the time of the 2011 national readjustment, and two more were loaded after the 2011 national readjustment, then all five should be displayed on the listing of local accuracies. Also if no new position record is added (i.e. the position is held fixed) they can still add new network and local accuracy records. This means that we can no longer retrieve the network and local accuracies by UID/ADJ_ID/DATUM key but by UID/DATUM now.

An example datasheet BEFORE this correction can be seen below.

```
PROGRAM = datasheet95, VERSION = 7.89.6
1        National Geodetic Survey,   Retrieval Date = NOVEMBER  5, 2012
 FX4859 ***********************************************************************
 FX4859  DESIGNATION -  JACKSON AZ MK
 FX4859  PID         -  FX4859
 FX4859  STATE/COUNTY-  NC/NORTHAMPTON
 FX4859  COUNTRY     -  US
 FX4859  USGS QUAD   -  JACKSON (1974)
 FX4859
 FX4859                         *CURRENT SURVEY CONTROL
 FX4859  ______________________________________________________________________
 FX4859* NAD 83(2011) POSITION- 36 24 44.66001(N) 077 26 08.41822(W)   ADJUSTED
 FX4859* NAD 83(2011) ELLIP HT-     5.614 (meters)        (06/27/12)   ADJUSTED
 FX4859* NAD 83(2011) EPOCH   -  2010.00
 FX4859* NAVD 88 ORTHO HEIGHT -    40.032  (meters)     131.34  (feet) ADJUSTED
 FX4859  ______________________________________________________________________
 FX4859  NAD 83(2011) X  -  1,117,909.431 (meters)                    COMP
 FX4859  NAD 83(2011) Y  - -5,015,906.121 (meters)                    COMP
 FX4859  NAD 83(2011) Z  -  3,765,119.867 (meters)                    COMP
 FX4859  LAPLACE CORR    -         -2.41  (seconds)                   DEFLEC12A
 FX4859  GEOID HEIGHT    -        -34.40  (meters)                    GEOID12A
 FX4859  DYNAMIC HEIGHT  -         40.001 (meters)      131.24  (feet) COMP
 FX4859  MODELED GRAVITY -    979,847.3   (mgal)                      NAVD 88
 FX4859
 FX4859  VERT ORDER      -  SECOND    CLASS II
 FX4859
 FX4859  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 FX4859  Type                                           Horiz  Ellip  Dist(km)
 FX4859  ----------------------------------------------------------------------
 FX4859  NETWORK                                        0.48   0.53
 FX4859  ----------------------------------------------------------------------
 FX4859  MEDIAN LOCAL ACCURACY AND DIST (000 points)   0.00   0.00      0.00
 FX4859  ----------------------------------------------------------------------
 FX4859  NOTE: Click here for information on individual local accuracy
 FX4859  values and other accuracy information.
 FX4859
 FX4859
 FX4859.This is a reference station for the JACKSON NC
```

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FX4859.National Continuously Operating Reference Station (NCJA).
FX4859
FX4859.The horizontal coordinates were established by GPS observations
FX4859.and adjusted by the National Geodetic Survey in June 2012.
FX4859
FX4859.NAD 83(2011) refers to NAD 83 coordinates where the reference
FX4859.frame has been affixed to the stable North American tectonic plate. See
FX4859.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
FX4859
FX4859.The horizontal coordinates are valid at the epoch date displayed above
FX4859.which is a decimal equivalence of Year/Month/Day.
FX4859
FX4859.The orthometric height was determined by differential leveling and
FX4859.adjusted by the NATIONAL GEODETIC SURVEY
FX4859.in August 2007.
FX4859
FX4859.No vertical observational check was made to the station.
FX4859
FX4859.The X, Y, and Z were computed from the position and the ellipsoidal ht.
FX4859
FX4859.The Laplace correction was computed from DEFLEC12A derived deflections.
FX4859
FX4859.The ellipsoidal height was determined by GPS observations
FX4859.and is referenced to NAD 83.
FX4859
FX4859.The dynamic height is computed by dividing the NAVD 88
FX4859.geopotential number by the normal gravity value computed on the
FX4859.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
FX4859.degrees latitude (g = 980.6199 gals.).
FX4859
FX4859.The modeled gravity was interpolated from observed gravity values.
FX4859
FX4859. The following values were computed from the NAD 83(2011) position.
FX4859
FX4859;                    North         East     Units Scale Factor Converg.
FX4859;SPC NC       -   296,468.584   749,913.923   MT  1.00007786   +0 54 10.4
FX4859;SPC NC       -   972,664.01  2,460,342.60   sFT  1.00007786   +0 54 10.4
FX4859;UTM  18      - 4,032,448.245   281,607.746   MT  1.00018768   -1 26 46.9
FX4859
FX4859!             -  Elev Factor  x  Scale Factor =   Combined Factor
FX4859!SPC NC       -   0.99999912  x   1.00007786  =   1.00007698
FX4859!UTM  18      -   0.99999912  x   1.00018768  =   1.00018680
FX4859
FX4859:                Primary Azimuth Mark                    Grid Az
FX4859:SPC NC       -  JACKSON NC CORS ARP                     200 36 35.7
FX4859:UTM  18      -  JACKSON NC CORS ARP                     202 57 33.0
FX4859
FX4859|---------------------------------------------------------------------|
FX4859| PID    Reference Object                     Distance      Geod. Az  |
FX4859|                                                           dddmmss.s |
FX4859| DH7133 JACKSON NC CORS ARP                467.302 METERS 2013046.1 |
FX4859|---------------------------------------------------------------------|
FX4859
FX4859                          SUPERSEDED SURVEY CONTROL
FX4859
FX4859  NAD 83(2007)-  36 24 44.66020(N)    077 26 08.41856(W) AD(2002.00) B
FX4859  ELLIP H (11/08/07)    5.623  (m)                       GP(2002.00) 4 2
FX4859  NAD 83(1986)-  36 24 44.66760(N)    077 26 08.43126(W) AD(       ) 1
FX4859  NAD 83(2001)-  36 24 44.66031(N)    077 26 08.41856(W) AD(       ) B
FX4859  ELLIP H (03/06/06)    5.623  (m)                       GP(       ) 4 2
FX4859  NAVD 88 (03/06/06)   40.03   (m)          131.3    (f) LEVELING    3
FX4859
FX4859.Superseded values are not recommended for survey control.
```

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 FX4859
 FX4859.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 FX4859.See file dsdata.txt to determine how the superseded data were derived.
 FX4859
 FX4859_U.S. NATIONAL GRID SPATIAL ADDRESS: 18STF8160732448(NAD 83)
 FX4859
 FX4859_MARKER: DZ = AZIMUTH MARK DISK
 FX4859_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 FX4859_STAMPING: JACKSON 1959
 FX4859_MARK LOGO: CGS
 FX4859_MAGNETIC: O = OTHER; SEE DESCRIPTION
 FX4859_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 FX4859+STABILITY: SURFACE MOTION
 FX4859_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 FX4859+SATELLITE: SATELLITE OBSERVATIONS - February 28, 2012
 FX4859
 FX4859  HISTORY     - Date     Condition        Report By
 FX4859  HISTORY     - 1959     MONUMENTED       CGS
 FX4859  HISTORY     - 20041229 GOOD             NCGS
 FX4859  HISTORY     - 20050124 GOOD             NCGS
 FX4859  HISTORY     - 20120228 GOOD             NCGS
 FX4859
 FX4859                          STATION DESCRIPTION
 FX4859
 FX4859'DESCRIBED BY NORTH CAROLINA GEODETIC SURVEY 2004 (EJH)
 FX4859'STATION IS LOCATED ABOUT 1.7 MI (2.7 KM) NORTHWEST OF JACKSON AND 5.8
 FX4859'MI (9.3 KM) SOUTH OF SEABOARD.  ALONG NC 305 FOR 1.8 MI (2.9 KM) NORTH
 FX4859'FROM THE INTERSECTION WITH US 158, IN JACKSON, TO THE NORTH ENTRANCE
 FX4859'TO JOHN W.  FAISON ADMINISTRATIVE CENTER (9495) AND STATION, IN THE
 FX4859'SOUTHWEST QUADRANT.  MARK IS ABOUT LEVEL WITH NC 305 AND PROJECTS
 FX4859'4-INCHES ABOVE THE GROUND.  LOCATED 23.0 FT (7.0 M) WEST-NORTHWEST OF
 FX4859'THE CENTERLINE OF NC 305, 27 FEET (8.2 M) SOUTH OF THE CENTER OF THE
 FX4859'NORTH ENTRANCE , 16.6 FT (5.1 M) SOUTHEAST OF A METAL LIGHT POLE AND
 FX4859'52.8 FT (16.1 M) SOUTH OF A FIRE HYDRANT.
 FX4859
 FX4859                          STATION RECOVERY (2005)
 FX4859
 FX4859'RECOVERY NOTE BY NORTH CAROLINA GEODETIC SURVEY 2005 (EJH)
 FX4859'STATION IS LOCATED ABOUT 1.7 MI (2.7 KM) NORTHWEST OF JACKSON AND 5.8
 FX4859'MI (9.3 KM) SOUTH OF SEABOARD.  ALONG NC 305 FOR 1.8 MI (2.9 KM) NORTH
 FX4859'FROM THE INTERSECTION WITH US 158, IN JACKSON, TO THE NORTH ENTRANCE
 FX4859'TO JOHN W.  FAISON ADMINISTRATIVE CENTER (9495) AND STATION, IN THE
 FX4859'SOUTHWEST QUADRANT.  MARK IS ABOUT LEVEL WITH NC 305 AND PROJECTS
 FX4859'4-INCHES ABOVE THE GROUND.  LOCATED 23.0 FT (7.0 M) WEST-NORTHWEST OF
 FX4859'THE CENTERLINE OF NC 305, 27 FEET (8.2 M) SOUTH OF THE CENTER OF THE
 FX4859'NORTH ENTRANCE , 16.6 FT (5.1 M) SOUTHEAST OF A METAL LIGHT POLE AND
 FX4859'52.8 FT (16.1 M) SOUTH OF A FIRE HYDRANT.
 FX4859
 FX4859                          STATION RECOVERY (2012)
 FX4859
 FX4859'RECOVERY NOTE BY NORTH CAROLINA GEODETIC SURVEY 2012 (WMK)
 FX4859'RECOVERED IN GOOD CONDITION WITH THE FOLLOWING ADDITION.
 FX4859'
 FX4859'22.5 FT WEST-NORTHWEST OF THE CENTERLINE NC 305  THE SITE LOCATION WAS
 FX4859'REPORTED AS SUITABLE FOR SATELLITE OBSERVATIONS-FEBRUARY 28, 2012.
```

An example datasheet BEFORE this correction can be seen below.

```
1        National Geodetic Survey,   Retrieval Date = NOVEMBER  5, 2012
 FX4859 ***********************************************************************
 FX4859  DESIGNATION -  JACKSON AZ MK
 FX4859  PID         -  FX4859
 FX4859  STATE/COUNTY-  NC/NORTHAMPTON
```

```
FX4859  COUNTRY     -  US
FX4859  USGS QUAD   -  JACKSON (1974)
FX4859
FX4859                        *CURRENT SURVEY CONTROL
FX4859  ______________________________________________________________________
FX4859* NAD 83(2011) POSITION- 36 24 44.66001(N) 077 26 08.41822(W)   ADJUSTED
FX4859* NAD 83(2011) ELLIP HT-     5.614 (meters)        (06/27/12)   ADJUSTED
FX4859* NAD 83(2011) EPOCH   -  2010.00
FX4859* NAVD 88 ORTHO HEIGHT -    40.032  (meters)     131.34  (feet) ADJUSTED
FX4859  ______________________________________________________________________
FX4859  NAD 83(2011) X  -  1,117,909.431 (meters)                     COMP
FX4859  NAD 83(2011) Y  - -5,015,906.121 (meters)                     COMP
FX4859  NAD 83(2011) Z  -  3,765,119.867 (meters)                     COMP
FX4859  LAPLACE CORR    -         -2.41  (seconds)                    DEFLEC12A
FX4859  GEOID HEIGHT    -        -34.40  (meters)                     GEOID12A
FX4859  DYNAMIC HEIGHT  -         40.001 (meters)      131.24  (feet) COMP
FX4859  MODELED GRAVITY -    979,847.3   (mgal)                       NAVD 88
FX4859
FX4859  VERT ORDER      -  SECOND    CLASS II
FX4859
FX4859  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
FX4859  Type                                          Horiz  Ellip  Dist(km)
FX4859  ----------------------------------------------------------------------
FX4859  NETWORK                                       0.49   0.67
FX4859  ----------------------------------------------------------------------
FX4859  MEDIAN LOCAL ACCURACY AND DIST (005 points)   0.54   1.04     14.86
FX4859  ----------------------------------------------------------------------
FX4859  NOTE: Click here for information on individual local accuracy
FX4859  values and other accuracy information.
FX4859
FX4859
FX4859.This is a reference station for the JACKSON NC
FX4859.National Continuously Operating Reference Station (NCJA).
FX4859
FX4859.The horizontal coordinates were established by GPS observations
FX4859.and adjusted by the National Geodetic Survey in June 2012.
FX4859
FX4859.NAD 83(2011) refers to NAD 83 coordinates where the reference
FX4859.frame has been affixed to the stable North American tectonic plate. See
FX4859.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
FX4859
FX4859.The horizontal coordinates are valid at the epoch date displayed above
FX4859.which is a decimal equivalence of Year/Month/Day.
FX4859
FX4859.The orthometric height was determined by differential leveling and
FX4859.adjusted by the NATIONAL GEODETIC SURVEY
FX4859.in August 2007.
FX4859
FX4859.No vertical observational check was made to the station.
FX4859
FX4859.The X, Y, and Z were computed from the position and the ellipsoidal ht.
FX4859
FX4859.The Laplace correction was computed from DEFLEC12A derived deflections.
FX4859
FX4859.The ellipsoidal height was determined by GPS observations
FX4859.and is referenced to NAD 83.
FX4859
FX4859.The dynamic height is computed by dividing the NAVD 88
FX4859.geopotential number by the normal gravity value computed on the
FX4859.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
FX4859.degrees latitude (g = 980.6199 gals.).
FX4859
FX4859.The modeled gravity was interpolated from observed gravity values.
```

```
FX4859
FX4859. The following values were computed from the NAD 83(2011) position.
FX4859
FX4859;                    North         East     Units Scale Factor Converg.
FX4859;SPC NC       -   296,468.584   749,913.923   MT  1.00007786   +0 54 10.4
FX4859;SPC NC       -   972,664.01  2,460,342.60   sFT  1.00007786   +0 54 10.4
FX4859;UTM  18      - 4,032,448.245   281,607.746   MT  1.00018768   -1 26 46.9
FX4859
FX4859!             -  Elev Factor  x  Scale Factor =   Combined Factor
FX4859!SPC NC       -   0.99999912  x   1.00007786  =   1.00007698
FX4859!UTM  18      -   0.99999912  x   1.00018768  =   1.00018680
FX4859
FX4859:                Primary Azimuth Mark                    Grid Az
FX4859:SPC NC       -  JACKSON NC CORS ARP                     200 36 35.7
FX4859:UTM  18      -  JACKSON NC CORS ARP                     202 57 33.0
FX4859
FX4859|-----------------------------------------------------------------------|
FX4859| PID    Reference Object                     Distance      Geod. Az  |
FX4859|                                                           dddmmss.s |
FX4859| DH7133 JACKSON NC CORS ARP                467.302 METERS 2013046.1 |
FX4859|-----------------------------------------------------------------------|
FX4859
FX4859                          SUPERSEDED SURVEY CONTROL
FX4859
FX4859  NAD 83(2007)-  36 24 44.66020(N)    077 26 08.41856(W) AD(2002.00) B
FX4859  ELLIP H (11/08/07)    5.623  (m)                        GP(2002.00) 4 2
FX4859  NAD 83(1986)-  36 24 44.66760(N)    077 26 08.43126(W) AD(       ) 1
FX4859  NAD 83(2001)-  36 24 44.66031(N)    077 26 08.41856(W) AD(       ) B
FX4859  ELLIP H (03/06/06)    5.623  (m)                        GP(       ) 4 2
FX4859  NAVD 88 (03/06/06)   40.03   (m)          131.3    (f) LEVELING    3
FX4859
FX4859.Superseded values are not recommended for survey control.
FX4859
FX4859.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FX4859.See file dsdata.txt to determine how the superseded data were derived.
FX4859
FX4859_U.S. NATIONAL GRID SPATIAL ADDRESS: 18STF8160732448(NAD 83)
FX4859
FX4859_MARKER: DZ = AZIMUTH MARK DISK
FX4859_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
FX4859_STAMPING: JACKSON 1959
FX4859_MARK LOGO: CGS
FX4859_MAGNETIC: O = OTHER; SEE DESCRIPTION
FX4859_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
FX4859+STABILITY: SURFACE MOTION
FX4859_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
FX4859+SATELLITE: SATELLITE OBSERVATIONS - February 28, 2012
FX4859
FX4859  HISTORY     - Date     Condition        Report By
FX4859  HISTORY     - 1959     MONUMENTED       CGS
FX4859  HISTORY     - 20041229 GOOD             NCGS
FX4859  HISTORY     - 20050124 GOOD             NCGS
FX4859  HISTORY     - 20120228 GOOD             NCGS
FX4859
FX4859                          STATION DESCRIPTION
FX4859
FX4859'DESCRIBED BY NORTH CAROLINA GEODETIC SURVEY 2004 (EJH)
FX4859'STATION IS LOCATED ABOUT 1.7 MI (2.7 KM) NORTHWEST OF JACKSON AND 5.8
FX4859'MI (9.3 KM) SOUTH OF SEABOARD.  ALONG NC 305 FOR 1.8 MI (2.9 KM) NORTH
FX4859'FROM THE INTERSECTION WITH US 158, IN JACKSON, TO THE NORTH ENTRANCE
FX4859'TO JOHN W.  FAISON ADMINISTRATIVE CENTER (9495) AND STATION, IN THE
FX4859'SOUTHWEST QUADRANT.  MARK IS ABOUT LEVEL WITH NC 305 AND PROJECTS
FX4859'4-INCHES ABOVE THE GROUND.  LOCATED 23.0 FT (7.0 M) WEST-NORTHWEST OF
```

FX4859'THE CENTERLINE OF NC 305, 27 FEET (8.2 M) SOUTH OF THE CENTER OF THE
FX4859'NORTH ENTRANCE , 16.6 FT (5.1 M) SOUTHEAST OF A METAL LIGHT POLE AND
FX4859'52.8 FT (16.1 M) SOUTH OF A FIRE HYDRANT.
FX4859
FX4859 STATION RECOVERY (2005)
FX4859
FX4859'RECOVERY NOTE BY NORTH CAROLINA GEODETIC SURVEY 2005 (EJH)
FX4859'STATION IS LOCATED ABOUT 1.7 MI (2.7 KM) NORTHWEST OF JACKSON AND 5.8
FX4859'MI (9.3 KM) SOUTH OF SEABOARD. ALONG NC 305 FOR 1.8 MI (2.9 KM) NORTH
FX4859'FROM THE INTERSECTION WITH US 158, IN JACKSON, TO THE NORTH ENTRANCE
FX4859'TO JOHN W. FAISON ADMINISTRATIVE CENTER (9495) AND STATION, IN THE
FX4859'SOUTHWEST QUADRANT. MARK IS ABOUT LEVEL WITH NC 305 AND PROJECTS
FX4859'4-INCHES ABOVE THE GROUND. LOCATED 23.0 FT (7.0 M) WEST-NORTHWEST OF
FX4859'THE CENTERLINE OF NC 305, 27 FEET (8.2 M) SOUTH OF THE CENTER OF THE
FX4859'NORTH ENTRANCE , 16.6 FT (5.1 M) SOUTHEAST OF A METAL LIGHT POLE AND
FX4859'52.8 FT (16.1 M) SOUTH OF A FIRE HYDRANT.
FX4859
FX4859 STATION RECOVERY (2012)
FX4859
FX4859'RECOVERY NOTE BY NORTH CAROLINA GEODETIC SURVEY 2012 (WMK)
FX4859'RECOVERED IN GOOD CONDITION WITH THE FOLLOWING ADDITION.
FX4859'
FX4859'22.5 FT WEST-NORTHWEST OF THE CENTERLINE NC 305 THE SITE LOCATION WAS
FX4859'REPORTED AS SUITABLE FOR SATELLITE OBSERVATIONS-FEBRUARY 28, 2012.

Version 7.89.6 released at 9:55am on 10/23/2012

This release updates datasheets to use the new DEFLEC12A model. The DEFLEC12A model's territory encompasses the states in CONUS, Alaska (AK), American Samoa (AS), Northern Marianas Islands (CQ), Guam (GU), Hawaii (HI), Puerto Rico (PR), and The US Virgin Islands (VQ).

An example datasheet BEFORE the updates to the deflections:

```
PROGRAM = datasheet95, VERSION = 7.89.5
1        National Geodetic Survey,   Retrieval Date = OCTOBER 16, 2012
 AC6803 ***********************************************************************
 AC6803  HT_MOD      -  This is a Height Modernization Survey Station.
 AC6803  PACS        -  This is a Primary Airport Control Station.
 AC6803  DESIGNATION -  AZC A
 AC6803  PID         -  AC6803
 AC6803  STATE/COUNTY-  AZ/MOHAVE
 AC6803  COUNTRY     -  US
 AC6803  USGS QUAD   -  LOST SPRING MTN EAST (1988)
 AC6803
 AC6803                        *CURRENT SURVEY CONTROL
 AC6803  ______________________________________________________________________
 AC6803* NAD 83(2011) POSITION- 36 57 59.55452(N) 113 00 32.22876(W)   ADJUSTED
 AC6803* NAD 83(2011) ELLIP HT-  1462.778 (meters)        (06/27/12)   ADJUSTED
 AC6803* NAD 83(2011) EPOCH   -  2010.00
 AC6803* NAVD 88 ORTHO HEIGHT -  1485.59   (meters)    4874.0   (feet) GPS OBS
 AC6803  ______________________________________________________________________
 AC6803  NAVD 88 orthometric height was determined with geoid model    GEOID09
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                     GEOID09
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                     GEOID12A
 AC6803  NAD 83(2011) X  - -1,994,789.478 (meters)                     COMP
 AC6803  NAD 83(2011) Y  - -4,697,388.715 (meters)                     COMP
 AC6803  NAD 83(2011) Z  -  3,815,306.832 (meters)                     COMP
 AC6803  LAPLACE CORR    -          3.37  (seconds)                    DEFLEC09
 AC6803
 AC6803  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AC6803  Type                                          Horiz  Ellip  Dist(km)
 AC6803  ----------------------------------------------------------------------
 AC6803  NETWORK                                        0.56   1.10
 AC6803  ----------------------------------------------------------------------
 AC6803  MEDIAN LOCAL ACCURACY AND DIST (032 points)   0.81   1.74     58.94
 AC6803  ----------------------------------------------------------------------
 AC6803  NOTE: Click here for information on individual local accuracy
 AC6803  values and other accuracy information.
 AC6803
 AC6803
 AC6803.This mark is at Colorado City Municipal Airport (AZC)
 AC6803
 AC6803.The horizontal coordinates were established by GPS observations
 AC6803.and adjusted by the National Geodetic Survey in June 2012.
 AC6803
 AC6803.NAD 83(2011) refers to NAD 83 coordinates where the reference
 AC6803.frame has been affixed to the stable North American tectonic plate. See
 AC6803.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 AC6803
 AC6803.The horizontal coordinates are valid at the epoch date displayed above
 AC6803.which is a decimal equivalence of Year/Month/Day.
 AC6803
 AC6803.The orthometric height was determined by GPS observations and a
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AC6803.high-resolution geoid model.
AC6803
AC6803.GPS derived orthometric heights for airport stations designated as
AC6803.PACS or SACS are published to 2 decimal places.  This maintains
AC6803.centimeter relative accuracy between the PACS and SACS.  It does
AC6803.not indicate centimeter accuracy relative to other marks which are
AC6803.part of the NAVD 88 network.
AC6803
AC6803.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AC6803
AC6803.The Laplace correction was computed from DEFLEC09 derived deflections.
AC6803
AC6803.The ellipsoidal height was determined by GPS observations
AC6803.and is referenced to NAD 83.
AC6803
AC6803. The following values were computed from the NAD 83(2011) position.
AC6803
AC6803;                    North         East     Units Scale Factor Converg.
AC6803;SPC AZ W     -   662,036.173   279,346.887   MT  0.99998696   +0 26 44.3
AC6803;SPC AZ W     - 2,172,034.69    916,492.41   iFT  0.99998696   +0 26 44.3
AC6803;UTM  12      - 4,093,046.712   321,162.789   MT  0.99999401   -1 12 30.2
AC6803
AC6803!             -  Elev Factor  x  Scale Factor =   Combined Factor
AC6803!SPC AZ W     -   0.99977050  x   0.99998696  =   0.99975746
AC6803!UTM  12      -   0.99977050  x   0.99999401  =   0.99976451
AC6803
AC6803|---------------------------------------------------------------------|
AC6803| PID    Reference Object                    Distance      Geod. Az  |
AC6803|                                                          dddmmss.s |
AC6803| AE3181 AZC CL END RWY 20                   68.963 METERS 15655     |
AC6803|---------------------------------------------------------------------|
AC6803
AC6803                          SUPERSEDED SURVEY CONTROL
AC6803
AC6803  NAD 83(2007)-  36 57 59.55377(N)    113 00 32.22917(W) AD(2007.00) 0
AC6803  ELLIP H (02/10/07) 1462.787  (m)                       GP(2007.00)
AC6803  ELLIP H (01/12/01) 1462.805  (m)                       GP(       ) 4 1
AC6803  NAD 83(1992)-  36 57 59.55345(N)    113 00 32.22767(W) AD(       ) B
AC6803  ELLIP H (03/14/97) 1462.873  (m)                       GP(       ) 3 1
AC6803  NAVD 88 (02/17/09) 1485.56   (m)  GEOID03 model used   GPS OBS
AC6803  NAVD 88 (03/14/97) 1485.51   (m)  GEOID96 model used   GPS OBS
AC6803
AC6803.Superseded values are not recommended for survey control.
AC6803
AC6803.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AC6803.See file dsdata.txt to determine how the superseded data were derived.
AC6803
AC6803_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SUF2116293046(NAD 83)
AC6803
AC6803_MARKER: F = FLANGE-ENCASED ROD
AC6803_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AC6803_STAMPING: AZC A 1996
AC6803_MARK LOGO: NGS
AC6803_PROJECTION: FLUSH
AC6803_MAGNETIC: I = MARKER IS A STEEL ROD
AC6803_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AC6803_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AC6803+SATELLITE: SATELLITE OBSERVATIONS - September 10, 2008
AC6803_ROD/PIPE-DEPTH: 20.6 meters
AC6803
AC6803  HISTORY     - Date     Condition        Report By
AC6803  HISTORY     - 1996     MONUMENTED       CHANCE
AC6803  HISTORY     - 19970506 GOOD             NGS
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AC6803  HISTORY     - 20080910 GOOD             GEOANA
AC6803
AC6803                           STATION DESCRIPTION
AC6803
AC6803'DESCRIBED BY JE CHANCE AND ASSOCIATES 1996 (SDC)
AC6803'THE STATION IS LOCATED APPROXIMATELY 6.5 KM (4.05 MI) SOUTHWEST OF THE
AC6803'TOWN OF COLORADO CITY AT THE COLORADO CITY MUNICIPAL AIRPORT.
AC6803'OWNERSHIP -- TOWN OF COLORADO CITY, LADELL BISTLINE - AIRPORT MANAGER,
AC6803'PHONE (520) 875-2308 TO REACH THE STATION FROM MILEPOST 1.4 OF STATE
AC6803'HIGHWAY 389 NEAR COLORADO CITY AT THE JUNCTION WITH A PAVED ROAD,
AC6803'PROCEED WEST ON THE PAVED ROAD FOR 1.3 KM (0.80 MI) , SOUTH FOR 2.4 KM
AC6803'(1.50 MI) , THEN WEST FOR 0.8 KM (0.50 MI) TO THE AIRPORT TERMINAL AND
AC6803'GATE.  PROCEED THROUGH GATE AND CONTINUE WESTERLY ACROSS APRON AND
AC6803'TAXIWAY FOR 0.15 KM (0.10 MI) TO THE JUNCTION WITH RUNWAY 2-20.  TURN
AC6803'RIGHT AND GO NORTH-NORTHEAST ALONG RUNWAY 2-20 FOR 0.65 KM (0.40 MI)
AC6803'TO THE END OF THE RUNWAY AND THE STATION ON THE LEFT THE STATION IS
AC6803'THE TOP CENTER OF A STAINLESS STEEL ROD DRIVEN TO REFUSAL AT A DEPTH
AC6803'OF 20.60 M (67.59 FT) RECESSED 12 CM BELOW GROUND LEVEL IN A 2.5 CM
AC6803'DIA GREASE FILLED FINNED PLASTIC SLEEVE 90 CM LONG ENCASED IN A 12.7
AC6803'CM DIA PVC PIPE WITH NGS LOGO CAP SURROUNDED BY CONCRETE.  THE LOGO
AC6803'CAP AND CONCRETE ARE SET FLUSH WITH THE GROUND. THE STATION IS LOCATED
AC6803'7.30 M (23.95 FT) SOUTHEAST OF A FENCE, 62.00 M (203.41 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE APPROACH END OF RUNWAY
AC6803'20, 57.60 M (188.98 FT) NORTH-NORTHWEST OF THE NORTHWESTERNMOST
AC6803'THRESHOLD LIGHT, 43.85 M (143.86 FT) NORTHEAST OF A STEEL FENCE POST
AC6803'SUPPORT THAT IS IN LINE WITH A NORTHWESTERLY EXTENSION OF THE NORTHERN
AC6803'EDGE OF RUNWAY 20, 109.2 M (358.3 FT) SOUTH-SOUTHWEST OF THE
AC6803'NORTHWESTERN FENCE CORNER, AND 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST THE STATION IS DESIGNATED AS A PRIMARY AIRPORT CONTROL
AC6803'STATION (PACS) - ARIZONA ANA SURVEYS 1996
AC6803
AC6803                           STATION RECOVERY (1997)
AC6803
AC6803'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)
AC6803'THE STATION IS LOCATED ABOUT 5.0 KM (3.10 MI) SOUTHWEST OF COLORADO
AC6803'CITY AT THE COLORADO CITY MUNICIPAL AIRPORT, ALONG THE WEST SIDE OF
AC6803'AND NEAR THE NORTH END OF RUNWAY 2-20.  OWNERSHIP--CITY OF COLORADO
AC6803'CITY, LADELL BISTLINE, AIRPORT MANAGER, BOX 70, COLORADO CITY, AZ
AC6803'86021.  THE PHONE NUMBER IS (520) 875-2646.  TO REACH THE STATION FROM
AC6803'THE JUNCTION OF STATE HIGHWAY 389 AND THE ARIZONA/UTAH STATE LINE, GO
AC6803'SOUTHEASTERLY FOR 2.2 KM (1.35 MI) ON THE HIGHWAY TO A PAVED ROAD
AC6803'RIGHT.  TURN RIGHT AND GO WEST THEN SOUTH ON MOHAVE AVENUE THEN
AC6803'REDWOOD STREET (THERE ARE NO STREET SIGNS) FOR 3.7 KM (2.30 MI) TO A
AC6803'PAVED ROAD RIGHT.  TURN RIGHT AND GO WEST THEN SOUTH FOR 0.9 KM (0.55
AC6803'MI) ON AIRPORT AVENUE (THERE IS NO STREET SIGN) TO A LOCKED GATE AND
AC6803'THE AIRPORT ADMINISTRATIVE BUILDING (UNATTENDED) ON THE RIGHT.  PASS
AC6803'THROUGH THE LOCKED GATE AND GO NORTHWEST FOR 0.2 KM (0.10 MI) ACROSS A
AC6803'RAMP AND ALONG A TAXIWAY TO RUNWAY 2-20.  TURN RIGHT AND GO NORTHEAST
AC6803'FOR 0.6 KM (0.35 MI) ALONG THE RUNWAY TO THE STATION ON THE LEFT JUST
AC6803'PAST RUNWAY END 20.  THE STATION IS LOCATED 61.9 M (203.1 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE RUNWAY, 53.6 M (175.9
AC6803'FT) NORTHWEST OF THE EXTENDED CENTER OF THE RUNWAY, 7.3 M (24.0 FT)
AC6803'SOUTHEAST OF A FENCE LINE, 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST, AND THE MONUMENT IS FLUSH WITH THE GROUND SURFACE.
AC6803'NOTE--AIRPORT IS UNATTENDED.  A PHILLIPS SCREW DRIVER IS REQUIRED TO
AC6803'ACCESS THE DATUM POINT THROUGH THE LOGO CAP. THIS STATION SELECTED AS
AC6803'THE PACS FOR THIS AIRPORT.
AC6803
AC6803                           STATION RECOVERY (2008)
AC6803
AC6803'RECOVERY NOTE BY GEODETIC ANALYSIS LLC 2008 (MLD)
AC6803'RECOVERED AS DESCRIBED.  ADDITIONAL INFORMATION FOLLOWS.
AC6803'
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 AC6803'OWNERSHIP--TOWN OF COLORADO CITY P.O. BOX 70, COLORADO CITY, ARIZONA
 AC6803'86021, PHONE 928-875-2646.
 AC6803'
 AC6803'NOTE--ACCESS TO AIRPORT IS THROUGH AN ELECTRIC GATE THAT REQUIRES A
 AC6803'SECURITY CODE TO OPEN.  AIRPORT MANAGER IS LADELL BISTLINE, BOX 726,
 AC6803'COLORADO CITY, ARIZONA 86021, PHONE 928-875-2871.  AIRPORT MANAGER
 AC6803'HOME PHONE IS 928-875-2308 AND CELL PHONE IS 435-616-2871.
 AC6803'
 AC6803'NOTE--A DIMPLE WAS DRILLED INTO THE TOP OF THE ROD TO ACCEPT THE TIP
 AC6803'OF A FIXED HEIGHT POLE.

 *** retrieval complete.
 Elapsed Time = 00:00:03
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The example datasheet AFTER the updates to the

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1        National Geodetic Survey,   Retrieval Date = OCTOBER 16, 2012
 AC6803 ***********************************************************************
 AC6803  HT_MOD      -  This is a Height Modernization Survey Station.
 AC6803  PACS        -  This is a Primary Airport Control Station.
 AC6803  DESIGNATION -  AZC A
 AC6803  PID         -  AC6803
 AC6803  STATE/COUNTY-  AZ/MOHAVE
 AC6803  COUNTRY     -  US
 AC6803  USGS QUAD   -  LOST SPRING MTN EAST (1988)
 AC6803
 AC6803                        *CURRENT SURVEY CONTROL
 AC6803  ______________________________________________________________________
 AC6803* NAD 83(2011) POSITION- 36 57 59.55452(N) 113 00 32.22876(W)   ADJUSTED
 AC6803* NAD 83(2011) ELLIP HT-  1462.778 (meters)        (06/27/12)   ADJUSTED
 AC6803* NAD 83(2011) EPOCH   -  2010.00
 AC6803* NAVD 88 ORTHO HEIGHT -  1485.59   (meters)    4874.0   (feet) GPS OBS
 AC6803  ______________________________________________________________________
 AC6803  NAVD 88 orthometric height was determined with geoid model    GEOID09
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                     GEOID09
 AC6803  GEOID HEIGHT    -                (meters)                     GEOID12A
 AC6803  NAD 83(2011) X  - -1,994,789.478 (meters)                     COMP
 AC6803  NAD 83(2011) Y  - -4,697,388.715 (meters)                     COMP
 AC6803  NAD 83(2011) Z  -  3,815,306.832 (meters)                     COMP
 AC6803  LAPLACE CORR    -          3.32  (seconds)                    DEFLEC12A
 AC6803
 AC6803  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AC6803  Type                                          Horiz  Ellip  Dist(km)
 AC6803  ----------------------------------------------------------------------
 AC6803  NETWORK                                        0.56   1.10
 AC6803  ----------------------------------------------------------------------
 AC6803  MEDIAN LOCAL ACCURACY AND DIST (032 points)   0.81   1.74     58.94
 AC6803  ----------------------------------------------------------------------
 AC6803  NOTE: Click here for information on individual local accuracy
 AC6803  values and other accuracy information.
 AC6803
 AC6803
 AC6803.This mark is at Colorado City Municipal Airport (AZC)
 AC6803
 AC6803.The horizontal coordinates were established by GPS observations
 AC6803.and adjusted by the National Geodetic Survey in June 2012.
 AC6803
 AC6803.NAD 83(2011) refers to NAD 83 coordinates where the reference
 AC6803.frame has been affixed to the stable North American tectonic plate. See
 AC6803.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 AC6803
 AC6803.The horizontal coordinates are valid at the epoch date displayed above
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AC6803.which is a decimal equivalence of Year/Month/Day.
AC6803
AC6803.The orthometric height was determined by GPS observations and a
AC6803.high-resolution geoid model.
AC6803
AC6803.GPS derived orthometric heights for airport stations designated as
AC6803.PACS or SACS are published to 2 decimal places.  This maintains
AC6803.centimeter relative accuracy between the PACS and SACS.  It does
AC6803.not indicate centimeter accuracy relative to other marks which are
AC6803.part of the NAVD 88 network.
AC6803
AC6803.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AC6803
AC6803.The Laplace correction was computed from DEFLEC12A derived deflections.
AC6803
AC6803.The ellipsoidal height was determined by GPS observations
AC6803.and is referenced to NAD 83.
AC6803
AC6803. The following values were computed from the NAD 83(2011) position.
AC6803
AC6803;                    North         East     Units Scale Factor Converg.
AC6803;SPC AZ W     -   662,036.173   279,346.887   MT  0.99998696   +0 26 44.3
AC6803;SPC AZ W     - 2,172,034.69    916,492.41   iFT  0.99998696   +0 26 44.3
AC6803;UTM  12      - 4,093,046.712   321,162.789   MT  0.99999401   -1 12 30.2
AC6803
AC6803!             -  Elev Factor  x  Scale Factor =   Combined Factor
AC6803!SPC AZ W     -   0.99977050  x   0.99998696  =   0.99975746
AC6803!UTM  12      -   0.99977050  x   0.99999401  =   0.99976451
AC6803
AC6803|----------------------------------------------------------------------|
AC6803| PID    Reference Object                     Distance      Geod. Az  |
AC6803|                                                           dddmmss.s |
AC6803| AE3181 AZC CL END RWY 20                    68.963 METERS 15655     |
AC6803|----------------------------------------------------------------------|
AC6803
AC6803                          SUPERSEDED SURVEY CONTROL
AC6803
AC6803  NAD 83(2007)-  36 57 59.55377(N)    113 00 32.22917(W) AD(2007.00) 0
AC6803  ELLIP H (02/10/07) 1462.787  (m)                       GP(2007.00)
AC6803  ELLIP H (01/12/01) 1462.805  (m)                       GP(       ) 4 1
AC6803  NAD 83(1992)-  36 57 59.55345(N)    113 00 32.22767(W) AD(       ) B
AC6803  ELLIP H (03/14/97) 1462.873  (m)                       GP(       ) 3 1
AC6803  NAVD 88 (02/17/09) 1485.56   (m)  GEOID03 model used   GPS OBS
AC6803  NAVD 88 (03/14/97) 1485.51   (m)  GEOID96 model used   GPS OBS
AC6803
AC6803.Superseded values are not recommended for survey control.
AC6803
AC6803.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AC6803.See file dsdata.txt to determine how the superseded data were derived.
AC6803
AC6803_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SUF2116293046(NAD 83)
AC6803
AC6803_MARKER: F = FLANGE-ENCASED ROD
AC6803_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AC6803_STAMPING: AZC A 1996
AC6803_MARK LOGO: NGS
AC6803_PROJECTION: FLUSH
AC6803_MAGNETIC: I = MARKER IS A STEEL ROD
AC6803_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AC6803_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AC6803+SATELLITE: SATELLITE OBSERVATIONS - September 10, 2008
AC6803_ROD/PIPE-DEPTH: 20.6 meters
AC6803
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AC6803  HISTORY     - Date     Condition        Report By
AC6803  HISTORY     - 1996     MONUMENTED       CHANCE
AC6803  HISTORY     - 19970506 GOOD             NGS
AC6803  HISTORY     - 20080910 GOOD             GEOANA
AC6803
AC6803                          STATION DESCRIPTION
AC6803
AC6803'DESCRIBED BY JE CHANCE AND ASSOCIATES 1996 (SDC)
AC6803'THE STATION IS LOCATED APPROXIMATELY 6.5 KM (4.05 MI) SOUTHWEST OF THE
AC6803'TOWN OF COLORADO CITY AT THE COLORADO CITY MUNICIPAL AIRPORT.
AC6803'OWNERSHIP -- TOWN OF COLORADO CITY, LADELL BISTLINE - AIRPORT MANAGER,
AC6803'PHONE (520) 875-2308 TO REACH THE STATION FROM MILEPOST 1.4 OF STATE
AC6803'HIGHWAY 389 NEAR COLORADO CITY AT THE JUNCTION WITH A PAVED ROAD,
AC6803'PROCEED WEST ON THE PAVED ROAD FOR 1.3 KM (0.80 MI) , SOUTH FOR 2.4 KM
AC6803'(1.50 MI) , THEN WEST FOR 0.8 KM (0.50 MI) TO THE AIRPORT TERMINAL AND
AC6803'GATE.  PROCEED THROUGH GATE AND CONTINUE WESTERLY ACROSS APRON AND
AC6803'TAXIWAY FOR 0.15 KM (0.10 MI) TO THE JUNCTION WITH RUNWAY 2-20.  TURN
AC6803'RIGHT AND GO NORTH-NORTHEAST ALONG RUNWAY 2-20 FOR 0.65 KM (0.40 MI)
AC6803'TO THE END OF THE RUNWAY AND THE STATION ON THE LEFT THE STATION IS
AC6803'THE TOP CENTER OF A STAINLESS STEEL ROD DRIVEN TO REFUSAL AT A DEPTH
AC6803'OF 20.60 M (67.59 FT) RECESSED 12 CM BELOW GROUND LEVEL IN A 2.5 CM
AC6803'DIA GREASE FILLED FINNED PLASTIC SLEEVE 90 CM LONG ENCASED IN A 12.7
AC6803'CM DIA PVC PIPE WITH NGS LOGO CAP SURROUNDED BY CONCRETE.  THE LOGO
AC6803'CAP AND CONCRETE ARE SET FLUSH WITH THE GROUND. THE STATION IS LOCATED
AC6803'7.30 M (23.95 FT) SOUTHEAST OF A FENCE, 62.00 M (203.41 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE APPROACH END OF RUNWAY
AC6803'20, 57.60 M (188.98 FT) NORTH-NORTHWEST OF THE NORTHWESTERNMOST
AC6803'THRESHOLD LIGHT, 43.85 M (143.86 FT) NORTHEAST OF A STEEL FENCE POST
AC6803'SUPPORT THAT IS IN LINE WITH A NORTHWESTERLY EXTENSION OF THE NORTHERN
AC6803'EDGE OF RUNWAY 20, 109.2 M (358.3 FT) SOUTH-SOUTHWEST OF THE
AC6803'NORTHWESTERN FENCE CORNER, AND 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST THE STATION IS DESIGNATED AS A PRIMARY AIRPORT CONTROL
AC6803'STATION (PACS) - ARIZONA ANA SURVEYS 1996
AC6803
AC6803                          STATION RECOVERY (1997)
AC6803
AC6803'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)
AC6803'THE STATION IS LOCATED ABOUT 5.0 KM (3.10 MI) SOUTHWEST OF COLORADO
AC6803'CITY AT THE COLORADO CITY MUNICIPAL AIRPORT, ALONG THE WEST SIDE OF
AC6803'AND NEAR THE NORTH END OF RUNWAY 2-20.  OWNERSHIP--CITY OF COLORADO
AC6803'CITY, LADELL BISTLINE, AIRPORT MANAGER, BOX 70, COLORADO CITY, AZ
AC6803'86021.  THE PHONE NUMBER IS (520) 875-2646.  TO REACH THE STATION FROM
AC6803'THE JUNCTION OF STATE HIGHWAY 389 AND THE ARIZONA/UTAH STATE LINE, GO
AC6803'SOUTHEASTERLY FOR 2.2 KM (1.35 MI) ON THE HIGHWAY TO A PAVED ROAD
AC6803'RIGHT.  TURN RIGHT AND GO WEST THEN SOUTH ON MOHAVE AVENUE THEN
AC6803'REDWOOD STREET (THERE ARE NO STREET SIGNS) FOR 3.7 KM (2.30 MI) TO A
AC6803'PAVED ROAD RIGHT.  TURN RIGHT AND GO WEST THEN SOUTH FOR 0.9 KM (0.55
AC6803'MI) ON AIRPORT AVENUE (THERE IS NO STREET SIGN) TO A LOCKED GATE AND
AC6803'THE AIRPORT ADMINISTRATIVE BUILDING (UNATTENDED) ON THE RIGHT.  PASS
AC6803'THROUGH THE LOCKED GATE AND GO NORTHWEST FOR 0.2 KM (0.10 MI) ACROSS A
AC6803'RAMP AND ALONG A TAXIWAY TO RUNWAY 2-20.  TURN RIGHT AND GO NORTHEAST
AC6803'FOR 0.6 KM (0.35 MI) ALONG THE RUNWAY TO THE STATION ON THE LEFT JUST
AC6803'PAST RUNWAY END 20.  THE STATION IS LOCATED 61.9 M (203.1 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE RUNWAY, 53.6 M (175.9
AC6803'FT) NORTHWEST OF THE EXTENDED CENTER OF THE RUNWAY, 7.3 M (24.0 FT)
AC6803'SOUTHEAST OF A FENCE LINE, 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST, AND THE MONUMENT IS FLUSH WITH THE GROUND SURFACE.
AC6803'NOTE--AIRPORT IS UNATTENDED.  A PHILLIPS SCREW DRIVER IS REQUIRED TO
AC6803'ACCESS THE DATUM POINT THROUGH THE LOGO CAP. THIS STATION SELECTED AS
AC6803'THE PACS FOR THIS AIRPORT.
AC6803
AC6803                          STATION RECOVERY (2008)
AC6803
```

```
AC6803'RECOVERY NOTE BY GEODETIC ANALYSIS LLC 2008 (MLD)
AC6803'RECOVERED AS DESCRIBED.  ADDITIONAL INFORMATION FOLLOWS.
AC6803'
AC6803'OWNERSHIP--TOWN OF COLORADO CITY P.O. BOX 70, COLORADO CITY, ARIZONA
AC6803'86021, PHONE 928-875-2646.
AC6803'
AC6803'NOTE--ACCESS TO AIRPORT IS THROUGH AN ELECTRIC GATE THAT REQUIRES A
AC6803'SECURITY CODE TO OPEN.  AIRPORT MANAGER IS LADELL BISTLINE, BOX 726,
AC6803'COLORADO CITY, ARIZONA 86021, PHONE 928-875-2871.  AIRPORT MANAGER
AC6803'HOME PHONE IS 928-875-2308 AND CELL PHONE IS 435-616-2871.
AC6803'
AC6803'NOTE--A DIMPLE WAS DRILLED INTO THE TOP OF THE ROD TO ACCEPT THE TIP
AC6803'OF A FIXED HEIGHT POLE.

*** retrieval complete.
Elapsed Time = 00:00:09
```

This release also incorporates the change request regarding the text message on the datasheets for HAND_HELD1 positions. Replace:

The horizontal coordinates were established by differentially corrected hand held GPS obs and have an estimated accuracy of +/- 3 meters.

with:

The horizontal coordinates were determined by differentially corrected hand held GPS observations or other comparable positioning techniques and have an estimated accuracy of +/- 3 meters.

An example datasheet BEFORE the updates to the HAND_HELD1 message is below.

```
PROGRAM = datasheet95, VERSION = 7.89.5
1        National Geodetic Survey,   Retrieval Date = OCTOBER 16, 2012
 DM7302 ***********************************************************************
 DM7302  DESIGNATION -  SOUTH CAROLINA
 DM7302  PID         -  DM7302
 DM7302  STATE/COUNTY-  FL/MANATEE
 DM7302  COUNTRY     -  US
 DM7302  USGS QUAD   -  KEENTOWN (1987)
 DM7302
 DM7302                         *CURRENT SURVEY CONTROL
 DM7302  ______________________________________________________________________
 DM7302* NAD 83(1986) POSITION- 27 35 14.70   (N) 082 11 55.30   (W)    HD_HELD1
 DM7302* NAVD 88 ORTHO HEIGHT -    34.583  (meters)     113.46  (feet) ADJUSTED
 DM7302  ______________________________________________________________________
 DM7302  GEOID HEIGHT    -        -24.90  (meters)                    GEOID12A
 DM7302  DYNAMIC HEIGHT  -         34.531 (meters)      113.29  (feet) COMP
 DM7302  MODELED GRAVITY -    979,138.2   (mgal)                      NAVD 88
 DM7302
 DM7302  VERT ORDER      -  SECOND    CLASS II
 DM7302
 DM7302.The horizontal coordinates were established by differentially corrected
 DM7302.hand held GPS obs and have an estimated accuracy of +/- 3 meters.
 DM7302.
 DM7302.The orthometric height was determined by differential leveling and
 DM7302.adjusted by the NATIONAL GEODETIC SURVEY
 DM7302.in August 2011.
 DM7302
 DM7302.The dynamic height is computed by dividing the NAVD 88
 DM7302.geopotential number by the normal gravity value computed on the
 DM7302.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 DM7302.degrees latitude (g = 980.6199 gals.).
 DM7302
 DM7302.The modeled gravity was interpolated from observed gravity values.
 DM7302
 DM7302;                    North         East     Units  Estimated Accuracy
 DM7302;SPC FL W     -   360,506.5     180,383.2     MT  (+/- 3 meters HH1 GPS)
 DM7302
 DM7302                          SUPERSEDED SURVEY CONTROL
 DM7302
 DM7302.No superseded survey control is available for this station.
 DM7302
```

```
 DM7302_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL8169052072(NAD 83)
 DM7302
 DM7302_MARKER: DD = SURVEY DISK
 DM7302_SETTING: 50 = ALUMINUM ALLOY ROD W/O SLEEVE (10 FT.+)
 DM7302_STAMPING: NAVD 1988 SOUTH CAROLINA 2010
 DM7302_MARK LOGO: FL-081
 DM7302_PROJECTION: RECESSED 3 CENTIMETERS
 DM7302_MAGNETIC: N = NO MAGNETIC MATERIAL
 DM7302_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 DM7302_ROD/PIPE-DEPTH:  5.6 meters
 DM7302
 DM7302  HISTORY     - Date     Condition        Report By
 DM7302  HISTORY     - 20100517 MONUMENTED       FL-081
 DM7302
 DM7302                          STATION DESCRIPTION
 DM7302
 DM7302'DESCRIBED BY MANATEE COUNTY FLORIDA 2010 (CH)
 DM7302'THE MARK IS LOCATED ABOUT 7.7 MI (12.4 KM) SOUTH-SOUTHEAST OF WIMAUMA,
 DM7302'6.9 MI (11.1 KM) WEST-NORTHWEST OF DUETTE AND 6.6 MI (10.6 KM)
 DM7302'WEST-NORTHWEST OF KEENTOWN.
 DM7302'
 DM7302'TO REACH FROM THE JUNCTION OF US-301N AND FL-62E/WAUCHULA ROAD, GO
 DM7302'EAST ON FL-62E/WAUCHULA ROAD FOR 13.81 MI (22.2 KM) TO AN
 DM7302'INTERSECTION.  TURN LEFT AND GO NORTH ON BUNKER HILL ROAD FOR 0.46 MI
 DM7302'(0.7 KM) TO THE MARK ON THE RIGHT.
 DM7302'
 DM7302'IT IS 52 FT (15.8 M) EAST-NORTHEAST OF A MAILBOX 32925, 48.3 FT (14.7
 DM7302'M) EAST-SOUTHEAST OF A MAILBOX 32926, 21 FT (6.4 M) EAST OF THE EAST
 DM7302'EDGE OF PAVEMENT OF BUNKER HILL ROAD AND 1.1 FT (0.3 M) WEST OF A
 DM7302'FIBERGLASS WITNESS POST ABOUT 0.1 FT (0.0 M) LOWER THAN THE GROUND.

 *** retrieval complete.
 Elapsed Time = 00:00:02
```

An example datasheet AFTER the updates to the HAND HELD1 message is below.

```
1        National Geodetic Survey,   Retrieval Date = OCTOBER 16, 2012
 DM7302 ***********************************************************************
 DM7302  DESIGNATION -  SOUTH CAROLINA
 DM7302  PID         -  DM7302
 DM7302  STATE/COUNTY-  FL/MANATEE
 DM7302  COUNTRY     -  US
 DM7302  USGS QUAD   -  KEENTOWN (1987)
 DM7302
 DM7302                        *CURRENT SURVEY CONTROL
 DM7302 ______________________________________________________________________
 DM7302* NAD 83(1986) POSITION- 27 35 14.70   (N) 082 11 55.30   (W)   HD_HELD1
 DM7302* NAVD 88 ORTHO HEIGHT -    34.583  (meters)     113.46  (feet) ADJUSTED
 DM7302 ______________________________________________________________________
 DM7302  GEOID HEIGHT    -        -24.90  (meters)                    GEOID12A
 DM7302  DYNAMIC HEIGHT  -         34.531 (meters)      113.29  (feet) COMP
 DM7302  MODELED GRAVITY -    979,138.2   (mgal)                      NAVD 88
 DM7302
 DM7302  VERT ORDER      -  SECOND    CLASS II
 DM7302
 DM7302.The horizontal coordinates were determined by differentially corrected
 DM7302.hand held GPS observations or other comparable positioning techniques
 DM7302.and have an estimated accuracy of +/- 3 meters.
 DM7302.
 DM7302.The orthometric height was determined by differential leveling and
 DM7302.adjusted by the NATIONAL GEODETIC SURVEY
 DM7302.in August 2011.
```

```
DM7302
DM7302.The dynamic height is computed by dividing the NAVD 88
DM7302.geopotential number by the normal gravity value computed on the
DM7302.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DM7302.degrees latitude (g = 980.6199 gals.).
DM7302
DM7302.The modeled gravity was interpolated from observed gravity values.
DM7302
DM7302;                    North         East    Units  Estimated Accuracy
DM7302;SPC FL W     -   360,506.5     180,383.2     MT  (+/- 3 meters HH1 GPS)
DM7302
DM7302                          SUPERSEDED SURVEY CONTROL
DM7302
DM7302.No superseded survey control is available for this station.
DM7302
DM7302_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL8169052072(NAD 83)
DM7302
DM7302_MARKER: DD = SURVEY DISK
DM7302_SETTING: 50 = ALUMINUM ALLOY ROD W/O SLEEVE (10 FT.+)
DM7302_STAMPING: NAVD 1988 SOUTH CAROLINA 2010
DM7302_MARK LOGO: FL-081
DM7302_PROJECTION: RECESSED 3 CENTIMETERS
DM7302_MAGNETIC: N = NO MAGNETIC MATERIAL
DM7302_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
DM7302_ROD/PIPE-DEPTH:  5.6 meters
DM7302
DM7302  HISTORY     - Date     Condition        Report By
DM7302  HISTORY     - 20100517 MONUMENTED       FL-081
DM7302
DM7302                          STATION DESCRIPTION
DM7302
DM7302'DESCRIBED BY MANATEE COUNTY FLORIDA 2010 (CH)
DM7302'THE MARK IS LOCATED ABOUT 7.7 MI (12.4 KM) SOUTH-SOUTHEAST OF WIMAUMA,
DM7302'6.9 MI (11.1 KM) WEST-NORTHWEST OF DUETTE AND 6.6 MI (10.6 KM)
DM7302'WEST-NORTHWEST OF KEENTOWN.
DM7302'
DM7302'TO REACH FROM THE JUNCTION OF US-301N AND FL-62E/WAUCHULA ROAD, GO
DM7302'EAST ON FL-62E/WAUCHULA ROAD FOR 13.81 MI (22.2 KM) TO AN
DM7302'INTERSECTION.  TURN LEFT AND GO NORTH ON BUNKER HILL ROAD FOR 0.46 MI
DM7302'(0.7 KM) TO THE MARK ON THE RIGHT.
DM7302'
DM7302'IT IS 52 FT (15.8 M) EAST-NORTHEAST OF A MAILBOX 32925, 48.3 FT (14.7
DM7302'M) EAST-SOUTHEAST OF A MAILBOX 32926, 21 FT (6.4 M) EAST OF THE EAST
DM7302'EDGE OF PAVEMENT OF BUNKER HILL ROAD AND 1.1 FT (0.3 M) WEST OF A
DM7302'FIBERGLASS WITNESS POST ABOUT 0.1 FT (0.0 M) LOWER THAN THE GROUND.

*** retrieval complete.
Elapsed Time = 00:00:02
```

Version 7.89.5 released at 3:31pm on 10/18/2012

This release the datasheet for PN1345 is displaying the best height as a GPS_OBS (i.e. adj_id GPS2361/C) when it should be displaying the ADJUSTED leveled height (i.e. 00000712). Also it should not display the GEOID03 lines. The incorrect datasheet is below:

```
PROGRAM = datasheet95, VERSION = 7.89.4
1        National Geodetic Survey,   Retrieval Date = OCTOBER  2, 2012
 PN1345 ***********************************************************************
 PN1345  HT_MOD      -  This is a Height Modernization Survey Station.
 PN1345  CBN         -  This is a Cooperative Base Network Control Station.
 PN1345  DESIGNATION -  GREEN BAY GPS
 PN1345  PID         -  PN1345
 PN1345  STATE/COUNTY-  WI/BROWN
 PN1345  COUNTRY     -  US
 PN1345  USGS QUAD   -  ONEIDA NORTH (1992)
 PN1345
 PN1345                        *CURRENT SURVEY CONTROL
 PN1345  ______________________________________________________________________
 PN1345* NAD 83(2011) POSITION- 44 34 36.08669(N) 088 10 12.44165(W)   ADJUSTED
 PN1345* NAD 83(2011) ELLIP HT-   194.934 (meters)        (06/27/12)   ADJUSTED
 PN1345* NAD 83(2011) EPOCH    -  2010.00
 PN1345* NAVD 88 ORTHO HEIGHT -   231.12    (meters)     758.3    (feet) GPS OBS
 PN1345
 PN1345  NAVD 88 orthometric height was determined with geoid model    GEOID03
 PN1345  GEOID HEIGHT    -        -36.18   (meters)                    GEOID03
 PN1345  GEOID HEIGHT    -        -36.25   (meters)                    GEOID12A
 PN1345  NAD 83(2011) X  -    145,318.171  (meters)                    COMP
 PN1345  NAD 83(2011) Y  - -4,548,549.081  (meters)                    COMP
 PN1345  NAD 83(2011) Z  -  4,454,099.390  (meters)                    COMP
 PN1345  LAPLACE CORR    -         -0.49   (seconds)                   DEFLEC09
 PN1345
 PN1345  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 PN1345  Type                                          Horiz  Ellip  Dist(km)
 PN1345  ----------------------------------------------------------------------
 PN1345  NETWORK                                        0.24   0.33
 PN1345  ----------------------------------------------------------------------
 PN1345  MEDIAN LOCAL ACCURACY AND DIST (057 points)   0.39   0.47     45.26
 PN1345  ----------------------------------------------------------------------
 PN1345  NOTE: Click here for information on individual local accuracy
 PN1345  values and other accuracy information.
 PN1345
 PN1345
 PN1345.The horizontal coordinates were established by GPS observations
 PN1345.and adjusted by the National Geodetic Survey in June 2012.
 PN1345
 PN1345.NAD 83(2011) refers to NAD 83 coordinates where the reference
 PN1345.frame has been affixed to the stable North American tectonic plate. See
 PN1345.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 PN1345
 PN1345.The horizontal coordinates are valid at the epoch date displayed above
 PN1345.which is a decimal equivalence of Year/Month/Day.
 PN1345
 PN1345.The orthometric height was determined by GPS observations and a
 PN1345.high-resolution geoid model using precise GPS observation and
 PN1345.processing techniques.
 PN1345
 PN1345.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 PN1345
 PN1345.The Laplace correction was computed from DEFLEC09 derived deflections.
 PN1345
```

```
PN1345.The ellipsoidal height was determined by GPS observations
PN1345.and is referenced to NAD 83.
PN1345
PN1345. The following values were computed from the NAD 83(2011) position.
PN1345
PN1345;                    North         East     Units Scale Factor Converg.
PN1345;SPC WI C     -    84,237.787   745,319.500   MT  0.99995429   +1 17 28.0
PN1345;SPC WI C     -   276,370.14  2,445,269.06   sFT  0.99995429   +1 17 28.0
PN1345;UTM  16      - 4,936,593.711   407,099.795   MT  0.99970613   -0 49 16.8
PN1345
PN1345!             -  Elev Factor  x  Scale Factor =   Combined Factor
PN1345!SPC WI C     -   0.99996944  x   0.99995429  =   0.99992373
PN1345!UTM  16      -   0.99996944  x   0.99970613  =   0.99967558
PN1345
PN1345                          SUPERSEDED SURVEY CONTROL
PN1345
PN1345  NAD 83(2007)-  44 34 36.08675(N)    088 10 12.44242(W) AD(       ) 0
PN1345  ELLIP H (02/10/07)  194.969  (m)                        GP(       )
PN1345  NAD 83(1997)-  44 34 36.08662(N)    088 10 12.44265(W) AD(       ) A
PN1345  ELLIP H (04/28/99)  194.949  (m)                        GP(       ) 3 1
PN1345  NAD 83(1991)-  44 34 36.08553(N)    088 10 12.44144(W) AD(       ) B
PN1345  ELLIP H (06/11/91)  195.045  (m)                        GP(       ) 4 1
PN1345  NAVD 88 (05/08/12)  231.176  (m)          758.45   (f) ADJUSTED    2 1
PN1345  NAVD 88 (06/11/03)  231.15   (m)  GEOID99 model used   GPS OBS
PN1345  NAVD 88 (04/28/99)  231.1    (m)  GEOID96 model used   GPS OBS
PN1345  NGVD 29 (06/11/91)  231.1    (m)  UNKNOWN model used   GPS OBS
PN1345
PN1345.Superseded values are not recommended for survey control.
PN1345
PN1345.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
PN1345.See file dsdata.txt to determine how the superseded data were derived.
PN1345
PN1345_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDQ0709936593(NAD 83)
PN1345
PN1345_MARKER: DH = HORIZONTAL CONTROL DISK
PN1345_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
PN1345_SP_SET: CONCRETE POST
PN1345_STAMPING: GREEN BAY GPS 1989
PN1345_MARK LOGO: NGS
PN1345_PROJECTION: FLUSH
PN1345_MAGNETIC: N = NO MAGNETIC MATERIAL
PN1345_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
PN1345_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
PN1345+SATELLITE: SATELLITE OBSERVATIONS - January 01, 2011
PN1345
PN1345  HISTORY     - Date     Condition        Report By
PN1345  HISTORY     - 1989     MONUMENTED       WIHD
PN1345  HISTORY     - 19900814 GOOD             NGS
PN1345  HISTORY     - 19930524 GOOD             NOS
PN1345  HISTORY     - 19970814 GOOD             WIHD
PN1345  HISTORY     - 20010609 GOOD             WIDT
PN1345  HISTORY     - 20020611 GOOD             JCLS
PN1345  HISTORY     - 20020614 GOOD             JCLS
PN1345  HISTORY     - 20030709 GOOD             WIDT
PN1345  HISTORY     - 20040324 GOOD             USPSQD
PN1345  HISTORY     - 20060421 GOOD             JCLS
PN1345  HISTORY     - 20060505 GOOD             USPSQD
PN1345  HISTORY     - 20090110 GOOD             WIDT
PN1345  HISTORY     - 20110101 GOOD             WIDT
PN1345
PN1345                          STATION DESCRIPTION
PN1345
PN1345'DESCRIBED BY WI HIGHWAY DEPT 1989
```

PN1345'THE STATION IS LOCATED ABOUT 11.26 KM (7.00 MI) NORTHWEST OF GREEN
PN1345'BAY, 41.8 KM (25.95 MI) SOUTHEAST OF SHAWANO, 41.8 KM (25.95 MI)
PN1345'NORTHEAST OF APPLETON. OWNERSHIP--STATE HIGHWAY R.O.W.
PN1345'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY 41 AND STATE ROUTE 29
PN1345'NORTHWEST OF GREEN BAY, GO NORTHWEST FOR 8.55 KM (5.30 MI) ON STATE
PN1345'ROUTE 29 TO THE STATION ON THE RIGHT.
PN1345'THE STATION IS A STANDARD NGS HORIZONTAL CONTROL DISK STAMPED--GREEN
PN1345'BAY GPS 1989--, SET INTO THE TOP OF A 40 CM DIAMETER CONCRETE MONUMENT
PN1345'SET FLUSH WITH THE GROUND. LOCATED 34.4 M (112.9 FT) WEST FROM THE
PN1345'CENTER-LINE OF MARLEY STREET, 53.6 M (175.9 FT) NORTHEAST FROM THE
PN1345'CENTER-LINE OF STATE ROUTE 29, 1.92 M (6.3 FT) NORTHEAST FROM A STEEL
PN1345'WITNESS POST, 0.98 M (3.2 FT) SOUTH FROM A CARSONITE WITNESS POST,
PN1345'0.98 M (3.2 FT) NORTH FROM A CARSONITE WITNESS POST, 386.24 M
PN1345'(1267.2 FT) NORTHWEST FROM THE CENTER-LINE OF THE JUNCTION OF COUNTY
PN1345'ROAD VV SOUTH AND MARLEY STREET NORTH.
PN1345
PN1345   STATION RECOVERY (1990)
PN1345
PN1345'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
PN1345'THE STATION IS LOCATED ABOUT 41.8 KM (26.0 MI) NORTHEAST OF APPLETON,
PN1345'41.8 KM (26.0 MI) SOUTHEAST OF SHAWANO AND 11.3 KM (7.0 MI) NORTHWEST
PN1345'OF GREEN BAY. OWNERSHIP--WISCONSIN DEPARTMENT OF TRANSPORTATION,
PN1345'P.O. BOX 7916, MADISON, WI 53707, PHONE 608-267-2462.
PN1345'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 41 AND STATE
PN1345'HIGHWAY 29 IN NORTHWEST GREEN BAY, GO NORTHWEST ON STATE HIGHWAY 29
PN1345'FOR 8.55 KM (5.31 MI) TO THE STATION ON THE RIGHT IN A SMALL FIELD.
PN1345'THE STATION IS LOCATED 386.2 M (1267.1 FT) NORTHWEST FROM THE CENTER
PN1345'OF THE JUNCTION OF COUNTY ROAD VV AND MARLEY STREET, 53.6 M
PN1345'(175.9 FT) NORTHEAST FROM THE CENTERLINE OF THE NORTHWEST BOUND LANES
PN1345'OF STATE HIGHWAY 29, 34.4 M (112.9 FT) WEST FROM THE CENTERLINE OF
PN1345'MARLEY STREET, 1.92 M (6.30 FT) NORTHEAST FROM A METAL WITNESS POST
PN1345'AND 0.98 M (3.22 FT) SOUTH FROM A CARSONITE WITNESS POST AND IS FLUSH
PN1345'WITH THE GROUND.
PN1345
PN1345   STATION RECOVERY (1993)
PN1345
PN1345'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1993 (RAH)
PN1345'RECOVERED AS DESCRIBED.
PN1345
PN1345   STATION RECOVERY (1997)
PN1345
PN1345'RECOVERY NOTE BY WI HIGHWAY DEPT 1997 (CSM)
PN1345'THE STATION IS LOCATED ABOUT 41.88 KM (26.00 MI) NORTHEAST OF
PN1345'APPLETON, 41.88 KM (26.00 MI) SOUTHEAST OF SHAWANO, AND 11.3 KM (7.00
PN1345'MI) NORTHWEST OF GREEN BAY ON THE NORTH RIGHT-OF-WAY OF STATE HIGHWAY
PN1345'29 IN THE VILLAGE OF HOWARD. OWNERSHIP--WISCONSIN DEPARTMENT OF
PN1345'TRANSPORTATION. TO REACH THE STATION FROM THE JUNCTION OF US HIGHWAY
PN1345'41 WITH HIGHWAY 29 IN THE NORTHWEST PART OF THE CITY OF GREEN BAY, GO
PN1345'NORTHWEST 8.1 KM (5.05 MI) ON STATE HIGHWAY 29 TO THE JUNCTION WITH
PN1345'MARLEY STREET AND MILLTOWN ROAD ON THE RIGHT, TURN RIGHT AND GO NORTH
PN1345'AND NORTHWEST 0.32 KM (0.20 MI) ON MARLEY STREET TO THE STATION ON THE
PN1345'LEFT IN A GRASSY AREA THAT IS THE OBLITERATED PORTION OF THE OLD
PN1345'MARLEY STREET. THE STATION IS A BRONZE NGS HORIZONTAL CONTROL MARK
PN1345'DISK SET IN THE TOP OF A 40-CM (16-INCH) DIAMETER, 6-FOOT-DEEP
PN1345'CONCRETE POST FLUSH WITH THE GROUND. THE STATION IS 53.6 M (175.9 FT)
PN1345'NORTHEAST OF THE CENTERLINE OF THE WESTBOUND LANES OF HIGHWAY 29, 34.4
PN1345'M (112.9 FT) WEST OF THE CENTERLINE OF MARLEY STREET, 25.7 M (84.3 FT)
PN1345'SOUTH-SOUTHEAST OF A CONCRETE MONUMENT WITH AN ALUMINUM DISK STAMPED
PN1345'--1220 HOR WIDOT--, 26.4 M (86.6 FT) SOUTH-SOUTHEAST OF A YELLOW
PN1345'WOODEN RIGHT-OF-WAY POST WITH A SURVEY MARK WITNESS SIGN, 27.4 M (89.9
PN1345'FT) SOUTH-SOUTHEAST OF A 15-CM (6-INCH) DIAMETER ELM TREE, 1.92 M
PN1345'(6.30 FT) SOUTH OF A METAL WITNESS POST, 0.95 M (3.12 FT) NORTH OF AN
PN1345'ORANGE FIBERGLASS WITNESS POST, AND 1.05 M (3.44 FT) WEST OF A WHITE

```
PN1345'PLASTIC WITNESS POST.
PN1345
PN1345                          STATION RECOVERY (2001)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2001 (DJH)
PN1345'RECOVERED AS DESCRIBED.  ---NOTE---THE STATION IS NOW 1.0 M EAST, 1.0
PN1345'M SOUTH, AND 1.0 M
PN1345'NORTH OF THREE 4X4 ORANGE PLASTIC WITNESS POSTS.
PN1345'
PN1345'
PN1345'
PN1345
PN1345                          STATION RECOVERY (2002)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002 (MRY)
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2002)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2003)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2003
PN1345'RECOVERED AS DESCRIBED.
PN1345'
PN1345
PN1345                          STATION RECOVERY (2004)
PN1345
PN1345'RECOVERY NOTE BY US POWER SQUADRON 2004 (DRB)
PN1345'RECOVERED IN GOOD CONDITION.  THE STATION IS WITHIN A TRIANGLE FORMED
PN1345'BY THREE 4X4 ORANGE GUARD POSTS.
PN1345
PN1345                          STATION RECOVERY (2006)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2006 (MRY)
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2006)
PN1345
PN1345'RECOVERY NOTE BY US POWER SQUADRON 2006 (KW)
PN1345'STATION RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2009)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2009 (EPS)
PN1345'RECOVERED AS DESCRIBED.
PN1345
PN1345                          STATION RECOVERY (2011)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2011 (EPS)
PN1345'RECOVERED AS DESCRIBED.

*** retrieval complete.
Elapsed Time = 00:00:04
```

This issue occurred because of a new scenario we now have in the database where we are taking GPS_OBS (i.e. ELEVATION.ELEV_SOURCE=”H” and ELEVATION.ELEV_TECH=”G”) that was not re-observed (with a new OBS_DATE in the GPS_OBS table; it has no OBS_DATE) and readjusting it because of NA2011. Therefore, instead of looking at the OBS_DATE here we

must look at the readjusted date in the ADJUSTMENTS table and then see if we have a later leveling date using the ADJUSTMENTS.ADJ_DATE for ADJ_ID in question and not the maximum LEV_OBS date (since there is none; it is blank).

The corrected datasheet for PN1345 will now display the following datasheet.

```
1        National Geodetic Survey,   Retrieval Date = OCTOBER  3, 2012
 PN1345 ***********************************************************************
 PN1345  CBN         -  This is a Cooperative Base Network Control Station.
 PN1345  DESIGNATION -  GREEN BAY GPS
 PN1345  PID         -  PN1345
 PN1345  STATE/COUNTY-  WI/BROWN
 PN1345  COUNTRY     -  US
 PN1345  USGS QUAD   -  ONEIDA NORTH (1992)
 PN1345
 PN1345                         *CURRENT SURVEY CONTROL
 PN1345  ______________________________________________________________________
 PN1345* NAD 83(2011) POSITION- 44 34 36.08669(N) 088 10 12.44165(W)   ADJUSTED
 PN1345* NAD 83(2011) ELLIP HT-   194.934 (meters)        (06/27/12)   ADJUSTED
 PN1345* NAD 83(2011) EPOCH   -  2010.00
 PN1345* NAVD 88 ORTHO HEIGHT -   231.176  (meters)     758.45  (feet) ADJUSTED
 PN1345  ______________________________________________________________________
 PN1345  NAD 83(2011) X  -    145,318.171 (meters)                     COMP
 PN1345  NAD 83(2011) Y  - -4,548,549.081 (meters)                     COMP
 PN1345  NAD 83(2011) Z  -  4,454,099.390 (meters)                     COMP
 PN1345  LAPLACE CORR    -         -0.49  (seconds)                    DEFLEC09
 PN1345  GEOID HEIGHT    -        -36.25  (meters)                     GEOID12A
 PN1345  DYNAMIC HEIGHT  -        231.148 (meters)      758.36  (feet) COMP
 PN1345  MODELED GRAVITY -    980,490.8   (mgal)                       NAVD 88
 PN1345
 PN1345  VERT ORDER      -  SECOND    CLASS I
 PN1345
 PN1345  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 PN1345  Type                                           Horiz  Ellip  Dist(km)
 PN1345  ----------------------------------------------------------------------
 PN1345  NETWORK                                         0.24   0.33
 PN1345  ----------------------------------------------------------------------
 PN1345  MEDIAN LOCAL ACCURACY AND DIST (057 points)   0.39   0.47     45.26
 PN1345  ----------------------------------------------------------------------
 PN1345  NOTE: Click here for information on individual local accuracy
 PN1345  values and other accuracy information.
 PN1345
 PN1345
 PN1345.The horizontal coordinates were established by GPS observations
 PN1345.and adjusted by the National Geodetic Survey in June 2012.
 PN1345
 PN1345.NAD 83(2011) refers to NAD 83 coordinates where the reference
 PN1345.frame has been affixed to the stable North American tectonic plate. See
 PN1345.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 PN1345
 PN1345.The horizontal coordinates are valid at the epoch date displayed above
 PN1345.which is a decimal equivalence of Year/Month/Day.
 PN1345
 PN1345.The orthometric height was determined by differential leveling and
 PN1345.adjusted by the WI DEPT OF TRANSP
 PN1345.in May 2012.
 PN1345
 PN1345.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 PN1345
 PN1345.The Laplace correction was computed from DEFLEC09 derived deflections.
 PN1345
```

```
PN1345.The ellipsoidal height was determined by GPS observations
PN1345.and is referenced to NAD 83.
PN1345
PN1345.The dynamic height is computed by dividing the NAVD 88
PN1345.geopotential number by the normal gravity value computed on the
PN1345.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
PN1345.degrees latitude (g = 980.6199 gals.).
PN1345
PN1345.The modeled gravity was interpolated from observed gravity values.
PN1345
PN1345. The following values were computed from the NAD 83(2011) position.
PN1345
PN1345;                    North         East     Units Scale Factor Converg.
PN1345;SPC WI C     -    84,237.787   745,319.500   MT  0.99995429   +1 17 28.0
PN1345;SPC WI C     -   276,370.14  2,445,269.06   sFT  0.99995429   +1 17 28.0
PN1345;UTM  16      - 4,936,593.711   407,099.795   MT  0.99970613   -0 49 16.8
PN1345
PN1345!             -  Elev Factor  x  Scale Factor =   Combined Factor
PN1345!SPC WI C     -   0.99996944  x   0.99995429  =   0.99992373
PN1345!UTM  16      -   0.99996944  x   0.99970613  =   0.99967558
PN1345
PN1345                          SUPERSEDED SURVEY CONTROL
PN1345
PN1345  NAD 83(2007)-  44 34 36.08675(N)    088 10 12.44242(W) AD(       ) 0
PN1345  ELLIP H (02/10/07)  194.969  (m)                       GP(       )
PN1345  NAD 83(1997)-  44 34 36.08662(N)    088 10 12.44265(W) AD(       ) A
PN1345  ELLIP H (04/28/99)  194.949  (m)                       GP(       ) 3 1
PN1345  NAD 83(1991)-  44 34 36.08553(N)    088 10 12.44144(W) AD(       ) B
PN1345  ELLIP H (06/11/91)  195.045  (m)                       GP(       ) 4 1
PN1345  NAVD 88 (07/26/07)  231.12   (m)  GEOID03 model used   GPS OBS
PN1345  NAVD 88 (06/11/03)  231.15   (m)  GEOID99 model used   GPS OBS
PN1345  NAVD 88 (04/28/99)  231.1    (m)  GEOID96 model used   GPS OBS
PN1345  NGVD 29 (06/11/91)  231.1    (m)  UNKNOWN model used   GPS OBS
PN1345
PN1345.Superseded values are not recommended for survey control.
PN1345
PN1345.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
PN1345.See file dsdata.txt to determine how the superseded data were derived.
PN1345
PN1345_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDQ0709936593(NAD 83)
PN1345
PN1345_MARKER: DH = HORIZONTAL CONTROL DISK
PN1345_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
PN1345_SP_SET: CONCRETE POST
PN1345_STAMPING: GREEN BAY GPS 1989
PN1345_MARK LOGO: NGS
PN1345_PROJECTION: FLUSH
PN1345_MAGNETIC: N = NO MAGNETIC MATERIAL
PN1345_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
PN1345_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
PN1345+SATELLITE: SATELLITE OBSERVATIONS - January 01, 2011
PN1345
PN1345  HISTORY     - Date     Condition        Report By
PN1345  HISTORY     - 1989     MONUMENTED       WIHD
PN1345  HISTORY     - 19900814 GOOD             NGS
PN1345  HISTORY     - 19930524 GOOD             NOS
PN1345  HISTORY     - 19970814 GOOD             WIHD
PN1345  HISTORY     - 20010609 GOOD             WIDT
PN1345  HISTORY     - 20020611 GOOD             JCLS
PN1345  HISTORY     - 20020614 GOOD             JCLS
PN1345  HISTORY     - 20030709 GOOD             WIDT
PN1345  HISTORY     - 20040324 GOOD             USPSQD
PN1345  HISTORY     - 20060421 GOOD             JCLS
```

```
PN1345  HISTORY     - 20060505 GOOD            USPSQD
PN1345  HISTORY     - 20090110 GOOD            WIDT
PN1345  HISTORY     - 20110101 GOOD            WIDT
PN1345
PN1345                          STATION DESCRIPTION
PN1345
PN1345'DESCRIBED BY WI HIGHWAY DEPT 1989
PN1345'THE STATION IS LOCATED ABOUT 11.26 KM (7.00 MI) NORTHWEST OF GREEN
PN1345'BAY, 41.8 KM (25.95 MI) SOUTHEAST OF SHAWANO, 41.8 KM (25.95 MI)
PN1345'NORTHEAST OF APPLETON.  OWNERSHIP--STATE HIGHWAY R.O.W.
PN1345'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY 41 AND STATE ROUTE 29
PN1345'NORTHWEST OF GREEN BAY, GO NORTHWEST FOR 8.55 KM (5.30 MI) ON STATE
PN1345'ROUTE 29 TO THE STATION ON THE RIGHT.
PN1345'THE STATION IS A STANDARD NGS HORIZONTAL CONTROL DISK STAMPED--GREEN
PN1345'BAY GPS 1989--, SET INTO THE TOP OF A 40 CM DIAMETER CONCRETE MONUMENT
PN1345'SET FLUSH WITH THE GROUND.  LOCATED 34.4 M (112.9 FT) WEST FROM THE
PN1345'CENTER-LINE OF MARLEY STREET, 53.6 M (175.9 FT) NORTHEAST FROM THE
PN1345'CENTER-LINE OF STATE ROUTE 29, 1.92 M (6.3 FT) NORTHEAST FROM A STEEL
PN1345'WITNESS POST, 0.98 M (3.2 FT) SOUTH FROM A CARSONITE WITNESS POST,
PN1345'0.98 M (3.2 FT) NORTH FROM A CARSONITE WITNESS POST, 386.24 M
PN1345'(1267.2 FT) NORTHWEST FROM THE CENTER-LINE OF THE JUNCTION OF COUNTY
PN1345'ROAD VV SOUTH AND MARLEY STREET NORTH.
PN1345
PN1345                          STATION RECOVERY (1990)
PN1345
PN1345'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
PN1345'THE STATION IS LOCATED ABOUT 41.8 KM (26.0 MI) NORTHEAST OF APPLETON,
PN1345'41.8 KM (26.0 MI) SOUTHEAST OF SHAWANO AND 11.3 KM (7.0 MI) NORTHWEST
PN1345'OF GREEN BAY.  OWNERSHIP--WISCONSIN DEPARTMENT OF TRANSPORTATION,
PN1345'P.O. BOX 7916, MADISON, WI 53707, PHONE 608-267-2462.
PN1345'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 41 AND STATE
PN1345'HIGHWAY 29 IN NORTHWEST GREEN BAY, GO NORTHWEST ON STATE HIGHWAY 29
PN1345'FOR 8.55 KM (5.31 MI) TO THE STATION ON THE RIGHT IN A SMALL FIELD.
PN1345'THE STATION IS LOCATED 386.2 M (1267.1 FT) NORTHWEST FROM THE CENTER
PN1345'OF THE JUNCTION OF COUNTY ROAD VV AND MARLEY STREET, 53.6 M
PN1345'(175.9 FT) NORTHEAST FROM THE CENTERLINE OF THE NORTHWEST BOUND LANES
PN1345'OF STATE HIGHWAY 29, 34.4 M (112.9 FT) WEST FROM THE CENTERLINE OF
PN1345'MARLEY STREET, 1.92 M (6.30 FT) NORTHEAST FROM A METAL WITNESS POST
PN1345'AND 0.98 M (3.22 FT) SOUTH FROM A CARSONITE WITNESS POST AND IS FLUSH
PN1345'WITH THE GROUND.
PN1345
PN1345                          STATION RECOVERY (1993)
PN1345
PN1345'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1993 (RAH)
PN1345'RECOVERED AS DESCRIBED.
PN1345
PN1345                          STATION RECOVERY (1997)
PN1345
PN1345'RECOVERY NOTE BY WI HIGHWAY DEPT 1997 (CSM)
PN1345'THE STATION IS LOCATED ABOUT 41.88 KM (26.00 MI) NORTHEAST OF
PN1345'APPLETON, 41.88 KM (26.00 MI) SOUTHEAST OF SHAWANO, AND 11.3 KM (7.00
PN1345'MI) NORTHWEST OF GREEN BAY ON THE NORTH RIGHT-OF-WAY OF STATE HIGHWAY
PN1345'29 IN THE VILLAGE OF HOWARD.  OWNERSHIP--WISCONSIN DEPARTMENT OF
PN1345'TRANSPORTATION.  TO REACH THE STATION FROM THE JUNCTION OF US HIGHWAY
PN1345'41 WITH HIGHWAY 29 IN THE NORTHWEST PART OF THE CITY OF GREEN BAY, GO
PN1345'NORTHWEST 8.1 KM (5.05 MI) ON STATE HIGHWAY 29 TO THE JUNCTION WITH
PN1345'MARLEY STREET AND MILLTOWN ROAD ON THE RIGHT, TURN RIGHT AND GO NORTH
PN1345'AND NORTHWEST 0.32 KM (0.20 MI) ON MARLEY STREET TO THE STATION ON THE
PN1345'LEFT IN A GRASSY AREA THAT IS THE OBLITERATED PORTION OF THE OLD
PN1345'MARLEY STREET.  THE STATION IS A BRONZE NGS HORIZONTAL CONTROL MARK
PN1345'DISK SET IN THE TOP OF A 40-CM (16-INCH) DIAMETER, 6-FOOT-DEEP
PN1345'CONCRETE POST FLUSH WITH THE GROUND.  THE STATION IS 53.6 M (175.9 FT)
PN1345'NORTHEAST OF THE CENTERLINE OF THE WESTBOUND LANES OF HIGHWAY 29, 34.4
```

```
PN1345'M (112.9 FT) WEST OF THE CENTERLINE OF MARLEY STREET, 25.7 M (84.3 FT)
PN1345'SOUTH-SOUTHEAST OF A CONCRETE MONUMENT WITH AN ALUMINUM DISK STAMPED
PN1345'--1220 HOR WIDOT--, 26.4 M (86.6 FT) SOUTH-SOUTHEAST OF A YELLOW
PN1345'WOODEN RIGHT-OF-WAY POST WITH A SURVEY MARK WITNESS SIGN, 27.4 M (89.9
PN1345'FT) SOUTH-SOUTHEAST OF A 15-CM (6-INCH) DIAMETER ELM TREE, 1.92 M
PN1345'(6.30 FT) SOUTH OF A METAL WITNESS POST, 0.95 M (3.12 FT) NORTH OF AN
PN1345'ORANGE FIBERGLASS WITNESS POST, AND 1.05 M (3.44 FT) WEST OF A WHITE
PN1345'PLASTIC WITNESS POST.
PN1345
PN1345                          STATION RECOVERY (2001)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2001 (DJH)
PN1345'RECOVERED AS DESCRIBED.  ---NOTE---THE STATION IS NOW 1.0 M EAST, 1.0
PN1345'M SOUTH, AND 1.0 M
PN1345'NORTH OF THREE 4X4 ORANGE PLASTIC WITNESS POSTS.
PN1345'
PN1345'
PN1345'
PN1345
PN1345                          STATION RECOVERY (2002)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002 (MRY)
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2002)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2003)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2003
PN1345'RECOVERED AS DESCRIBED.
PN1345'
PN1345
PN1345                          STATION RECOVERY (2004)
PN1345
PN1345'RECOVERY NOTE BY US POWER SQUADRON 2004 (DRB)
PN1345'RECOVERED IN GOOD CONDITION.  THE STATION IS WITHIN A TRIANGLE FORMED
PN1345'BY THREE 4X4 ORANGE GUARD POSTS.
PN1345
PN1345                          STATION RECOVERY (2006)
PN1345
PN1345'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2006 (MRY)
PN1345'RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2006)
PN1345
PN1345'RECOVERY NOTE BY US POWER SQUADRON 2006 (KW)
PN1345'STATION RECOVERED IN GOOD CONDITION.
PN1345
PN1345                          STATION RECOVERY (2009)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2009 (EPS)
PN1345'RECOVERED AS DESCRIBED.
PN1345
PN1345                          STATION RECOVERY (2011)
PN1345
PN1345'RECOVERY NOTE BY WI DEPT OF TRANSP 2011 (EPS)
PN1345'RECOVERED AS DESCRIBED.

*** retrieval complete.
Elapsed Time = 00:00:10
```

Version 7.89.4 released at 10:37am on 09/14/2012

This release includes 2 main changes:

(1) The intg.w program has been updated to use the GEOID12A grids versus the GEOID12 grids it used previously. Several modules are common to intg.w and datasheet95.w and these modules were incorporated into datasheet95.w. Note: datasheet95.w calls the intg.w program to calculate/interpolate the geoid height on the datasheets. The latest version of intg.w is V3.17.

(2) A change to the best (publishable) position algorithm. Eighteen CORS stations have only IGS08 positions/coordinates and no NAD83 (2011) positions/coordinates and thus they are no longer publicly publishable.

The 18 CORS stations that are no longer publicly publishable are:

TEGU
INEG
JAMA
GALA
ESTI
MANA
BARB
CIC1
GUAT
SLOR
SSIA
BRMU
TEG1
ELEN
HUEH
GCGT
CBSB
CRCC

These CORS sites will generate the new reason code below on the datasheet output.

```
I        No NAD83 coordinates available, only IGS08 coordinates
```

An example of a CORS site that generates this message can be seen below.

```
DATABASE = DEVTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.89.4

 *** retrieval complete.
 Elapsed Time = 00:00:01



 ------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
```

```
-   associated with a horizontal control Nonpub code shown under            -
-   the heading 'H' and/or a vertical control Nonpub code shown under       -
-   the heading 'v'                                                         -
-                                                                           -
-   The format of the records are as follows:                               -
-       Pid  = Station Permanent Identifier)                                -
-       Name = Station Designation                                          -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)       -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)      -
-       O    = Horizontal Order                                             -
-       o    = Vertical Order                                               -
-       H    = Horizontal Nonpub Code                                       -
-       v    = Vertical Nonpub Code                                         -
-                                                                           -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                           -
-       -------- -------------------------------                            -
-       A        CORS site is not active                                    -
-       B        Station is a RBN antenna                                   -
-       C        Not a publishable datum within the state                   -
-       D        No descriptive text available                              -
-       I        No NAD83 coordinates available, only IGS08 coordinates     -
-       L        CORS L1 Phase Center is not publishable                    -
-       N        No geodetic control                                        -
-       O        Outside NGS publication area                               -
-       P        Purpose of position is not for network control             -
-       R        Restricted position                                        -
-       T        Station is a temporary point/bench mark                    -
-       V        Station is a VOR antenna                                   -
-       W        Weakly determined position                                 -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
                                                                            -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                             -
-       -------- -------------------------------                            -
-       A        CORS site is not active                                    -
-       D        No descriptive text available                              -
-       F        Bench mark not yet adjusted                                -
-       N        No geodetic control                                        -
-       L        CORS L1 Phase Center is not publishable                    -
-       O        Outside NGS publication area                               -
-       R        Restricted elevation                                       -
-       S        Mark is in a subsidence area                               -
-       T        Station is a temporary point/bench mark                    -
-       X        Surface mark reported destroyed                            -
-       Y        Surface and underground mark reported destroyed            -
-       Z        Presumed destroyed                                         -
-                                                                           -
-                                                                           -
-   NOTE - Stations found in this listing may still have a valid            -
-          datasheet produced by use of other publishable values.           -
-          For example, an ADJUSTED height may be non-publishable           -
-          but a good GPS height might be found on the datasheet.           -
-          This listing does not imply that values found on the datasheet   -
-          are restricted.  If it's on the datasheet, use it.               -
-                                                                           -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
>AI7441 GUATEMALA CITY CORS ARP       14 35 25.4/090 31 12.6           A   I
```

Version 7.89.3.1 released at 3:12pm on 09/11/2012

This release fixes 3 issues. With the first issue, some datasheets in the dynamic regions that the EPOCH line was on were displaying the line with no date on it. An example of this is shown below.

```
PROGRAM = datasheet95, VERSION = 7.89.3
1        National Geodetic Survey,   Retrieval Date = AUGUST 22, 2012
 AA1839 ***********************************************************************
 AA1839  DESIGNATION -  CP 5 1
 AA1839  PID         -  AA1839
 AA1839  STATE/COUNTY-  LA/CALCASIEU
 AA1839  COUNTRY     -  US
 AA1839  USGS QUAD   -  SHOATS CREEK (1982)
 AA1839
 AA1839                        *CURRENT SURVEY CONTROL
 AA1839  ______________________________________________________________________
 AA1839* NAD 83(2011) POSITION- 30 22 58.06631(N) 093 40 22.50869(W)   ADJUSTED
 AA1839* NAD 83(2011) ELLIP HT-   -17.729 (meters)        (06/27/12)   ADJUSTED
 AA1839* NAD 83(2011) EPOCH    -  2010.00
 AA1839* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 AA1839* NAVD 88 EPOCH        -
 AA1839  **This station is located in a suspected subsidence area (see below).
 AA1839  ______________________________________________________________________
 AA1839  NAD 83(2011) X  -   -352,775.586 (meters)                    COMP
 AA1839  NAD 83(2011) Y  - -5,495,590.042 (meters)                    COMP
 AA1839  NAD 83(2011) Z  -  3,207,043.519 (meters)                    COMP
 AA1839  LAPLACE CORR    -          0.69  (seconds)                   DEFLEC09
 AA1839  GEOID HEIGHT    -        -27.38  (meters)                    GEOID12
```

The datasheet should not have printed out in the first place, as it is a mark within the dynamic regions/subsidence areas. Early on in the program, whenever a mark is not publishable, the UID and the ADJ_ID (and several other fields) get blanked out. When we went to print out the datasheet, the functions that were used later on to determine if the mark was in a dynamic region/subsidence area didn't return the correct value when the UID and ADJ_ID were blanked out. This is now corrected.

For the second issue when one retrieved datasheets by_stream (i.e. by county, area, radius) and not as a single mark (i.e. by single PID) for some Pacific islands (such as Palau), one might get a single datasheet and then a core dump occurred.

This issue was caused by a global versus local variable issue in the https://source.ngs.noaa.gov/svn/repos/commonLib/fortlib/tags/release-3.1/geoid_egm08.f Fortran module for the geoid_egm08 program which is then in turn called by datasheet95. This issue was corrected.

For the third issue it was noticed that on some datasheets that the agency name was not present on the differential leveling message paragraph. An example of this is the datasheet for FS0657 (shown below):

```
DATABASE = DEVTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.89.3
1        National Geodetic Survey,   Retrieval Date = AUGUST 23, 2012
 FS0657 ***********************************************************************
 FS0657  DESIGNATION -  GLOW
 FS0657  PID         -  FS0657
```

```
FS0657  STATE/COUNTY-  AZ/MOHAVE
FS0657  COUNTRY     -  US
FS0657  USGS QUAD   -  SPIRIT MTN NE (1959)
FS0657
FS0657                         *CURRENT SURVEY CONTROL
FS0657  ______________________________________________________________________
FS0657* NAD 83(1992) POSITION- 35 28 30.99333(N) 114 36 56.94920(W)   ADJUSTED
FS0657* NAVD 88 ORTHO HEIGHT -   291.705  (meters)     957.04  (feet) POSTED
FS0657  ______________________________________________________________________
FS0657  LAPLACE CORR    -          5.47  (seconds)                    DEFLEC09
FS0657  GEOID HEIGHT    -        -29.40  (meters)                     GEOID12A
FS0657  DYNAMIC HEIGHT  -        291.41  (meters)      956.1   (feet) COMP
FS0657  MODELED GRAVITY -    979,621.1   (mgal)                       NAVD 88
FS0657
FS0657  HORZ ORDER      -  FIRST
FS0657  VERT ORDER      -  * POSTED, Code D , SEE BELOW
FS0657
FS0657.The horizontal coordinates were established by classical geodetic methods
FS0657.and adjusted by the National Geodetic Survey in August 1993.
FS0657.
FS0657.The orthometric height was determined by differential leveling
FS0657.and adjusted by the  in 1992.
FS0657
FS0657.* This is a POSTED BENCH MARK height.  Code D indicates a distribution
FS0657.rate of 3.1 thru 4.0 mm/km.
FS0657
FS0657.The Laplace correction was computed from DEFLEC09 derived deflections.
FS0657
FS0657.The dynamic height is computed by dividing the NAVD 88
FS0657.geopotential number by the normal gravity value computed on the
FS0657.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
FS0657.degrees latitude (g = 980.6199 gals.).
FS0657
FS0657.The modeled gravity was interpolated from observed gravity values.
FS0657
FS0657. The following values were computed from the NAD 83(1992) position.
FS0657
FS0657;                    North         East     Units Scale Factor Converg.
FS0657;SPC AZ W     -   496,659.509   134,784.938   MT  1.00000939   -0 30 09.0
FS0657;SPC AZ W     - 1,629,460.33    442,207.80   iFT  1.00000939   -0 30 09.0
FS0657;SPC NV E     - 8,080,886.233   287,801.450   MT  0.99999497   +0 33 41.5
FS0657;SPC NV E     -26,512,040.92    944,228.59   sFT  0.99999497   +0 33 41.5
FS0657;UTM  11      - 3,928,364.268   716,315.532   MT  1.00017667   +1 23 03.1
FS0657
FS0657!             -  Elev Factor  x  Scale Factor =   Combined Factor
FS0657!SPC AZ W     -   0.99995883  x   1.00000939  =   0.99996822
FS0657!SPC NV E     -   0.99995883  x   0.99999497  =   0.99995380
FS0657!UTM  11      -   0.99995883  x   1.00017667  =   1.00013549
FS0657
FS0657:                Primary Azimuth Mark                    Grid Az
FS0657:SPC AZ W     -  MOUNT DAVIS                           350 25 07.5
FS0657:SPC NV E     -  MOUNT DAVIS                           349 21 17.0
FS0657:UTM  11      -  MOUNT DAVIS                           348 31 55.4
FS0657
FS0657|---------------------------------------------------------------------|
FS0657| PID    Reference Object                    Distance      Geod. Az   |
FS0657|                                                          dddmmss.s |
FS0657| FS0658 T29S R22W SECS 10 15 1/4 COR       11.918 METERS 16459      |
FS0657| FS0659 GLOW RM 1                          10.642 METERS 24846      |
FS0657| FS1170 MOUNT DAVIS                       APPROX. 7.0 KM 3495458.5  |
FS0657|---------------------------------------------------------------------|
FS0657
FS0657                         SUPERSEDED SURVEY CONTROL
```

```
FS0657
FS0657  NAD 83(1986)-  35 28 30.99320(N)    114 36 56.93936(W) AD(       ) 1
FS0657  NAD 27      -  35 28 31.01600(N)    114 36 54.04900(W) AD(       ) 1
FS0657  NGVD 29 (??/??/92)  290.996  (m)          954.71   (f) ADJ UNCH    1 2
FS0657
FS0657.Superseded values are not recommended for survey control.
FS0657
FS0657.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FS0657.See file dsdata.txt to determine how the superseded data were derived.
FS0657
FS0657_U.S. NATIONAL GRID SPATIAL ADDRESS: 11SQV1631528364(NAD 83)
FS0657
FS0657_MARKER: DS = TRIANGULATION STATION DISK
FS0657_SETTING: 80 = SET IN A BOULDER
FS0657_SP_SET: BOULDER
FS0657_STAMPING: GLOW 1934
FS0657_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
FS0657+STABILITY: SURFACE MOTION
FS0657
FS0657  HISTORY     - Date     Condition        Report By
FS0657  HISTORY     - 1934     MONUMENTED       CGS
FS0657  HISTORY     - 1941     GOOD             CGS
FS0657  HISTORY     - 1950     GOOD             CGS
FS0657
FS0657                          STATION DESCRIPTION
FS0657
FS0657'DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (CP)
FS0657'STATION IS ON TOP OF SMALL KNOLL ABOUT 120 FEET N OF THE
FS0657'SEARCHLIGHT FERRY ROAD.  KNOLL IS 4.9 MILES BY ROAD E OF
FS0657'SEARCHLIGHT FERRY.  STATION IS 11.918 METERS N OF GENERAL
FS0657'LAND OFFICE 1/4 CORNER SEC. MARK MARKING S10 S15 T 29 S,
FS0657'R 22 W, NEAR GILA AND SALT RIVERS.
FS0657'
FS0657'THE STATION MARK IS A STANDARD BRONZE DISK WEDGED IN A DRILL
FS0657'HOLE IN A BOULDER.
FS0657'
FS0657'REFERENCE MARK NO. 1 IS A STANDARD BRONZE DISK WEDGED IN A
FS0657'DRILL HOLE IN OUTCROPPING BEDROCK.
FS0657'
FS0657'U.S.C. AND G.S. BENCH MARK R-52 IS 200 YARDS E OF THE S SIDE
FS0657'OF ROAD AND WAS USED AS AN AZIMUTH MARK.  IT IS A STANDARD
FS0657'DISK SET IN CONCRETE.
FS0657'
FS0657'REACH FROM SEARCHLIGHT FERRY BY GOING E ON THE ROAD TO CHLORIDE
FS0657'4.9 MILES TO THE KNOLL ON THE N OF THE ROAD.  THE GENERAL
FS0657'LAND OFFICE PIPE CAN BE SEEN FROM THE ROAD AT THIS POINT.
FS0657
FS0657                          STATION RECOVERY (1941)
FS0657
FS0657'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1941 (EHS)
FS0657'THIS STATION WAS RECOVERED AND FOUND TO BE IN GOOD CONDITION.
FS0657'PARTY DID NOT HAVE A COPY OF THE ORIGINAL DESCRIPTION AT THE
FS0657'TIME OF RECOVERY.
FS0657'
FS0657'STATION IS A STANDARD DISK SET IN TOP OF SMALL BOULDER,
FS0657'HORIZONTALLY.  IT IS ON THE RIGHT-OF-WAY OF ROAD TO AERIAL
FS0657'FERRY.  ON TOP OF A NARROW GRAVEL RIDGE ABOUT 500 FEET LONG.
FS0657'ABOUT 200 FEET EAST OF THE WEST END OF THE RIDGE.  175 FEET
FS0657'NORTH OF THE CENTER LINE OF THE ROAD AND ABOUT 4 FEET WEST OF
FS0657'A 4 X 4 INCH WHITE WOODEN POST PROJECTING ABOUT 2 FEET.
FS0657'
FS0657'R.M. NO. 1 IS A STANDARD DISK SET HORIZONTALLY IN TOP OF A
FS0657'ROCK OUTCROP.  IT IS 36 FEET WEST OF THE STATION AND ABOUT
```

```
FS0657'55 YARDS NORTH OF THE CENTER LINE OF THE ROAD.
FS0657'
FS0657'TO REACH FROM CHLORIDE, ARIZONA GO SOUTHWESTERLY ON ARIZONA
FS0657'STATE HIGHWAY 62 FOR 3.6 MILES TO U.S. HIGHWAY 93.  TURN
FS0657'RIGHT, NORTHERLY AND CONTINUE ON U.S. HIGHWAY 93 FOR 9.0
FS0657'MILES TO INTERSECTION OF HIGHWAY WITH ROAD TO AERIAL FERRY.
FS0657'THENCE CONTINUE ON ROAD TO AERIAL FERRY FOR 18.4 MILES TO
FS0657'STATION SITE.
FS0657
FS0657                          STATION RECOVERY (1950)
FS0657
FS0657'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1950
FS0657'25.3 MI W FROM GRASSHOPPER JUNCTION.
FS0657'7.4 MILES NORTHWEST ALONG U.S. HIGHWAY 93 FROM THE JUNCTION OF
FS0657'STATE HIGHWAY 62 AT GRASSHOPPER JUNCTION, THENCE 17.9 MILES WEST
FS0657'ALONG A DIRT ROAD LEADING TO THE OLD AERIAL FERRY LANDING, ON TOP
FS0657'OF THE APPROXIMATE CENTER OF AND ABOUT 94 YARDS NORTHEAST OF THE
FS0657'SOUTHWEST END OF A PROMINENT GRAVEL RIDGE ABOUT 250 YARDS LONG,
FS0657'IN THE TOP OF A SMALL BOULDER PROJECTING 0.2 FOOT ABOVE THE GROUND,
FS0657'168 1/2 FEET NORTHWEST OF THE CENTER LINE OF THE ROAD, 3.4 FEET
FS0657'WEST OF A WITNESS POST, AND ABOUT 12 FEET HIGHER THAN THE ROAD.

*** retrieval complete.
Elapsed Time = 00:00:02
```

This issue is now corrected.

Version 7.89.3 released at 10:29am on 08/23/2012

This release fixes an issue for archival datasheets. When the NGS webmaster went to create the monthly datasheet archive for the state of Alaska, he got two datasheets for AK and then a core dump. The core dump happened on PID TT3085. This was the output he got for TT3085.

Command: datasheet95 TT3085

Output:

```
PROGRAM = datasheet95, VERSION = 7.89.2
1        National Geodetic Survey,   Retrieval Date = AUGUST 16, 2012
 TT3085 ***********************************************************************
 TT3085  DESIGNATION -  1 C USLM
 TT3085  PID         -  TT3085
 TT3085  STATE/COUNTY-  AK/NOME CENSUS
 TT3085  COUNTRY     -  US
 TT3085  USGS QUAD   -  NOME C-1
 TT3085
 TT3085                        *CURRENT SURVEY CONTROL
 TT3085  ______________________________________________________________________
 TT3085* NAD 83(1986) POSITION- 64 30 21.28674(N) 165 25 57.81709(W)   ADJUSTED
 TT3085* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 TT3085  ______________________________________________________________________
 TT3085  LAPLACE CORR    -          3.37  (seconds)                     DEFLEC09
 TT3085  GEOID HEIGHT    -          5.25  (meters)                      GEOID12
 TT3085  HORZ ORDER      -  SECOND
Segmentation Fault (core dumped)
```

This has been corrected in this version.

Version 7.89.2 released at 3:53pm on 08/16/2012

This release covers 2 minor changes:
(1) a fix where the Horiz value in the network accuracy on datasheets does not always match that of the Horiz value on the lna_ret output and should.

An example of this non-matching occurring is with the datasheet for UW0219

```
UW0219  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
UW0219  Type                                          Horiz  Ellip  Dist(km)
UW0219  ----------------------------------------------------------------------
UW0219  NETWORK                                        8.19  17.93
UW0219  ----------------------------------------------------------------------
UW0219  MEDIAN LOCAL ACCURACY AND DIST (016 points)    8.27  17.93     73.85
UW0219  ----------------------------------------------------------------------
```

And the lna_ret output for UW0219

```
UW0219  Type/PID  Horz  Ellip  Dist(km)    StdN    StdE    Stdh          CorrNE
UW0219  ------------------------------------------------------------------------
UW0219  NETWORK   8.26 17.93      0.00    2.48    3.89    9.15     +0.26232390
UW0219  ------------------------------------------------------------------------
```

It was found that the datasheet output was the one that was incorrect due to using the atoi() function to convert a string to an integer versus correctly using the atof() function to convert the string to a double for the network_correlation_coefficient variable which is one of the parameters needed to calculate Horiz via the leenhout_check() function.

datasheet95 as of this release has now been corrected to display 8.26 for the Horiz value as shown below:

```
UW0219  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
UW0219  Type                                          Horiz  Ellip  Dist(km)
UW0219  ----------------------------------------------------------------------
UW0219  NETWORK                                        8.26  17.93
UW0219  ----------------------------------------------------------------------
UW0219  MEDIAN LOCAL ACCURACY AND DIST (016 points)    8.27  17.93     73.85
UW0219  ----------------------------------------------------------------------
```

(2) While not an issue at present, the geoid_abbreviation variable was changed from eight characters in length to nine characters in length in the ret_gh_srce_def.c function. Nine characters were needed – eight for the data and one for the null character. This was a potential problem we could have run into later on in the code.

Version 7.89.1 released at 4:38am on 07/13/2012

This release fixes the issue of superseded heights outside of the dynamic regions/subsidence areas not appearing in the SUPERSEDED SURVEY CONTROL section of the datasheet.

An example of the incorrect output was for PID DF9871.

```
DF9871                  SUPERSEDED SURVEY CONTROL
DF9871
DF9871.No superseded survey control is available for this station.
DF9871
```

This has now been corrected to be:

```
DF9871                  SUPERSEDED SURVEY CONTROL
DF9871
DF9871  NAVD 88 (04/20/07)  287.043  (m)        941.74   (f) SUPERSEDED  2 1
DF9871  NAVD 88 (02/25/04)  287.011  (m)        941.64   (f) SUPERSEDED  2 1
DF9871
```

Version 7.89 released at 3:46pm on 07/12/2012

This release covers the changes requested for the Gulf dynamic regions/subsidence areas. In completing this release, some of the flags/conditions that turned on and off messages were not quite what the document stated. Therefore the actual flags/conditions for the messages requested will be included in the below. First we have some definitions to go through.

A dynamic region/subsidence area is an area known or suspected of subsidence, uplift, or other tectonic vertical motion. In 2005, there was a single dynamic region in the state of LA that was defined with a *latitude/longitude polygon*. In 2007 the LA dynamic region polygon was put aside in favor of defining the dynamic regions in the state of LA with a series of *three minimum/maximum latitude/longitude areas*. As of 2012 (this release) the dynamic regions now spans the lower parts of Gulf Coast states of AL, FL, MS, and LA and is comprised of several *minimum/maximum latitude/longitude areas*.

These regions are comprised of the following sub-areas shown in Table 1.

Table 1: Dynamic Regions/Subsidence Areas of the Gulf Coast

State	Latitude Range	Longitude Range
LA	latitude ≤ N303432	longitude ≥ W0912738
LA	latitude ≤ N304850	W0903401 ≤ longitude ≤ W0912738
LA	latitude ≤ N310002	longitude ≤ W0903401
MS	latitude ≤ N320608	W0882650 ≤ longitude ≤ W0910952
AL	latitude ≤ N312344	longitude ≥ W0880000
FL	N301743 ≤ latitude ≤ N303716	longitude ≥ W0870744

In a dynamic region/subsidence area, datasheets are publicly publishable for control points in specific projects (a.k.a. adjustment identifiers). If a control point is not part of these specific projects, then a public datasheet also includes the reason that the elevation for this control point should not be used in project as shown in the datasheet for AU2715 below.

```
DATABASE = DEVTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JUNE 14, 2012
 AU2715 ***********************************************************************
 AU2715  DESIGNATION -  BLOUNT
 AU2715  PID         -  AU2715
 AU2715  STATE/COUNTY-  LA/ORLEANS
 AU2715  COUNTRY     -  US
 AU2715  USGS QUAD   -  NEW ORLEANS EAST (1992)
 AU2715
 AU2715                          *CURRENT SURVEY CONTROL
 AU2715  ______________________________________________________________________
 AU2715* NAD 83(1992) POSITION- 29 59 16.91707(N) 090 04 04.03998(W)   ADJUSTED
 AU2715* NAD 83(1992) ELLIP HT-   -26.558 (meters)        (01/21/03)   ADJUSTED
 AU2715* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 AU2715  **This station is located in a suspected subsidence area (see below).
 AU2715  ______________________________________________________________________
 AU2715  NAD 83(1992) X  -     -6,541.453 (meters)                     COMP
 AU2715  NAD 83(1992) Y  - -5,528,892.959 (meters)                     COMP
 AU2715  NAD 83(1992) Z  -  3,169,211.502 (meters)                     COMP
```

```
AU2715  LAPLACE CORR    -          0.04  (seconds)                    DEFLEC09
AU2715  GEOID HEIGHT    -        -26.10  (meters)                     GEOID09
AU2715  MODELED GRAVITY -    979,315.7   (mgal)                       NAVD 88
AU2715
AU2715  HORZ ORDER      -  FIRST
AU2715  VERT ORDER      -  FIRST     CLASS II (See Below)
AU2715  ELLP ORDER      -  FOURTH    CLASS II
AU2715
AU2715.The horizontal coordinates were established by GPS observations
AU2715.and adjusted by the National Geodetic Survey in January 1993.
AU2715
AU2715 ** This station is in an area of known vertical motion.  If an
AU2715 ** orthometric height was ever established but is not available
AU2715 ** in the current survey control section, the orthometric height
AU2715 ** is considered suspect.  Suspect heights are available in the
AU2715 ** superseded section only if requested.
AU2715
AU2715.The vertical order pertains to the NGVD 29 superseded value.
AU2715
AU2715.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AU2715
AU2715.The Laplace correction was computed from DEFLEC09 derived deflections.
AU2715
AU2715.The ellipsoidal height was determined by GPS observations
AU2715.and is referenced to NAD 83.
AU2715
AU2715.The modeled gravity was interpolated from observed gravity values.
AU2715
AU2715. The following values were computed from the NAD 83(1992) position.
AU2715
AU2715;                    North         East     Units Scale Factor Converg.
AU2715;SPC LA S     -   165,614.205 1,122,110.777   MT  0.99992577   +0 37 58.0
AU2715;SPC LA S     -   543,352.60  3,681,458.44   sFT  0.99992577   +0 37 58.0
AU2715;UTM  15      - 3,321,079.437   782,901.138   MT  1.00058755   +1 27 59.6
AU2715;UTM  16      - 3,321,422.241   204,012.094   MT  1.00068105   -1 32 04.0
AU2715
AU2715!             -  Elev Factor  x  Scale Factor =   Combined Factor
AU2715!SPC LA S     -   1.00000417  x   0.99992577  =   0.99992994
AU2715!UTM  15      -   1.00000417  x   1.00058755  =   1.00059172
AU2715!UTM  16      -   1.00000417  x   1.00068105  =   1.00068522
AU2715
AU2715:                Primary Azimuth Mark                     Grid Az
AU2715:SPC LA S     -  NEW ORLEANS TV STA WGNO TOWER            173 56 45.5
AU2715:UTM  15      -  NEW ORLEANS TV STA WGNO TOWER            173 06 43.9
AU2715:UTM  16      -  NEW ORLEANS TV STA WGNO TOWER            176 06 47.5
AU2715
AU2715|---------------------------------------------------------------------|
AU2715| PID    Reference Object                    Distance      Geod. Az  |
AU2715|                                                          dddmmss.s |
AU2715| DD6373 BLOUNT RM 1                          9.753 METERS 00927     |
AU2715| DD6374 BLOUNT RM 2                          7.636 METERS 12049     |
AU2715| AU2712 NEW ORLEANS TV STA WGNO TOWER       APPROX. 4.4 KM 1743443.5 |
AU2715| AU2716 BLOUNT LDH 1972 A POINT             11.035 METERS 31101     |
AU2715|---------------------------------------------------------------------|
AU2715
AU2715                          SUPERSEDED SURVEY CONTROL
AU2715
AU2715  ELLIP H (01/21/93)  -26.535  (m)                        GP(       ) 4 2
AU2715  NAD 83(1986)-  29 59 16.93360(N)    090 04 04.03759(W) AD(       ) 1
AU2715  NAD 83(1986)-  29 59 16.93200(N)    090 04 04.03840(W) AD(       ) 2
AU2715  NAD 27      -  29 59 16.20246(N)    090 04 03.78046(W) AD(       ) 2
AU2715
AU2715.Superseded values are not recommended for survey control.
```

```
AU2715
AU2715.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AU2715.See file dsdata.txt to determine how the superseded data were derived.
AU2715
AU2715_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP8290121079(NAD 83)
AU2715
AU2715_MARKER: DS = TRIANGULATION STATION DISK
AU2715_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
AU2715_SP_SET: APRON
AU2715_STAMPING: BLOUNT 1972
AU2715_MARK LOGO: LADHGS
AU2715_MAGNETIC: N = NO MAGNETIC MATERIAL
AU2715_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AU2715_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AU2715+SATELLITE: SATELLITE OBSERVATIONS - November 04, 1994
AU2715
AU2715  HISTORY     - Date     Condition        Report By
AU2715  HISTORY     - 1972     MONUMENTED       LADH
AU2715  HISTORY     - 1972     GOOD             LADH
AU2715  HISTORY     - 19880920 GOOD             LADTD
AU2715  HISTORY     - 19890125 GOOD
AU2715  HISTORY     - 19910110 GOOD             NGS
AU2715  HISTORY     - 19941104 GOOD             NGS
AU2715
AU2715                          STATION DESCRIPTION
AU2715
AU2715'DESCRIBED BY LA DEPT OF HIGHWAYS 1972 (RT)
AU2715'THE STATION IS LOCATED 3 MILES NORTHEAST OF DOWNTOWN NEW ORLEANS, 5
AU2715'MILES NORTH OF GRETNA AND 8 MILES EAST OF KENNER, IN THE SOUTHEAST
AU2715'QUARTER OF SECTION 24, T12S, R11E, AND ON THE PROPERTY OWNED BY
AU2715'ORLEANS PARISH WATER BOARD.
AU2715'
AU2715'TO REACH THE STATION FROM THE INTERSECTION OF NORTH BROAD STREET AND
AU2715'TULANE AVENUE IN DOWNTOWN NEW ORLEANS, GO NORTHEAST ALONG NORTH
AU2715'BROAD STREET FOR 2.3 MILES TO PUMPING STATION NO. 3 ON THE LEFT AND
AU2715'NORTHWEST OF THE STREET.  THE STATION IS SET TO THE SOUTH OF
AU2715'THE PUMPING STATION NEAR A CLEAN-OUT RAMP ON A CANAL.
AU2715'
AU2715'THE STATION MARK IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN A
AU2715'CONCRETE SLAB CLEAN-OUT RAMP ON A CANAL, FLUSH WITH THE SLAB.  IT
AU2715'IS STAMPED BLOUNT 1972.  IT IS 74 FEET NORTH OF A POWER POLE, 58
AU2715'FEET WEST OF THE CENTER OF THE SOUTH BOUND LANE ON NORTH BROAD
AU2715'STREET, 43 FEET WEST OF A METAL DRAIN, 42 FEET NORTHWEST OF A
AU2715'SIGNAL LIGHT STANDARD, 39 FEET EAST OF THE NORTHEAST CORNER OF
AU2715'A METAL BUILDING, 2 FEET NORTH OF A METAL WITNESS POST AND SIGN, AND
AU2715'1 FOOT EAST OF THE WEST END OF A CONVEYOR FOR CLEAN-OUT ON CANAL.
AU2715'
AU2715'REFERENCE MARK 1 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN THE
AU2715'SOUTHWEST CORNER OF A CONCRETE BASE FOR CONVEYOR, FLUSH WITH
AU2715'CONCRETE, 4 FEET ABOVE GROUND.  IT IS STAMPED BLOUND R.M. 1 1972.  IT
AU2715'IS 71 FEET WEST-SOUTHWEST OF THE CENTER OF THE SOUTH BOUND LANE OF
AU2715'NORTH BROAD STREET, 24 FEET NORTH-NORTHEAST OF THE NORTHEAST
AU2715'CORNER OF A METAL BUILDING, 21 FEET EAST-SOUTHEAST OF A CANAL
AU2715'CLEAN-OUT PLATFORM, AND 14 FEET NORTHWEST OF AN ELECTRIC CONTROL
AU2715'PANEL.
AU2715'
AU2715'REFERENCE MARK 2 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND
AU2715'U. S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLD IN A
AU2715'CONCRETE SLAB FOR A CLEAN-OUT FOR CANAL, FLUSH WITH THE CONCRETE
AU2715'SLAB.  IT IS STAMPED BLOUNT R.M. 2 1972.  IT IS 80 FEET NORTH OF A
AU2715'POWER POLE, 33 FEET NORTH-NORTHWEST OF A SIGNAL LIGHT STANDARD, 32
```

AU2715'FEET WEST OF THE CENTER OF THE SOUTH BOUND LANE ON NORTH BROAD
AU2715'STREET, 18 FEET NORTH OF A METAL DRAIN, AND 1.5 FEET WEST OF THE EAST
AU2715'END OF A CONVEYOR ON A CLEAN-OUT FOR A CANAL.
AU2715'
AU2715'HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.
AU2715
AU2715 STATION RECOVERY (1972)
AU2715
AU2715'RECOVERY NOTE BY LA DEPT OF HIGHWAYS 1972
AU2715'RECOVERED IN GOOD CONDITION.
AU2715
AU2715 STATION RECOVERY (1988)
AU2715
AU2715'RECOVERY NOTE BY LA TRANSP AND DEV 1988
AU2715'THE STATION IS LOCATED 4.8 KM (3.00 MI) NORTHEAST OF DOWNTOWN NEW
AU2715'ORLEANS, 8 KM (4.95 MI) NORTH OF GRETNA AND 12.8 KM (7.95 MI) EAST OF
AU2715'KENNER, IN THE SOUTHEAST QUARTER OF SECTION 24, T 12 S, R 11 E.
AU2715'OWNERSHIP--ORLEANS PARISH WATER BOARD.
AU2715'TO REACH THE STATION FROM THE INTERSECTION OF NORTH BROAD STREET AND
AU2715'TULANE AVENUE IN DOWNTOWN NEW ORLEANS, GO NORTHEAST ALONG NORTH BROAD
AU2715'STREET FOR 3.7 KM (2.30 MI) TO PUMPING STATION NO. 3 ON THE LEFT AND
AU2715'NORTHWEST OF THE STREET. THE STATION IS SET TO THE SOUTH OF THE
AU2715'PUMPING STATION NEAR A CLEAN-OUT RAMP ON A CANAL.
AU2715'THE STATION MARK IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U.
AU2715'S. COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN A CONCRETE
AU2715'SLAB FLUSH WITH THE SURFACE OF THE RAMP 22.6 M (74.1 FT) NORTH OF A
AU2715'POWER POLE, 17.7 M (58.1 FT) WEST OF THE CENTER OF THE SOUTH BOUND
AU2715'LANE OF NORTH BROAD STREET, 13.1 M (43.0 FT) WEST OF A METAL DRAIN,
AU2715'12.8 M (42.0 FT) NORTHWEST OF A SIGNAL LIGHT STANDARD, 11.9 M
AU2715'(39.0 FT) EAST OF THE NORTHEAST CORNER OF A METAL BUILDING, 0.6 M
AU2715'(2.0 FT) NORTH OF A METAL WITNESS POST AND SIGN AND 0.3 M (1.0 FT)
AU2715'EAST OF THE WEST END OF A CONVEYER FOR CLEAN-OUT ON THE CANAL.
AU2715'REFERENCE MARK 1 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U
AU2715'S COAST AND GEODETIC SURVEY DISK SET IN A DRILL HOLE IN THE SOUTHWEST
AU2715'CORNER OF A CONCRETE BASE FOR A CONVEYER, 1.2 M (3.9 FT) ABOVE THE
AU2715'GROUND STAMPED---BLOUNT RM 1 1972---, 21.6 M (70.9 FT) WEST-SOUTHWEST
AU2715'OF THE CENTER OF THE SOUTH BOUND LANE OF NORTH BROAD STREET, 7.3 M
AU2715'(24.0 FT) NORTH-NORTHEAST OF THE NORTHEAST CORNER OF A METAL BUILDING,
AU2715'6.4 M (21.0 FT) EAST-SOUTHEAST OF A CANAL CLEAN-OUT PLATFORM AND 4.3 M
AU2715'(14.1 FT) NORTHWEST OF AN ELECTRIC CONTROL PANEL.
AU2715'REFERENCE MARK 2 IS A STANDARD LOUISIANA DEPARTMENT OF HIGHWAYS AND U
AU2715'S COAST AND GEODETIC SURVEY DISK STAMPED---BLOUNT RM 2 1972---SET IN A
AU2715'DRILL HOLE IN A CONCRETE SLAB FOR A CLEAN-OUT FOR THE CANAL 24.4 M
AU2715'(80.1 FT) NORTH OF A POWER POLE, 10.1 M (33.1 FT) NORTH-NORTHWEST OF A
AU2715'SIGNAL LIGHT STANDARD, 9.8 M (32.2 FT) WEST OF THE CENTER OF THE SOUTH
AU2715'BOUND LANE OF NORTH BROAD STREET, 5.5 M (18.0 FT) NORTH OF A METAL
AU2715'DRAIN AND 0.46 M (1.5 FT) WEST OF THE EAST END OF THE CONVEYER.
AU2715
AU2715 STATION RECOVERY (1989)
AU2715
AU2715'RECOVERED 1989
AU2715'RECOVERED IN GOOD CONDITION.
AU2715
AU2715 STATION RECOVERY (1991)
AU2715
AU2715'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
AU2715'IN NEW ORLEANS, AT THE INTERSECTION OF NORTH BROAD STREET AND A.P.
AU2715'TUREAUD AVENUE, IN A CONCRETE APRON AT THE SOUTHWEST CORNER OF A
AU2715'CANAL CLEAN OUT RAMP AT PUMP STATION 3, 17.7 M (58.1 FT) NORTHWEST OF
AU2715'THE CENTER OF THE SOUTHWEST BOUND LANES OF THE STREET, 12.8 M (42.0
AU2715'FT) NORTH OF A TRAFFIC LIGHT, 3.3 M (10.8 FT) EAST OF A CHAIN-LINK
AU2715'FENCE, 2.0 M (6.6 FT) NORTH OF A CHAIN-LINK FENCE, 0.6 M (2.0 FT)
AU2715'ABOVE THE LEVEL OF THE STREET, AND ON THE EXTENDED CENTER OF THE

```
AU2715'NORTHBOUND LANES OF THE AVENUE.
AU2715
AU2715                          STATION RECOVERY (1994)
AU2715
AU2715'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (GAS)
AU2715'IN NEW ORLEANS, AT THE INTERSECTION OF NORTH BROAD STREET AND A P
AU2715'TUREAUD AVENUE, IN A CONCRETE APRON AT THE SOUTHWEST CORNER OF A CANAL
AU2715'CLEAN OUT RAMP AT PUMP STATION NUMBER 3, 17.7 M (58.1 FT) NORTHWEST OF
AU2715'THE CENTER OF THE SOUTHWEST BOUND LANES OF THE STREET, 12.8 M (42.0
AU2715'FT) NORTH OF A TRAFFIC LIGHT, 3.3 M (10.8 FT) SOUTHEAST OF A
AU2715'CHAIN-LINK FENCE, 2.0 M (6.6 FT) NORTHEAST OF A CHAIN-LINK FENCE, 0.6
AU2715'M (2.0 FT) ABOVE THE LEVEL OF THE STREET, AND ON THE EXTENDED CENTER
AU2715'OF THE NORTHBOUND LANES OF THE AVENUE.  NOTE--THE MARK IS ON PROPERTY
AU2715'OWNED BY THE CITY OF NEW ORLEANS.  TO GAIN ACCESS TO THE MARK
AU2715'CONTACT--RAY FABRE, 2800 PEOPLES AVENUE, NEW ORLEANS, LA 70119,
AU2715'TELEPHONE NUMBER (504) 585 2420.

*** retrieval complete.
Elapsed Time = 00:00:03
```

```
-------------------------------------------------------------------------
-   This listing contains control for which complete digital            -
-   data sheets where not provided.  The complete data sheets were      -
-   not provided for the reason listed below.  The reason below is      -
-   associated with a horizontal control Nonpub code shown under        -
-   the heading 'H' and/or a vertical control Nonpub code shown under   -
-   the heading 'v'                                                     -
-                                                                       -
-   The format of the records are as follows:                           -
-       Pid  = Station Permanent Identifier)                            -
-       Name = Station Designation                                      -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)   -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)  -
-       O    = Horizontal Order                                         -
-       o    = Vertical Order                                           -
-       H    = Horizontal Nonpub Code                                   -
-       v    = Vertical Nonpub Code                                     -
-                                                                       -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                       -
-       -------- -------------------------------                        -
-       A        CORS site is not active                                -
-       B        Station is a RBN antenna                               -
-       C        Not a publishable datum within the state               -
-       D        No descriptive text available                          -
-       L        CORS L1 Phase Center is not publishable                -
-       N        No geodetic control                                    -
-       O        Outside NGS publication area                           -
-       P        Purpose of position is not for network control         -
-       R        Restricted position                                    -
-       T        Station is a temporary point/bench mark                -
-       V        Station is a VOR antenna                               -
-       W        Weakly determined position                             -
-       X        Surface mark reported destroyed                        -
-       Y        Surface and underground mark reported destroyed        -
                                                                        -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                         -
-       -------- ------------------------------                         -
-       A        CORS site is not active                                -
-       D        No descriptive text available                          -
-       F        Bench mark not yet adjusted                            -
-       N        No geodetic control                                    -
-       L        CORS L1 Phase Center is not publishable                -
```

```
-       O        Outside NGS publication area                                  -
-       R        Restricted elevation                                          -
-       S        Mark is in a subsidence area                                  -
-       T        Station is a temporary point/bench mark                       -
-       X        Surface mark reported destroyed                               -
-       Y        Surface and underground mark reported destroyed               -
-       Z        Presumed destroyed                                            -
-                                                                              -
-                                                                              -
-   NOTE - Stations found in this listing may still have a valid               -
-          datasheet produced by use of other publishable values.              -
-          For example, an ADJUSTED height may be non-publishable              -
-          but a good GPS height might be found on the datasheet.              -
-          This listing does not imply that values found on the datasheet      -
-          are restricted.  If it's on the datasheet, use it.                  -
-                                                                              -
------------------------------------------------------------------------------
 Pid    Name                          Lat         Lon         Elev      O o Hv
 ------ ----------------------------- ----------- ----------- --------- - - --
>AU2715 BLOUNT                        29 59 16.9/090 04 04.0     -0.    1 1  S
```

Control points in a dynamic region/subsidence area are publicly publishable if:

(3) The control point is in the Gulf Coast dynamic regions/subsidence areas (Table 1) ***and*** the control point is a list of publishable project/state combinations in the dynamic regions/subsidence areas (Table 3).

(4) The control point is in the Gulf Coast dynamic regions/subsidence areas (Table 1) ***and*** the control point itself is designated as being publicly publishable in the normally unpublishable region due to being constrained (i.e. must appear in a list of publishable UIDs for the region found in Table 4).

Below is a complete list of projects (a.k.a. ADJ_IDs) and their epochs that are in the Gulf Coast dynamic regions/subsidence areas:

Table 2: List of Publishable Projects in the Gulf Coast Dynamic Regions/Subsidence Areas

00000729/1	2009.55
00000729/2	2009.55
00000730/1	2009.55
00000730/2	2009.55
00000730/3	2009.55
00000730/4	2009.55
00000731	2009.55
00000732	2009.55
GPS2329	2006.81
GPS2100	2004.65
GPS2021/C	2004.65
GPS2212	2004.65
GPS2287	2004.65
GPS2307	2004.65
GPS2262	2004.65

Table 3 consists of a list of publishable project/state combinations in the dynamic regions/subsidence areas that generate a publicly publishable datasheet:

Table 3: Valid Project/State Combinations in the Dynamic Regions/Subsidence Areas

Project	State
00000729/1	AL
00000729/1	FL
00000729/1	LA
00000729/1	MS
00000729/1	TX
00000729/2	AL
00000729/2	MS
00000730/1	AL
00000730/2	AL
00000730/3	AL
00000730/4	AL
00000731	FL
00000732	TX
GPS2329	LA

*In the near future, control points in the state of LA and in project GPS2772 will be added to the list above.

Below is a list of control points (by their individual UID and PID) designated as publicly publishable regardless of the fact that they are in the dynamic regions/subsidence areas. These control points were constrained (held constant):

Table 4: Specific Control Points publishable in the Dynamic Regions/Subsidence Areas

UID	PID
10478369	BH1210
10478372	BH1213
11634989	DL9666
11634990	DL9667
10478371	BH1212
10484553	BG1724

Control points not in a publishable project/state combination (Table 3) or not exceptions to the rule by UID (Table 4), will generate a datasheet with "NOT PUB" in the CURRENT SURVEY CONTROL section. This includes control points in past project/state combinations that formerly generated a publishable datasheet if the control point was in one of them. A list of these formerly valid project/state combinations appears is Table 5 below.

Table 5: Past HT_MOD Projects in Louisiana that formerly generated a publishable datasheet if the control point was in one of them

Project	State
GPS2100	LA
GPS2021/C	LA
GPS2212	LA
GPS2307	LA
GPS2262	LA

An example datasheet with "NOT PUB" on the ORTHO HEIGHT line for a control point in project GPS2100 and in the state of LA is shown below:

```
DATABASE = DEVTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JUNE 15, 2012
 BJ1655 ***********************************************************************
 BJ1655  DESIGNATION -  E 191
 BJ1655  PID         -  BJ1655
 BJ1655  STATE/COUNTY-  LA/ST JAMES
 BJ1655  COUNTRY     -  US
 BJ1655  USGS QUAD   -  LUTCHER (1994)
 BJ1655
 BJ1655                          *CURRENT SURVEY CONTROL
 BJ1655  ______________________________________________________________________
 BJ1655* NAD 83(2007) POSITION- 30 01 07.27902(N) 090 43 50.57512(W)   ADJUSTED
 BJ1655* NAD 83(2007) ELLIP HT-   -21.934 (meters)        (10/11/11)   ADJUSTED
 BJ1655* NAD 83(2007) EPOCH   -  2002.00
 BJ1655* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 BJ1655  **This station is located in a suspected subsidence area (see below).
 BJ1655  ______________________________________________________________________
 BJ1655  NAD 83(2007) X  -    -70,488.635 (meters)                    COMP
 BJ1655  NAD 83(2007) Y  - -5,526,752.023 (meters)                    COMP
 BJ1655  NAD 83(2007) Z  -  3,172,156.722 (meters)                    COMP
 BJ1655  LAPLACE CORR    -          0.56  (seconds)                   DEFLEC09
 BJ1655  GEOID HEIGHT    -        -26.27  (meters)                    GEOID09
 BJ1655  MODELED GRAVITY -    979,310.2   (mgal)                      NAVD 88
```

```
BJ1655
BJ1655  VERT ORDER      -  FIRST     CLASS II (See Below)
BJ1655  ELLP ORDER      -  FOURTH    CLASS I
BJ1655
BJ1655  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
BJ1655  Type                                           Horiz  Ellip  Dist(km)
BJ1655  ----------------------------------------------------------------------
BJ1655  NETWORK                                         1.07   2.14
BJ1655  ----------------------------------------------------------------------
BJ1655  MEDIAN LOCAL ACCURACY AND DIST (032 points)   1.31   2.62     48.19
BJ1655  ----------------------------------------------------------------------
BJ1655  NOTE: Click here for information on individual local accuracy
BJ1655  values and other accuracy information.
BJ1655
BJ1655
BJ1655.The horizontal coordinates were established by GPS observations
BJ1655.and adjusted by the National Geodetic Survey in February 2007.
BJ1655
BJ1655.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
BJ1655.See www.ngs.noaa.gov/NationalReadjustment for more information.
BJ1655
BJ1655.The horizontal coordinates are valid at the epoch date displayed above
BJ1655.which is a decimal equivalence of Year/Month/Day.
BJ1655
BJ1655 ** This station is in an area of known vertical motion.  If an
BJ1655 ** orthometric height was ever established but is not available
BJ1655 ** in the current survey control section, the orthometric height
BJ1655 ** is considered suspect.  Suspect heights are available in the
BJ1655 ** superseded section only if requested.
BJ1655
BJ1655.The vertical order pertains to the NGVD 29 superseded value.
BJ1655
BJ1655.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BJ1655
BJ1655.The Laplace correction was computed from DEFLEC09 derived deflections.
BJ1655
BJ1655.The ellipsoidal height was determined by GPS observations
BJ1655.and is referenced to NAD 83.
BJ1655
BJ1655.The modeled gravity was interpolated from observed gravity values.
BJ1655
BJ1655. The following values were computed from the NAD 83(2007) position.
BJ1655
BJ1655;                    North         East     Units Scale Factor Converg.
BJ1655;SPC LA S     -   168,490.790 1,058,128.892   MT  0.99992579   +0 18 04.7
BJ1655;SPC LA S     -   552,790.20  3,471,544.54   sFT  0.99992579   +0 18 04.7
BJ1655;UTM  15      - 3,323,025.166   718,855.023   MT  1.00019098   +1 08 08.6
BJ1655
BJ1655!             -  Elev Factor  x  Scale Factor =   Combined Factor
BJ1655!SPC LA S     -   1.00000344  x   0.99992579  =   0.99992923
BJ1655!UTM  15      -   1.00000344  x   1.00019098  =   1.00019443
BJ1655
BJ1655                          SUPERSEDED SURVEY CONTROL
BJ1655
BJ1655  ELLIP H (03/12/08)  -21.879  (m)                       GP(       ) 3 1
BJ1655  ELLIP H (02/10/07)  -21.917  (m)                       GP(       )
BJ1655  NAD 83(1992)-  30 01 07.27900(N)    090 43 50.57510(W) AD(2004.65) B
BJ1655  ELLIP H (06/22/05)  -21.925  (m)                       GP(2004.65) 4 1
BJ1655  NAVD 88 (06/04/12)    4.401  (m)           14.44   (f) ADJUSTED    1 2
BJ1655  NAVD 88 (06/22/05)    4.39   (m)           14.4    (f) LEVELING    3
BJ1655  NAVD 88 (02/14/94)    4.621  (m)           15.16   (f) SUPERSEDED  1 2
BJ1655  NGVD 29 (??/??/??)    4.752  (m)           15.59   (f) ADJUSTED    1 2
BJ1655
```

```
BJ1655.Superseded values are not recommended for survey control.
BJ1655
BJ1655.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BJ1655.See file dsdata.txt to determine how the superseded data were derived.
BJ1655
BJ1655_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYP1885523025(NAD 83)
BJ1655
BJ1655_MARKER: DB = BENCH MARK DISK
BJ1655_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
BJ1655_SP_SET: CONCRETE POST
BJ1655_STAMPING: E 191 1964
BJ1655_MARK LOGO: CGS
BJ1655_PROJECTION: PROJECTING 8 CENTIMETERS
BJ1655_MAGNETIC: N = NO MAGNETIC MATERIAL
BJ1655_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
BJ1655+STABILITY: SURFACE MOTION
BJ1655_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BJ1655+SATELLITE: SATELLITE OBSERVATIONS - September 26, 2010
BJ1655
BJ1655  HISTORY     - Date     Condition        Report By
BJ1655  HISTORY     - 1964     MONUMENTED       CGS
BJ1655  HISTORY     - 1986     GOOD             NGS
BJ1655  HISTORY     - 20040421 GOOD             NGS
BJ1655  HISTORY     - 20051011 GOOD             NGS
BJ1655  HISTORY     - 20060430 GOOD             NGS
BJ1655  HISTORY     - 20090411 GOOD             WOOLPT
BJ1655  HISTORY     - 20100926 GOOD             GEOMET
BJ1655
BJ1655                          STATION DESCRIPTION
BJ1655
BJ1655'DESCRIBED BY COAST AND GEODETIC SURVEY 1964
BJ1655'3.1 MI SW FROM GRAMERCY.
BJ1655'3.1 MILES SOUTHWEST ALONG STATE HIGHWAY 44 FROM THE JUNCTION OF STATE
BJ1655'HIGHWAY 20 AT GRAMERCY, 39 FEET NORTH OF THE CENTER LINE OF THE
BJ1655'HIGHWAY, 127 YARDS NORTHWEST OF THE CENTER LINE OF A DRIVEWAY LEADING
BJ1655'TO A ONE STORY FRAME HOUSE, 2 1/2 FEET WEST OF A CONCRETE RIGHT OF WAY
BJ1655'MARKER, 4 1/2 FEET NORTH OF A POWER LINE POLE, 1 FOOT SOUTH OF AN
BJ1655'EAST-WEST FENCE LINE, 1 1/2 FEET EAST OF A METAL WITNESS POST, 1 FOOT
BJ1655'BELOW THE LEVEL OF THE HIGHWAY AND SET IN THE TOP OF A CONCRETE POST
BJ1655'PROJECTING 3 INCHES ABOVE THE LEVEL OF THE GROUND.
BJ1655
BJ1655                          STATION RECOVERY (1986)
BJ1655
BJ1655'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986
BJ1655'RECOVERED IN GOOD CONDITION.
BJ1655
BJ1655                          STATION RECOVERY (2004)
BJ1655
BJ1655'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2004 (KLF)
BJ1655'THE STATION IS LOCATED ABOUT 3.1 MI SOUTHWEST OF GRAMERCY ON STATE
BJ1655'HIGHWAY RIGHT OF WAY.
BJ1655'
BJ1655'TO REACH THE STATION FROM THE CENTER OF THE INTERSECTION OF INTERSTATE
BJ1655'HWY 10 AND AND LA  HWY 641 NORTH OF GRAMERCY, GO SOUTH THEN SOUTHEAST
BJ1655'FOR 6.7 MI ON LA 641 TO THE T JUNCTION  WITH LA HWY 44, TURN RIGHT AND
BJ1655'GO WEST FOR 2.6 MI ALONG LA 44 TO THE MARK ON THE RIGHT BETWEEN A
BJ1655'UTILITY POLE AND CHAIN LINK FENCE.    THE STATION IS  15.6 M WEST OF A
BJ1655'FIRE HYDRANT, 12.2 M NORTH OF THE CENTER OF THE HIGHWAY, 1.4 MI
BJ1655'NORTH-NORTHWEST OF A WOODEN UTILITY POLE, 1.0 M SOUTH OF A CHAIN LINK
BJ1655'FENCE, 0.9 M WEST OF A LDH  CONCTETE RIGHT OF WAY POST, 0.4 M EAST OF
BJ1655'A METAL POST WITH A METAL WITNESS SIGN ATTACHED, AND  ABOUT 0.7 M
BJ1655'BELOW THE LEVEL OF THE HIGHWAY.
BJ1655
```

```
BJ1655                          STATION RECOVERY (2005)
BJ1655
BJ1655'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (KLF)
BJ1655'RECOVERED AS DESCRIBED.
BJ1655
BJ1655                          STATION RECOVERY (2006)
BJ1655
BJ1655'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2006 (RLT)
BJ1655'RECOVERED AS DESCRIBED.
BJ1655
BJ1655                          STATION RECOVERY (2009)
BJ1655
BJ1655'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2009 (JPD)
BJ1655'RECOVERED AS DESCRIBED
BJ1655
BJ1655                          STATION RECOVERY (2010)
BJ1655
BJ1655'RECOVERY NOTE BY GEOMETRICS GPS INCORPORATED 2010 (RLJ)
BJ1655'RECOVERED AS DESCRIBED.  NOT VERY GOOD FOR GPS FOR LONG SESSIONS.

*** retrieval complete.
Elapsed Time = 00:00:10


-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- ---------------------------------                            -
-       A        CORS site is not active                                      -
-       B        Station is a RBN antenna                                     -
-       C        Not a publishable datum within the state                     -
-       D        No descriptive text available                                -
-       L        CORS L1 Phase Center is not publishable                      -
-       N        No geodetic control                                          -
-       O        Outside NGS publication area                                 -
-       P        Purpose of position is not for network control               -
-       R        Restricted position                                          -
-       T        Station is a temporary point/bench mark                      -
-       V        Station is a VOR antenna                                     -
-       W        Weakly determined position                                   -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
                                                                              -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ------------------------------                               -
-       A        CORS site is not active                                      -
-       D        No descriptive text available                                -
```

```
-       F        Bench mark not yet adjusted                                  -
-       N        No geodetic control                                          -
-       L        CORS L1 Phase Center is not publishable                      -
-       O        Outside NGS publication area                                 -
-       R        Restricted elevation                                         -
-       S        Mark is in a subsidence area                                 -
-       T        Station is a temporary point/bench mark                      -
-       X        Surface mark reported destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-       Z        Presumed destroyed                                           -
-                                                                             -
-                                                                             -
-   NOTE - Stations found in this listing may still have a valid              -
-          datasheet produced by use of other publishable values.             -
-          For example, an ADJUSTED height may be non-publishable             -
-          but a good GPS height might be found on the datasheet.             -
-          This listing does not imply that values found on the datasheet     -
-          are restricted.  If it's on the datasheet, use it.                 -
-                                                                             -
-------------------------------------------------------------------------------
 Pid    Name                          Lat         Lon         Elev      O o Hv
 ------ ----------------------------- ----------- ----------- --------- - - --
>BJ1655 E 191                         30 01 07.2/090 43 50.5      5.   ? 1  S
```

There are several new messages (paragraphs) that are new in datasheet95 V7.89.

In the CURRENT SURVEY CONTROL section of the datasheet the message:

```
<pid> ** This station is in an area of known vertical motion.  Due to the
<pid> ** variability of land subsidence, uplift, and crustal motion, NGS has
<pid> ** determined the orthometric heights for marks in these suspect
<pid> ** subsidence areas should be considered valid only at the epoch date
<pid> ** associated with the orthometric height.  These heights must always
<pid> ** be validated when used as control.  All previously superseded
<pid> ** orthometric heights are now considered suspect and are available
<pid> ** in the superseded section.  NGS does not recommend using suspect
<pid> ** or superseded heights as control.
<pid>
```

will be displayed if the control point is in the dynamic regions/subsidence areas (Table 1) and a control point is publishable in this area because it appears in either Table 3 or Table 4.

An example PID with this message on the datasheet is BH0673:

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JULY 10, 2012
 BH0673 ***********************************************************************
 BH0673  DESIGNATION -  E 17
 BH0673  PID         -  BH0673
 BH0673  STATE/COUNTY-  MS/HARRISON
 BH0673  COUNTRY     -  US
 BH0673  USGS QUAD   -  MC HENRY (1982)
 BH0673
 BH0673                          *CURRENT SURVEY CONTROL
 BH0673  ______________________________________________________________________
 BH0673* NAD 83(2011) POSITION- 30 38 06.68079(N) 089 08 13.81269(W)   ADJUSTED
 BH0673* NAD 83(2011) ELLIP HT-    18.554 (meters)        (06/27/12)   ADJUSTED
 BH0673* NAD 83(2011) EPOCH   -  2010.00
 BH0673* NAVD 88 ORTHO HEIGHT -    46.907  (meters)     153.89  (feet) ADJUSTED
```

```
BH0673* NAVD 88 EPOCH        -  2009.55
BH0673  **This station is located in a suspected subsidence area (see below).
BH0673  ____________________________________________________________________
BH0673  NAD 83(2011) X  -     82,713.071 (meters)                    COMP
BH0673  NAD 83(2011) Y  - -5,492,104.648 (meters)                    COMP
BH0673  NAD 83(2011) Z  -  3,231,168.546 (meters)                    COMP
BH0673  LAPLACE CORR    -         -1.42  (seconds)                   DEFLEC09
BH0673  GEOID HEIGHT    -        -28.37  (meters)                    GEOID12
BH0673  DYNAMIC HEIGHT  -         46.845 (meters)      153.69  (feet) COMP
BH0673  MODELED GRAVITY -    979,314.6   (mgal)                      NAVD 88
BH0673
BH0673  VERT ORDER      -  FIRST     CLASS II
BH0673
BH0673  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
BH0673  Type                                          Horiz  Ellip  Dist(km)
BH0673  ----------------------------------------------------------------------
BH0673  NETWORK                                        1.73   2.23
BH0673  ----------------------------------------------------------------------
BH0673  MEDIAN LOCAL ACCURACY AND DIST (002 points)   1.59   1.88     12.64
BH0673  ----------------------------------------------------------------------
BH0673  NOTE: Click here for information on individual local accuracy
BH0673  values and other accuracy information.
BH0673
BH0673
BH0673.The horizontal coordinates were established by GPS observations
BH0673.and adjusted by the National Geodetic Survey in June 2012.
BH0673
BH0673.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH0673.frame has been affixed to the stable North American tectonic plate. See
BH0673.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BH0673
BH0673.The horizontal coordinates are valid at the epoch date displayed above
BH0673.which is a decimal equivalence of Year/Month/Day.
BH0673
BH0673 ** This station is in an area of known vertical motion.  Due to the
BH0673 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0673 ** determined the orthometric heights for marks in these suspect
BH0673 ** subsidence areas should be considered valid only at the epoch date
BH0673 ** associated with the orthometric height.  These heights must always
BH0673 ** be validated when used as control.  All previously superseded
BH0673 ** orthometric heights are now considered suspect and are available
BH0673 ** in the superseded section.  NGS does not recommend using suspect
BH0673 ** or superseded heights as control.
```

If the control point is in the dynamic regions/subsidence areas (Table 1) and the control point is not publishable in this area because it does not appears in either Table 3 or Table 4 but the user checked the checkbox “Included suspect heights in subsidence areas” as shown in Figure 1, then the following message is displayed:

```
<pid> ** This station is in an area of known vertical motion.  If no
<pid> ** orthometric height is shown in the current survey control section,
<pid> ** all orthometric heights are considered suspect and are only
<pid> ** available in the superseded section if suspect heights were
<pid> ** requested.
<pid>
```

If the control point is in the dynamic regions/subsidence areas (Table 1) and the control point is not publishable in this area because it does not appears in either Table 3 or Table 4 and the user

does not check the checkbox “Included suspect heights in subsidence areas” as shown in Figure 1, then the following message is displayed:

```
<pid> ** This station is in an area of known vertical motion.  If an
<pid> ** orthometric height was ever established but is not available
<pid> ** in the current survey control section, the orthometric height
<pid> ** is considered suspect.  Suspect heights are available in the
<pid> ** superseded section only if requested.
<pid>
```

An example PID that produces this message on a datasheet is BH3030:

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JULY 10, 2012
 BH3030 ***********************************************************************
 BH3030  CBN         -  This is a Cooperative Base Network Control Station.
 BH3030  DESIGNATION -  15 V 15
 BH3030  PID         -  BH3030
 BH3030  STATE/COUNTY-  MS/HARRISON
 BH3030  COUNTRY     -  US
 BH3030  USGS QUAD   -  WHITE PLAINS (1982)
 BH3030
 BH3030                        *CURRENT SURVEY CONTROL
 BH3030  ______________________________________________________________________
 BH3030* NAD 83(2011) POSITION- 30 36 54.97893(N) 088 55 20.53497(W)   ADJUSTED

 BH3030* NAD 83(2011) ELLIP HT-    -7.670 (meters)        (06/27/12)   ADJUSTED
 BH3030* NAD 83(2011) EPOCH   -  2010.00
 BH3030* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB

 BH3030  **This station is located in a suspected subsidence area (see below).
 BH3030  ______________________________________________________________________
 BH3030  NAD 83(2011) X  -    103,322.831 (meters)                     COMP
 BH3030  NAD 83(2011) Y  - -5,492,858.047 (meters)                     COMP
 BH3030  NAD 83(2011) Z  -  3,229,255.094 (meters)                     COMP
 BH3030  LAPLACE CORR    -         -0.47  (seconds)                    DEFLEC09
 BH3030  GEOID HEIGHT    -        -28.54  (meters)                     GEOID12
 BH3030
 BH3030  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 BH3030  Type                                          Horiz  Ellip  Dist(km)
 BH3030  ----------------------------------------------------------------------
 BH3030  NETWORK                                        1.26   6.94
 BH3030  ----------------------------------------------------------------------
 BH3030  MEDIAN LOCAL ACCURACY AND DIST (017 points)   1.39   7.19     40.82
 BH3030  ----------------------------------------------------------------------
 BH3030  NOTE: Click here for information on individual local accuracy
 BH3030  values and other accuracy information.
 BH3030
 BH3030
 BH3030.The horizontal coordinates were established by GPS observations
 BH3030.and adjusted by the National Geodetic Survey in June 2012.
 BH3030
 BH3030.NAD 83(2011) refers to NAD 83 coordinates where the reference
 BH3030.frame has been affixed to the stable North American tectonic plate. See
 BH3030.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
 BH3030
 BH3030.The horizontal coordinates are valid at the epoch date displayed above
 BH3030.which is a decimal equivalence of Year/Month/Day.
 BH3030
 BH3030 ** This station is in an area of known vertical motion.  If an
 BH3030 ** orthometric height was ever established but is not available
```

```
BH3030 ** in the current survey control section, the orthometric height
BH3030 ** is considered suspect.  Suspect heights are available in the
BH3030 ** superseded section only if requested.
BH3030
BH3030.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BH3030
BH3030.The Laplace correction was computed from DEFLEC09 derived deflections.
BH3030
BH3030.The ellipsoidal height was determined by GPS observations
BH3030.and is referenced to NAD 83.
BH3030
BH3030. The following values were computed from the NAD 83(2011) position.
BH3030
BH3030;                   North         East     Units Scale Factor Converg.
BH3030;SPC MS E     -   123,628.917   291,463.018   MT  0.99995090   -0 02 43.2
BH3030;SPC MS E     -   405,605.87    956,241.58   sFT  0.99995090   -0 02 43.2
BH3030;UTM  16      - 3,388,540.345   315,729.416   MT  1.00001890   -0 58 45.4
BH3030
BH3030!             -  Elev Factor  x  Scale Factor =   Combined Factor
BH3030!SPC MS E     -   1.00000120  x   0.99995090  =   0.99995210
BH3030!UTM  16      -   1.00000120  x   1.00001890  =   1.00002010
```

If the control point was a HT_MOD (i.e. ELEVATION.ELEV_SOURCE=”H” and ELEVATION.ELEV_TECH=”G”) and the control point was also VTDP constrained (i.e. UID appears in the LA_VTDP_CONSTRAINT table) then the following message is displayed:

```
<pid> ** The orthometric height was determined with a Vertical Time-dependent
<pid> ** Positioning (VTDP) model and has been validated through GPS observations
<pid> ** for the epoch indicated (see www.ngs.noaa.gov/heightmod/VTDP).
<pid>
```

An example PID that produces this message on a datasheet is BH3030:

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JULY 10, 2012
 BH3030 ***********************************************************************
 BH3030  CBN         -  This is a Cooperative Base Network Control Station.
 BH3030  DESIGNATION -  15 V 15
 BH3030  PID         -  BH3030
 BH3030  STATE/COUNTY-  MS/HARRISON
 BH3030  COUNTRY     -  US
 BH3030  USGS QUAD   -  WHITE PLAINS (1982)
 BH3030
 BH3030                        *CURRENT SURVEY CONTROL
 BH3030  ______________________________________________________________________
 BH3030* NAD 83(2011) POSITION- 30 36 54.97893(N) 088 55 20.53497(W)   ADJUSTED
 BH3030* NAD 83(2011) ELLIP HT-    -7.670 (meters)        (06/27/12)   ADJUSTED
 BH3030* NAD 83(2011) EPOCH   -  2010.00
 BH3030* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet) NOT PUB
 BH3030  **This station is located in a suspected subsidence area (see below).
 BH3030  ______________________________________________________________________
 BH3030  NAD 83(2011) X  -    103,322.831 (meters)                     COMP
 BH3030  NAD 83(2011) Y  - -5,492,858.047 (meters)                     COMP
 BH3030  NAD 83(2011) Z  -  3,229,255.094 (meters)                     COMP
 BH3030  LAPLACE CORR    -         -0.47  (seconds)                    DEFLEC09
 BH3030  GEOID HEIGHT    -        -28.54  (meters)                     GEOID12
 BH3030
 BH3030  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 BH3030  Type                                          Horiz  Ellip  Dist(km)
 BH3030  ----------------------------------------------------------------------
```

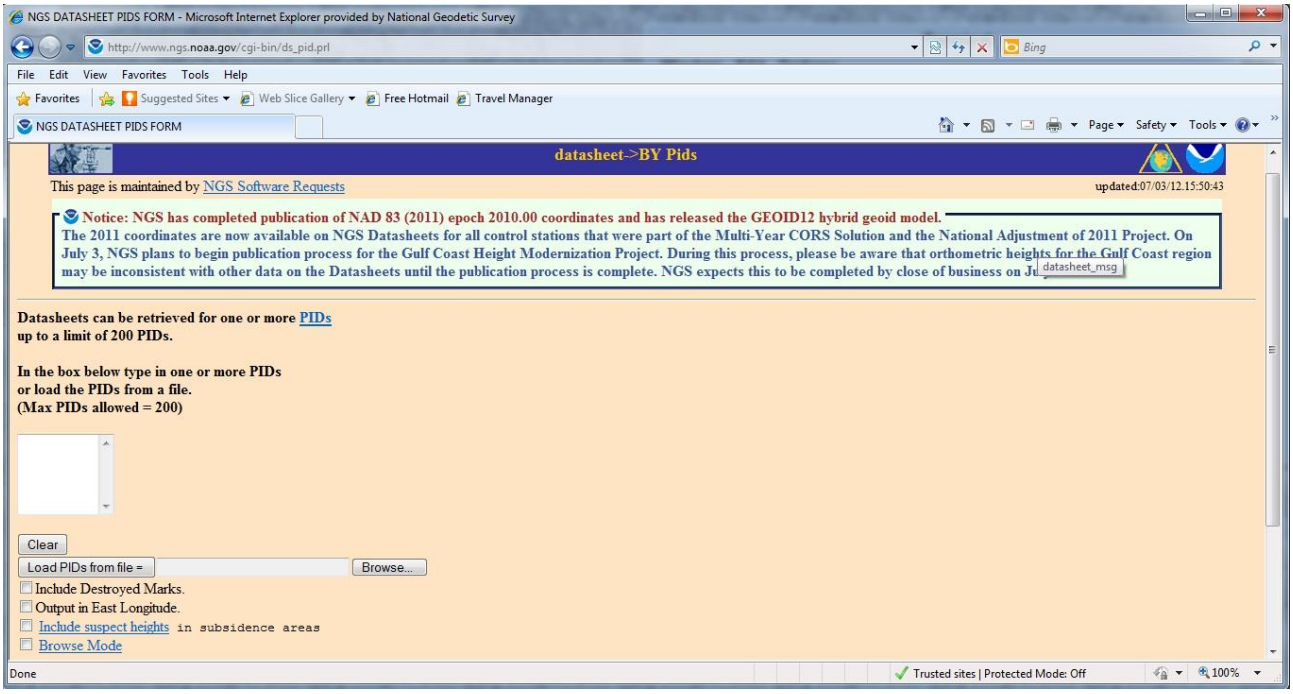
```
BH3030  NETWORK                                          1.26   6.94
BH3030  ---------------------------------------------------------------------
BH3030  MEDIAN LOCAL ACCURACY AND DIST (017 points)   1.39   7.19     40.82
BH3030  ---------------------------------------------------------------------
BH3030  NOTE: Click here for information on individual local accuracy
BH3030  values and other accuracy information.
BH3030
BH3030
BH3030.The horizontal coordinates were established by GPS observations
BH3030.and adjusted by the National Geodetic Survey in June 2012.
BH3030
BH3030.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH3030.frame has been affixed to the stable North American tectonic plate. See
BH3030.www.ngs.noaa.gov/web/surveys/NA2011 for more information.
BH3030
BH3030.The horizontal coordinates are valid at the epoch date displayed above
BH3030.which is a decimal equivalence of Year/Month/Day.
BH3030
BH3030 ** This station is in an area of known vertical motion.  If no
BH3030 ** orthometric height is shown in the current survey control section,
BH3030 ** all orthometric heights are considered suspect and are only
BH3030 ** available in the superseded section if suspect heights were
BH3030 ** requested.
```

Another change made in datasheet95 V7.89 in the SUPERSEDED SURVEY CONTROL section of the datasheet is how superseded heights get published/not published. A superseded height is publishable in this section if:

(1) The control point is in a dynamic region/subsidence area (Table 1) and the control point is publishable in this area because it appears in either Table 3 or Table 4.

(2) The control point is in a dynamic region/subsidence area (Table 1) and the user requested to see the suspect heights by checking the box labeled “Include suspect heights in subsidence areas” as show in Figure 1 below.

Figure 1: Checkbox for users to select whether or not they want to see suspect heights in a subsidence area



An example PID that generates a datasheet with publishable superseded heights because of condition #1 above is BJ3209:

```
BJ3209                          SUPERSEDED SURVEY CONTROL
BJ3209
BJ3209  ELLIP H (10/11/11)  -21.089  (m)                      GP(        ) 4 1
BJ3209  ELLIP H (03/12/08)  -21.079  (m)                      GP(        ) 3 1
BJ3209  NAD 83(2007)-  30 18 07.53942(N)    091 50 52.80658(W) AD(        ) 0
BJ3209  ELLIP H (02/10/07)  -21.073  (m)                      GP(        )
BJ3209  NAD 83(1992)-  30 18 07.53934(N)    091 50 52.80638(W) AD(2004.65) B
BJ3209  ELLIP H (06/22/05)  -21.070  (m)                      GP(2004.65) 4 1
BJ3209  ELLIP H (02/12/02)  -21.110  (m)                      GP(        ) 4 2
BJ3209  NAD 83(1992)-  30 18 07.55868(N)    091 50 52.79831(W) AD(        ) 1
BJ3209  NAD 83(1992)-  30 18 07.53927(N)    091 50 52.80594(W) AD(        ) B
BJ3209  ELLIP H (09/10/92)  -21.026  (m)                      GP(        ) 4 1
BJ3209  NAVD 88 (06/22/05)    6.32   (m)           20.7    (f) LEVELING    3
BJ3209  NAVD 88 (08/12/94)    6.38   (m)           20.9    (f) LEVELING    3
BJ3209  NAVD 88 (02/14/94)    6.380  (m)           20.93   (f) ADJUSTED    1 2
BJ3209  NAVD 88 (09/10/92)    6.4    (m)  GEOID90 model used  GPS OBS
BJ3209  NGVD 29 (??/??/??)    6.378  (m)           20.93   (f) ADJUSTED    1 2
BJ3209
```

An example PID that generates a datasheet with publishable superseded heights because of condition #2 above is BH3030 (note: checkbox labeled “Include suspect heights in subsidence area is checked by the user):

```
BH3030                          SUPERSEDED SURVEY CONTROL
BH3030
```

```
BH3030  NAD 83(2007)-  30 36 54.97870(N)    088 55 20.53572(W) AD(       ) 0
BH3030  ELLIP H (02/10/07)   -7.623  (m)                       GP(       )
BH3030  ELLIP H (04/15/02)   -7.652  (m)                       GP(       ) 4 2
BH3030  NAD 83(1993)-  30 36 54.97869(N)    088 55 20.53558(W) AD(       ) B
BH3030  ELLIP H (02/15/02)   -7.657  (m)                       GP(       ) 4 1
BH3030  NAVD 88 (02/15/02)   21.03   (m)           69.0    (f) LEVELING    3
BH3030  NAVD 88 (05/22/96)   21.034  (m)           69.01   (f) ADJUSTED    2 2
```

If the user did not check this checkbox, then they would not see the superseded heights in the SUPERSEDED SURVEY CONTROL section of the datasheets (see below):

```
BH3030                          SUPERSEDED SURVEY CONTROL
BH3030
BH3030  NAD 83(2007)-  30 36 54.97870(N)    088 55 20.53572(W) AD(       ) 0
BH3030  ELLIP H (02/10/07)   -7.623  (m)                       GP(       )
BH3030  ELLIP H (04/15/02)   -7.652  (m)                       GP(       ) 4 2
BH3030  NAD 83(1993)-  30 36 54.97869(N)    088 55 20.53558(W) AD(       ) B
BH3030  ELLIP H (02/15/02)   -7.657  (m)                       GP(       ) 4 1
```

Datasheet95 V7.89 also includes a new message in the SUPERSEDED SURVEY CONTROL section of the datasheets. The below message:

```
<pid> ** No published orthometric height exists and therefore all are
<pid> ** considered suspect. This station did not take part in a recent
<pid> ** survey which established orthometric heights in the area.  Therefore,
<pid> ** any previously published orthometric heights have not been validated.
<pid> ** NGS does not recommend using suspect or superseded heights as control
<pid> ** unless they can be validated or a new NAVD88 height established.
<pid> ** If this station were to take part in a new project and submitted
<pid> ** to NGS a new height could be published.
```

appears in this section whenever three conditions are true:

(1) the control point is in a dynamic region/subsidence area (Table 1)
(2) The control point is ***not*** publishable in the dynamic regions/subsidence areas by project/state combination (Table 3) or by UID (Table 4).
(3) The user checked the checkbox in "Include suspect heights in subsidence areas" as shown in Figure 1.

An example PID that produces this message on a datasheet is BH3030 (assumes that the user checked the checkbox mentioned in Figure 1):

```
BH3030                          SUPERSEDED SURVEY CONTROL
BH3030
BH3030  NAD 83(2007)-  30 36 54.97870(N)    088 55 20.53572(W) AD(       ) 0
BH3030  ELLIP H (02/10/07)   -7.623  (m)                       GP(       )
BH3030  ELLIP H (04/15/02)   -7.652  (m)                       GP(       ) 4 2
BH3030  NAD 83(1993)-  30 36 54.97869(N)    088 55 20.53558(W) AD(       ) B
BH3030  ELLIP H (02/15/02)   -7.657  (m)                       GP(       ) 4 1
BH3030  NAVD 88 (02/15/02)   21.03   (m)           69.0    (f) LEVELING    3
BH3030  NAVD 88 (05/22/96)   21.034  (m)           69.01   (f) ADJUSTED    2 2
BH3030
BH3030 ** No published orthometric height exists and therefore all are
BH3030 ** considered suspect. This station did not take part in a recent
BH3030 ** survey which established orthometric heights in the area.  Therefore,
BH3030 ** any previously published orthometric heights have not been validated.
BH3030 ** NGS does not recommend using suspect or superseded heights as control
BH3030 ** unless they can be validated or a new NAVD88 height established.
```

```
BH3030 ** If this station were to take part in a new project and submitted
BH3030 ** to NGS a new height could be published.
```

Version 7.88.4 released at 3:38pm on 07/03/2012

This release incorporates the datasheet changes needed to release the new GEOID12 model on datasheets. In addition, there are some minor updates to the datasheet code to make sure that the dtm_tag of PA11 come out (versus 2011) on the datasheets whenever we have a passive mark in the Northern Mariana Islands (CQ), and MA11 whenever we have a passive mark in American Samoa (AS), or Hawaii (HI).

Test 1: Make sure that the geoid model, GEOID12, comes out properly on datasheets.

```
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 AC6803 ***********************************************************************
 AC6803  HT_MOD      -  This is a Height Modernization Survey Station.
 AC6803  PACS        -  This is a Primary Airport Control Station.
 AC6803  DESIGNATION -  AZC A
 AC6803  PID         -  AC6803
 AC6803  STATE/COUNTY-  AZ/MOHAVE
 AC6803  COUNTRY     -  US
 AC6803  USGS QUAD   -  LOST SPRING MTN EAST (1988)
 AC6803
 AC6803                        *CURRENT SURVEY CONTROL
 AC6803  ______________________________________________________________________
 AC6803* NAD 83(2007) POSITION- 36 57 59.55377(N) 113 00 32.22917(W)   ADJUSTED
 AC6803* NAD 83(2007) ELLIP HT-  1462.787 (meters)        (02/10/07)   ADJUSTED
 AC6803* NAD 83(2007) EPOCH   -  2007.00
 AC6803* NAVD 88 ORTHO HEIGHT -  1485.59   (meters)    4874.0   (feet) GPS OBS
 AC6803  ______________________________________________________________________
 AC6803  NAVD 88 orthometric height was determined with geoid model    GEOID09
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                     GEOID09
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                     GEOID12
 AC6803  NAD 83(2007) X  - -1,994,789.496 (meters)                     COMP
 AC6803  NAD 83(2007) Y  - -4,697,388.731 (meters)                     COMP
 AC6803  NAD 83(2007) Z  -  3,815,306.819 (meters)                     COMP
 AC6803  LAPLACE CORR    -          3.37  (seconds)                    DEFLEC09
```

Test 2: Make sure that if we have a mark in CONUS, Alaska, Hawaii, American Samoa, Guam, or The Northern Marianna Islands but not in within the GEOID12 model range, that we output the default geoid model, EGM08, on the datasheets.

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.89
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 DK2827 ***********************************************************************
 DK2827  DESIGNATION -  AGRIHAN LDGO
 DK2827  PID         -  DK2827
 DK2827  STATE/COUNTY-  CQ/NORTHERN ISLANDS
 DK2827  COUNTRY     -  CQ
 DK2827  USGS QUAD   -
 DK2827
 DK2827                        *CURRENT SURVEY CONTROL
 DK2827  ______________________________________________________________________
 DK2827* NAD 83(2002) POSITION- 18 44 07.79870(N) 214 20 53.73575(W)   ADJUSTED
 DK2827* NAD 83(2002) ELLIP HT-     48.919 (meters)        (01/09/08)   ADJUSTED
 DK2827* NAD 83(2002) EPOCH   -  2002.00
 DK2827* NMVD03  ORTHO HEIGHT -      2.4    (meters)       8.    (feet) GPS OBS
 DK2827  ______________________________________________________________________
 DK2827  NMVD03 orthometric height was determined with geoid model     EGM96
 DK2827  GEOID HEIGHT    -         45.30  (meters)                     EGM96
 DK2827  GEOID HEIGHT    -         46.30  (meters)                     EGM08
 DK2827  NAD 83(2002) X  - -4,988,665.601 (meters)                     COMP
 DK2827  NAD 83(2002) Y  -  3,409,197.710 (meters)                     COMP
 DK2827  NAD 83(2002) Z  -  2,035,660.686 (meters)                     COMP
 DK2827  HORZ ORDER      -  FIRST
 DK2827  ELLP ORDER      -  FOURTH    CLASS I
```

Test Case 3: Make sure that if we have a passive mark in the Northern Mariana Islands (CQ), that we have a realization of MA11 on the datasheet.

```
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 AA4415 ***********************************************************************
 AA4415  FBN         -  This is a Federal Base Network Control Station.
 AA4415  DESIGNATION -  SPN A
 AA4415  PID         -  AA4415
 AA4415  STATE/COUNTY-  CQ/SAIPAN
 AA4415  COUNTRY     -  CQ
 AA4415  USGS QUAD   -
 AA4415
 AA4415                        *CURRENT SURVEY CONTROL
 AA4415  ______________________________________________________________________
 AA4415* NAD 83(MA11) POSITION- 15 06 56.52397(N) 214 17 00.36074(W)   ADJUSTED
 AA4415* NAD 83(MA11) ELLIP HT-   117.361 (meters)        (06/06/12)   ADJUSTED
 AA4415* NAD 83(MA11) EPOCH   -  2010.00
 AA4415* NMVD03  ORTHO HEIGHT -    62.989  (meters)     206.66  (feet) ADJUSTED
 AA4415  ______________________________________________________________________
 AA4415  NAD 83(MA11) X  - -5,088,923.250 (meters)                     COMP
 AA4415  NAD 83(MA11) Y  -  3,469,272.397 (meters)                     COMP
 AA4415  NAD 83(MA11) Z  -  1,652,493.406 (meters)                     COMP
 AA4415  LAPLACE CORR    -         -4.57  (seconds)                    DEFLEC09
 AA4415  GEOID HEIGHT    -         54.35  (meters)                     GEOID12
 AA4415  VERT ORDER      -  FIRST     CLASS II
```

Test Case 4: Make sure that if we have a passive mark in American Samoa (AS), that we have a realization of PA11 on the datasheet.

```
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 AA4457 ***********************************************************************
 AA4457  FBN         -  This is a Federal Base Network Control Station.
 AA4457  DESIGNATION -  ROSE
 AA4457  PID         -  AA4457
 AA4457  STATE/COUNTY-  AS/ROSE ISLAND
 AA4457  COUNTRY     -  US
 AA4457  USGS QUAD   -
 AA4457
 AA4457                        *CURRENT SURVEY CONTROL
 AA4457  ______________________________________________________________________
 AA4457* NAD 83(PA11) POSITION- 14 32 52.97424(S) 168 08 43.80253(W)   ADJUSTED
 AA4457* NAD 83(PA11) ELLIP HT-    25.595 (meters)        (06/06/12)   ADJUSTED
 AA4457* NAD 83(PA11) EPOCH   -  2010.00
 AA4457* LMSL    ORTHO HEIGHT -     2.2    (meters)       7.    (feet) GPS OBS
 AA4457  ______________________________________________________________________
 AA4457  LMSL orthometric height was determined with geoid model       OSU 91A
 AA4457  GEOID HEIGHT    -         20.75  (meters)                     OSU 91A
 AA4457  GEOID HEIGHT    -         22.94  (meters)                     GEOID12
 AA4457  NAD 83(PA11) X  - -6,043,268.941 (meters)                     COMP
 AA4457  NAD 83(PA11) Y  - -1,268,505.041 (meters)                     COMP
 AA4457  NAD 83(PA11) Z  - -1,591,753.094 (meters)                     COMP
 AA4457  LAPLACE CORR    -          2.38  (seconds)                    DEFLEC09
```

Test Case 5: Make sure that if we have a passive mark in Hawaii (HI), that we have a realization of PA11 on the datasheet.

```
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 AA3587 ***********************************************************************
 AA3587  FBN         -  This is a Federal Base Network Control Station.
 AA3587  DESIGNATION -  1311 NCMN C
 AA3587  PID         -  AA3587
 AA3587  STATE/COUNTY-  HI/KAUAI
 AA3587  COUNTRY     -  US
 AA3587  USGS QUAD   -  MAKAHA POINT (1983)
 AA3587
 AA3587                        *CURRENT SURVEY CONTROL
 AA3587  ______________________________________________________________________
 AA3587* NAD 83(PA11) POSITION- 22 07 33.05007(N) 159 39 54.88060(W)   ADJUSTED
 AA3587* NAD 83(PA11) ELLIP HT-  1155.422 (meters)        (06/06/12)   ADJUSTED
 AA3587* NAD 83(PA11) EPOCH   -  2010.00
 AA3587* LMSL    ORTHO HEIGHT -  1138.1    (meters)    3734.    (feet) GPS OBS
 AA3587  ______________________________________________________________________
 AA3587  LMSL orthometric height was determined with geoid model       GEOID93
 AA3587  GEOID HEIGHT    -         17.55  (meters)                     GEOID93
 AA3587  GEOID HEIGHT    -         16.77  (meters)                     GEOID12
 AA3587  NAD 83(PA11) X  - -5,543,855.433 (meters)                     COMP
 AA3587  NAD 83(PA11) Y  - -2,054,558.291 (meters)                     COMP
 AA3587  NAD 83(PA11) Z  -  2,387,762.831 (meters)                     COMP
 AA3587  LAPLACE CORR    -          6.08  (seconds)                    DEFLEC09
```

Test Case 6: Make sure EGM08 is still the latest GEOID model for scan_idb (internal NGS) datasheets for the world outside of the US territories/states, Caribbean, and Mexico. These foreign datasheets are not published for the public, hence you have to run datasheets with the scan_idb option. Use a France datasheet for the example below.

```
1        National Geodetic Survey,   Retrieval Date = JUNE 29, 2012
 BF4526 ***********************************************************************
 BF4526  DESIGNATION -  BASE
 BF4526  PID         -  BF4526
 BF4526  STATE/COUNTY-  FR/
 BF4526  COUNTRY     -  HO
 BF4526  USGS QUAD   -
 BF4526
 BF4526                        *CURRENT SURVEY CONTROL
 BF4526  ______________________________________________________________________
 BF4526* NAD 83(2001) POSITION- 14 04 27.48061(N) 087 12 08.91145(W)   ADJUSTED
 BF4526* NAD 83(2001) ELLIP HT-   973.013 (meters)        (05/23/02)   ADJUSTED
 BF4526* LMSL    ORTHO HEIGHT -          **(meters)           **(feet)
 BF4526  ______________________________________________________________________
 BF4526  NAD 83(2001) X  -    302,056.428 (meters)                      COMP
 BF4526  NAD 83(2001) Y  - -6,181,466.113 (meters)                      COMP
 BF4526  NAD 83(2001) Z  -  1,541,193.513 (meters)                      COMP
 BF4526  GEOID HEIGHT    -          5.38  (meters)                      EGM08
 BF4526  HORZ ORDER      -  A
 BF4526  ELLP ORDER      -  FOURTH    CLASS I
```

Version 7.88.3 released at 9:49am on 06/06/2012

This release makes EGM08 as the primary GEOID model for the Caribbean, Mexico, and the non-US World. **There were no changes in the deflections that coincided with EGM08 at this time.**

The datasheet that stirred this request was for AB9264.

```
AB9264  LMSL orthometric height was determined with geoid model       EGM96
AB9264  GEOID HEIGHT    -        -26.08  (meters)                     EGM96
AB9264  GEOID HEIGHT    -        -24.15  (meters)                     CARIB97
AB9264  NAD 83(2007) X  -  2,238,773.938 (meters)                     COMP
AB9264  NAD 83(2007) Y  - -5,819,521.182 (meters)                     COMP
AB9264  NAD 83(2007) Z  -  1,337,705.718 (meters)                     COMP
AB9264  LAPLACE CORR    -         -0.62  (seconds)                    DCAR97
```

Now that EGM08 is in place with this release one will see the following datasheet for AB9264:

```
AB9264  LMSL orthometric height was determined with geoid model       EGM96
AB9264  GEOID HEIGHT    -        -26.08  (meters)                     EGM96
AB9264  GEOID HEIGHT    -        -24.40  (meters)                     EGM08
AB9264  NAD 83(2007) X  -  2,238,773.938 (meters)                     COMP
AB9264  NAD 83(2007) Y  - -5,819,521.182 (meters)                     COMP
AB9264  NAD 83(2007) Z  -  1,337,705.718 (meters)                     COMP
AB9264  LAPLACE CORR    -         -0.62  (seconds)                    DCAR97
```

Version 7.88.2 released at 9:35am on 06/05/2012

This release simply removes the line below highlighted in red for any mark that has ITRF positions.

```
AF9520 ***********************************************************************
AF9520  CORS         -  This is a GPS Continuously Operating Reference Station.
AF9520  DESIGNATION -  WESTFORD CORS ARP
AF9520  CORS_ID      -  WES2
AF9520  PID          -  AF9520
AF9520  STATE/COUNTY-  MA/MIDDLESEX
AF9520  COUNTRY      -  US
AF9520  USGS QUAD    -
AF9520
AF9520                        *CURRENT SURVEY CONTROL
AF9520  ______________________________________________________________________
AF9520* NAD 83(CORS) POSITION- 42 36 47.97506(N) 071 29 35.96894(W)   ADJUSTED
AF9520* NAD 83(CORS) ELLIP HT-    86.217 (meters)        (09/??/08)   ADJUSTED
AF9520* NAD 83(CORS) EPOCH    -  2002.00
AF9520* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
AF9520  ______________________________________________________________________
AF9520  NAD 83(CORS) X  -  1,492,233.923 (meters)                       COMP
AF9520  NAD 83(CORS) Y  - -4,458,090.929 (meters)                       COMP
AF9520  NAD 83(CORS) Z  -  4,296,046.095 (meters)                       COMP
AF9520  GEOID HEIGHT    -        -27.81  (meters)                       GEOID09
AF9520  HORZ ORDER      -  SPECIAL (CORS)
AF9520  ELLP ORDER      -  SPECIAL (CORS)
AF9520
AF9520.ITRF positions are available for this station.
AF9520
```

This request also corrects the SPC codes(s) for the Islands off the coast of California in LA county.

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.88.1
1        National Geodetic Survey,   Retrieval Date = MAY  4, 2012
 TZ1896 ***********************************************************************
 TZ1896  DESIGNATION -  GRAY RESET
 TZ1896  PID         -  TZ1896
 TZ1896  STATE/COUNTY-  CA/LOS ANGELES
 TZ1896  COUNTRY     -  US
 TZ1896  USGS QUAD   -  SAN CLEMENTE ISLAND SOUTH (1980)
 TZ1896
 TZ1896                        *CURRENT SURVEY CONTROL
 TZ1896  ______________________________________________________________________
 TZ1896* NAD 83(1992) POSITION- 32 51 58.03827(N) 118 25 50.91215(W)   ADJUSTED
 TZ1896* NAD 83(1992) EPOCH   -  1991.35
 TZ1896* NAVD 88 ORTHO HEIGHT -   513.     (meters)    1683.    (feet) SCALED
 TZ1896  ______________________________________________________________________
 TZ1896  NAVD 88 orthometric height was determined with geoid model    RAPP078
 TZ1896  GEOID HEIGHT    -        -36.78  (meters)                     RAPP078
 TZ1896  GEOID HEIGHT    -        -37.05  (meters)                     GEOID09
 TZ1896  LAPLACE CORR    -         -4.28  (seconds)                    DEFLEC09
 TZ1896  HORZ ORDER      -  SECOND
 TZ1896
 TZ1896.The horizontal coordinates were established by classical geodetic methods
 TZ1896.and adjusted by the National Geodetic Survey in June 1996.
 TZ1896.
 TZ1896.The orthometric height was scaled from a topographic map.
 TZ1896
 TZ1896.The Laplace correction was computed from DEFLEC09 derived deflections.
 TZ1896
 TZ1896. The following values were computed from the NAD 83(1992) position.
 TZ1896
 TZ1896;                    North         East     Units Scale Factor Converg.
 TZ1896;SPC CA 5     -   429,763.530 1,959,660.527   MT  1.00045692   -0 14 44.0
 TZ1896;SPC CA 5     - 1,409,982.51  6,429,319.58   sFT  1.00045692   -0 14 44.0
 TZ1896;UTM  11      - 3,637,352.543   366,132.531   MT  0.99982097   -0 46 35.7
 TZ1896
 TZ1896!             -  Elev Factor  x  Scale Factor =   Combined Factor
 TZ1896!SPC CA 5     -   0.99992532  x   1.00045692  =   1.00038221
 TZ1896!UTM  11      -   0.99992532  x   0.99982097  =   0.99974631
```

This mark is in the Channel Islands in the county of LA in the state of California. Its SPC zone should be 6 and not 5. This is a special case scenario.

Finally, this release resolves the issue reported about the geoid height model, RAPP078, coming out on the two lines highlighted in red below.

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.88.1
1        National Geodetic Survey,   Retrieval Date = MAY  4, 2012
 KT1859 ***********************************************************************
 KT1859  DESIGNATION -  QUEEN
 KT1859  PID         -  KT1859
 KT1859  STATE/COUNTY-  CA/COLUSA
 KT1859  COUNTRY     -  US
 KT1859  USGS QUAD   -  WILLIAMS (1994)
 KT1859
 KT1859                         *CURRENT SURVEY CONTROL
 KT1859  ______________________________________________________________________
 KT1859* NAD 83(1992) POSITION- 39 09 09.46601(N) 122 13 45.34394(W)   ADJUSTED
 KT1859* NAD 83(1992) EPOCH   -  1991.35
 KT1859* NAVD 88 ORTHO HEIGHT -    37.5    (meters)     123.    (feet) VERTCON
 KT1859  ______________________________________________________________________
 KT1859  NAVD 88 orthometric height was determined with geoid model    RAPP078
 KT1859  GEOID HEIGHT    -        -30.08  (meters)                     RAPP078
 KT1859  GEOID HEIGHT    -        -29.97  (meters)                     GEOID09
 KT1859  LAPLACE CORR    -         -0.67  (seconds)                    DEFLEC09
 KT1859  HORZ ORDER      -  SECOND
 KT1859
 KT1859.The horizontal coordinates were established by classical geodetic methods
 KT1859.and adjusted by the National Geodetic Survey in March 1994.
 KT1859.
 KT1859.The NAVD 88 height was computed by applying the VERTCON shift value to
 KT1859.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
 KT1859
 KT1859.The Laplace correction was computed from DEFLEC09 derived deflections.
 KT1859
 KT1859. The following values were computed from the NAD 83(1992) position.
 KT1859
 KT1859;                    North         East     Units Scale Factor Converg.
 KT1859;SPC CA 2     -   664,975.040 1,980,184.276   MT  0.99991537   -0 08 40.4
 KT1859;SPC CA 2     - 2,181,672.28  6,496,654.58   sFT  0.99991537   -0 08 40.4
 KT1859;UTM  10      - 4,333,997.083   566,596.326   MT  0.99965461   +0 29 11.9
 KT1859
 KT1859!             -  Elev Factor  x  Scale Factor =   Combined Factor
 KT1859!SPC CA 2     -   0.99999882  x   0.99991537  =   0.99991419
 KT1859!UTM  10      -   0.99999882  x   0.99965461  =   0.99965344
 KT1859
 KT1859:                Primary Azimuth Mark                    Grid Az
 KT1859:SPC CA 2     -  QUEEN AZ MK                             273 42 00.4
 KT1859:UTM  10      -  QUEEN AZ MK                             273 04 08.1
 KT1859
 KT1859|-----------------------------------------------------------------------|
 KT1859| PID    Reference Object                    Distance      Geod. Az  |
 KT1859|                                                          dddmmss.s |
 KT1859| DB6562 QUEEN RM 1                          22.336 METERS 04339     |
 KT1859| DB6561 QUEEN AZ MK                                       2733320.0 |
 KT1859| DB6563 QUEEN RM 2                          18.564 METERS 33120     |
 KT1859|-----------------------------------------------------------------------|
 KT1859
 KT1859                          SUPERSEDED SURVEY CONTROL
 KT1859
 KT1859  NAD 83(1986)-  39 09 09.45928(N)    122 13 45.33661(W) AD(1984.00) 2
 KT1859  NAD 27      -  39 09 09.85283(N)    122 13 41.42228(W) AD(       ) 2
 KT1859  NGVD 29 (07/19/86)   36.7    (m)          120.     (f) VERT ANG
 KT1859
```

```
KT1859.Superseded values are not recommended for survey control.
KT1859.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
KT1859.See file dsdata.txt to determine how the superseded data were derived.
KT1859
KT1859_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SEJ6659633997(NAD 83)
KT1859
KT1859_MARKER: Z = SEE DESCRIPTION
KT1859_SETTING: 0 = UNSPECIFIED SETTING
KT1859
KT1859  HISTORY     - Date     Condition        Report By
KT1859  HISTORY     - 1972     MONUMENTED       CADT
KT1859  HISTORY     - 20120210 MARK NOT FOUND   CADT
KT1859
KT1859                          STATION DESCRIPTION
KT1859
KT1859'DESCRIBED BY CALTRANS 1972 (MLS)
KT1859'THE STATION IS LOCATED ABOUT 4.4 MILES WEST OF WILLIAMS AND
KT1859'ABOUT 9.0 MILES SOUTH OF MAXWELL ALONG HIGHWAY 20.
KT1859'
KT1859'TO REACH STATION FROM THE U.S. POST OFFICE IN WILLIAMS, GO WEST
KT1859'ON E STREET 1.2 MILES TO HIGHWAY 20, TURN LEFT ON HIGHWAY 20 AND
KT1859'GO 3.0 MILES TO DRIVEWAY ON LEFT, TURN LEFT ON DRIVEWAY AND GO
KT1859'ABOUT 50 FEET TO STATION ON RIGHT.
KT1859'
KT1859'STATION MARK IS A DIVISION OF HIGHWAYS BRASS DISK STAMPED QUEEN
KT1859'1972, SET IN CONCRETE POST PROJECTING 0.3 FOOT AND 5.5 FEET WEST
KT1859'OF FENCE LINE, 51.2 FEET SOUTH OF FENCE LINE, 93.4 FEET SOUTH OF
KT1859'THE CENTER LINE OF HIGHWAY 20.
KT1859'
KT1859'AN UNDERGROUND MARK IDENTICAL WITH SURFACE DISK WAS SET IN
KT1859'CONCRETE 3.0 FEET BELOW GROUND.
KT1859'
KT1859'REFERENCE MARK 1 IS A DIVISION OF HIGHWAYS BRASS DISK STAMPED
KT1859'QUEEN RM NO. 1 1972, SET IN CONCRETE POST PROJECTING 0.2 FOOT AND
KT1859'0.3 FOOT LOWER THAN STATION, 1.5 FEET NORTH OF FENCE LINE, 2.3
KT1859'FEET WEST OF TELEPHONE POLE, 19.7 FEET EAST OF FENCE CORNER, 39.8
KT1859'FEET SOUTH OF THE CENTER LINE OF HIGHWAY 20.
KT1859'
KT1859'REFERENCE MARK 2 IS A DIVISION OF HIGHWAYS BRASS DISK STAMPED
KT1859'QUEEN RM NO. 2 1972, SET IN CONCRETE POST PROJECTING 0.2 FOOT
KT1859'AND 0.2 FOOT LOWER THAN STATION, 1.3 FEET NORTH OF FENCE LINE,
KT1859'33.8 FEET WEST OF FENCE CORNER, 40.0 FEET SOUTH OF THE CENTER LINE
KT1859'OF HIGHWAY 20.
KT1859'
KT1859'AZIMUTH MARK IS A DIVISION OF HIGHWAYS BRASS DISK STAMPED QUEEN
KT1859'AZIMUTH MARK 1972, SET IN CONCRETE POST PROJECTING 0.2 FOOT AND
KT1859'4.5 FEET EAST OF POWER POLE, 32.6 FEET EAST OF GRAVELED FIELD
KT1859'ROAD, 38.2 FEET NORTH OF THE CENTER LINE OF HIGHWAY 20.
KT1859'
KT1859'TO REACH THE AZIMUTH MARK FROM STATION, CONTINUE WEST ON HIGHWAY
KT1859'20 0.5 MILE TO AZIMUTH MARK ON RIGHT.
KT1859'
KT1859'HEIGHT OF LIGHT ABOVE STATION MARK 3.67 METERS.
KT1859
KT1859                          STATION RECOVERY (2012)
KT1859
KT1859'RECOVERY NOTE BY CALTRANS 2012 (GGC)
KT1859'MARK NOT FOUND.

*** retrieval complete.
Elapsed Time = 00:00:02
```

Version 7.88.1 released at 12:02pm on 05/04/2012

This minor release corrected the datasheet95 scan_idb by_stream command line option so that in-house NGS users could extract multiple datasheets within a single command. The program was giving zero results on this option.

Test Command: datasheet95 scan_idb by_stream X-0-0-0-0-0 "AC6803+UA0024"

```
1        National Geodetic Survey,   Retrieval Date = MAY  4, 2012
 AC6803 ***********************************************************************
 AC6803  HT_MOD      -  This is a Height Modernization Survey Station.
 AC6803  PACS        -  This is a Primary Airport Control Station.
 AC6803  DESIGNATION -  AZC A
 AC6803  PID         -  AC6803
 AC6803  STATE/COUNTY-  AZ/MOHAVE
 AC6803  COUNTRY     -  US
 AC6803  USGS QUAD   -  LOST SPRING MTN EAST (1988)
 AC6803
 AC6803                        *CURRENT SURVEY CONTROL
 AC6803  ______________________________________________________________________
 AC6803* NAD 83(2007) POSITION- 36 57 59.55377(N) 113 00 32.22917(W)   ADJUSTED
 AC6803* NAD 83(2007) ELLIP HT-  1462.787 (meters)        (02/10/07)   ADJUSTED
 AC6803* NAD 83(2007) EPOCH   -  2007.00
 AC6803* NAVD 88 ORTHO HEIGHT -  1485.59   (meters)    4874.0   (feet) GPS OBS
 AC6803  ______________________________________________________________________
 AC6803  GEOID HEIGHT    -        -22.80  (meters)                    GEOID09
 AC6803  NAD 83(2007) X  - -1,994,789.496 (meters)                    COMP
 AC6803  NAD 83(2007) Y  - -4,697,388.731 (meters)                    COMP
 AC6803  NAD 83(2007) Z  -  3,815,306.819 (meters)                    COMP
 AC6803  LAPLACE CORR    -          3.37  (seconds)                   DEFLEC09
 AC6803
 AC6803  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AC6803  Type                                          Horiz  Ellip  Dist(km)
 AC6803  ----------------------------------------------------------------------
 AC6803  NETWORK                                        0.85   1.37
 AC6803  ----------------------------------------------------------------------
 AC6803  MEDIAN LOCAL ACCURACY AND DIST (008 points)   0.83   1.41     44.46
 AC6803  ----------------------------------------------------------------------
 AC6803  NOTE: Click here for information on individual local accuracy
 AC6803  values and other accuracy information.
 AC6803
 AC6803
 AC6803.This mark is at Colorado City Municipal Airport (AZC)
 AC6803
 AC6803.The horizontal coordinates were established by GPS observations
 AC6803.and adjusted by the National Geodetic Survey in February 2007.
 AC6803
 AC6803.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AC6803.See www.ngs.noaa.gov/web/surveys/NSRS2007 for more information.
 AC6803
 AC6803.The horizontal coordinates are valid at the epoch date displayed above
 AC6803.which is a decimal equivalence of Year/Month/Day.
 AC6803
 AC6803.The orthometric height was determined by GPS observations and a
 AC6803.high-resolution geoid model.
 AC6803
 AC6803.GPS derived orthometric heights for airport stations designated as
 AC6803.PACS or SACS are published to 2 decimal places.  This maintains
 AC6803.centimeter relative accuracy between the PACS and SACS.  It does
 AC6803.not indicate centimeter accuracy relative to other marks which are
```

```
AC6803.part of the NAVD 88 network.
AC6803
AC6803.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AC6803
AC6803.The Laplace correction was computed from DEFLEC09 derived deflections.
AC6803
AC6803.The ellipsoidal height was determined by GPS observations
AC6803.and is referenced to NAD 83.
AC6803
AC6803. The following values were computed from the NAD 83(2007) position.
AC6803
AC6803;                    North         East     Units Scale Factor Converg.
AC6803;SPC AZ W     -   662,036.150   279,346.877   MT  0.99998696   +0 26 44.3
AC6803;SPC AZ W     - 2,172,034.61    916,492.38   iFT  0.99998696   +0 26 44.3
AC6803;UTM  12      - 4,093,046.689   321,162.779   MT  0.99999401   -1 12 30.2
AC6803
AC6803!             -  Elev Factor  x  Scale Factor =   Combined Factor
AC6803!SPC AZ W     -   0.99977049  x   0.99998696  =   0.99975746
AC6803!UTM  12      -   0.99977049  x   0.99999401  =   0.99976451
AC6803
AC6803|----------------------------------------------------------------------|
AC6803| PID    Reference Object                     Distance      Geod. Az  |
AC6803|                                                           dddmmss.s |
AC6803| AE3181 AZC CL END RWY 20                    68.963 METERS 15655     |
AC6803|----------------------------------------------------------------------|
AC6803
AC6803                          SUPERSEDED SURVEY CONTROL
AC6803
AC6803  ELLIP H (01/12/01) 1462.805  (m)                        GP(       ) 4 1
AC6803  NAD 83(1992)-  36 57 59.55345(N)    113 00 32.22767(W) AD(       ) B
AC6803  ELLIP H (03/14/97) 1462.873  (m)                        GP(       ) 3 1
AC6803  NAVD 88 (02/17/09) 1485.56   (m)  GEOID03 model used   GPS OBS
AC6803  NAVD 88 (03/14/97) 1485.51   (m)  GEOID96 model used   GPS OBS
AC6803
AC6803.Superseded values are not recommended for survey control.
AC6803.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AC6803.See file dsdata.txt to determine how the superseded data were derived.
AC6803
AC6803_U.S. NATIONAL GRID SPATIAL ADDRESS: 12SUF2116293046(NAD 83)
AC6803
AC6803_MARKER: F = FLANGE-ENCASED ROD
AC6803_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AC6803_STAMPING: AZC A 1996
AC6803_MARK LOGO: NGS
AC6803_PROJECTION: FLUSH
AC6803_MAGNETIC: I = MARKER IS A STEEL ROD
AC6803_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AC6803_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AC6803+SATELLITE: SATELLITE OBSERVATIONS - September 10, 2008
AC6803_ROD/PIPE-DEPTH: 20.6 meters
AC6803
AC6803  HISTORY     - Date     Condition        Report By
AC6803  HISTORY     - 1996     MONUMENTED       CHANCE
AC6803  HISTORY     - 19970506 GOOD             NGS
AC6803  HISTORY     - 20080910 GOOD             GEOANA
AC6803
AC6803                          STATION DESCRIPTION
AC6803
AC6803'DESCRIBED BY JE CHANCE AND ASSOCIATES 1996 (SDC)
AC6803'THE STATION IS LOCATED APPROXIMATELY 6.5 KM (4.05 MI) SOUTHWEST OF THE
AC6803'TOWN OF COLORADO CITY AT THE COLORADO CITY MUNICIPAL AIRPORT.
AC6803'OWNERSHIP -- TOWN OF COLORADO CITY, LADELL BISTLINE - AIRPORT MANAGER,
AC6803'PHONE (520) 875-2308 TO REACH THE STATION FROM MILEPOST 1.4 OF STATE
```

AC6803'HIGHWAY 389 NEAR COLORADO CITY AT THE JUNCTION WITH A PAVED ROAD,
AC6803'PROCEED WEST ON THE PAVED ROAD FOR 1.3 KM (0.80 MI) , SOUTH FOR 2.4 KM
AC6803'(1.50 MI) , THEN WEST FOR 0.8 KM (0.50 MI) TO THE AIRPORT TERMINAL AND
AC6803'GATE. PROCEED THROUGH GATE AND CONTINUE WESTERLY ACROSS APRON AND
AC6803'TAXIWAY FOR 0.15 KM (0.10 MI) TO THE JUNCTION WITH RUNWAY 2-20. TURN
AC6803'RIGHT AND GO NORTH-NORTHEAST ALONG RUNWAY 2-20 FOR 0.65 KM (0.40 MI)
AC6803'TO THE END OF THE RUNWAY AND THE STATION ON THE LEFT THE STATION IS
AC6803'THE TOP CENTER OF A STAINLESS STEEL ROD DRIVEN TO REFUSAL AT A DEPTH
AC6803'OF 20.60 M (67.59 FT) RECESSED 12 CM BELOW GROUND LEVEL IN A 2.5 CM
AC6803'DIA GREASE FILLED FINNED PLASTIC SLEEVE 90 CM LONG ENCASED IN A 12.7
AC6803'CM DIA PVC PIPE WITH NGS LOGO CAP SURROUNDED BY CONCRETE. THE LOGO
AC6803'CAP AND CONCRETE ARE SET FLUSH WITH THE GROUND. THE STATION IS LOCATED
AC6803'7.30 M (23.95 FT) SOUTHEAST OF A FENCE, 62.00 M (203.41 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE APPROACH END OF RUNWAY
AC6803'20, 57.60 M (188.98 FT) NORTH-NORTHWEST OF THE NORTHWESTERNMOST
AC6803'THRESHOLD LIGHT, 43.85 M (143.86 FT) NORTHEAST OF A STEEL FENCE POST
AC6803'SUPPORT THAT IS IN LINE WITH A NORTHWESTERLY EXTENSION OF THE NORTHERN
AC6803'EDGE OF RUNWAY 20, 109.2 M (358.3 FT) SOUTH-SOUTHWEST OF THE
AC6803'NORTHWESTERN FENCE CORNER, AND 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST THE STATION IS DESIGNATED AS A PRIMARY AIRPORT CONTROL
AC6803'STATION (PACS) - ARIZONA ANA SURVEYS 1996
AC6803
AC6803   STATION RECOVERY (1997)
AC6803
AC6803'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)
AC6803'THE STATION IS LOCATED ABOUT 5.0 KM (3.10 MI) SOUTHWEST OF COLORADO
AC6803'CITY AT THE COLORADO CITY MUNICIPAL AIRPORT, ALONG THE WEST SIDE OF
AC6803'AND NEAR THE NORTH END OF RUNWAY 2-20. OWNERSHIP--CITY OF COLORADO
AC6803'CITY, LADELL BISTLINE, AIRPORT MANAGER, BOX 70, COLORADO CITY, AZ
AC6803'86021. THE PHONE NUMBER IS (520) 875-2646. TO REACH THE STATION FROM
AC6803'THE JUNCTION OF STATE HIGHWAY 389 AND THE ARIZONA/UTAH STATE LINE, GO
AC6803'SOUTHEASTERLY FOR 2.2 KM (1.35 MI) ON THE HIGHWAY TO A PAVED ROAD
AC6803'RIGHT. TURN RIGHT AND GO WEST THEN SOUTH ON MOHAVE AVENUE THEN
AC6803'REDWOOD STREET (THERE ARE NO STREET SIGNS) FOR 3.7 KM (2.30 MI) TO A
AC6803'PAVED ROAD RIGHT. TURN RIGHT AND GO WEST THEN SOUTH FOR 0.9 KM (0.55
AC6803'MI) ON AIRPORT AVENUE (THERE IS NO STREET SIGN) TO A LOCKED GATE AND
AC6803'THE AIRPORT ADMINISTRATIVE BUILDING (UNATTENDED) ON THE RIGHT. PASS
AC6803'THROUGH THE LOCKED GATE AND GO NORTHWEST FOR 0.2 KM (0.10 MI) ACROSS A
AC6803'RAMP AND ALONG A TAXIWAY TO RUNWAY 2-20. TURN RIGHT AND GO NORTHEAST
AC6803'FOR 0.6 KM (0.35 MI) ALONG THE RUNWAY TO THE STATION ON THE LEFT JUST
AC6803'PAST RUNWAY END 20. THE STATION IS LOCATED 61.9 M (203.1 FT)
AC6803'NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE RUNWAY, 53.6 M (175.9
AC6803'FT) NORTHWEST OF THE EXTENDED CENTER OF THE RUNWAY, 7.3 M (24.0 FT)
AC6803'SOUTHEAST OF A FENCE LINE, 0.9 M (3.0 FT) SOUTHEAST OF A CARSONITE
AC6803'WITNESS POST, AND THE MONUMENT IS FLUSH WITH THE GROUND SURFACE.
AC6803'NOTE--AIRPORT IS UNATTENDED. A PHILLIPS SCREW DRIVER IS REQUIRED TO
AC6803'ACCESS THE DATUM POINT THROUGH THE LOGO CAP. THIS STATION SELECTED AS
AC6803'THE PACS FOR THIS AIRPORT.
AC6803
AC6803   STATION RECOVERY (2008)
AC6803
AC6803'RECOVERY NOTE BY GEODETIC ANALYSIS LLC 2008 (MLD)
AC6803'RECOVERED AS DESCRIBED. ADDITIONAL INFORMATION FOLLOWS.
AC6803'
AC6803'OWNERSHIP--TOWN OF COLORADO CITY P.O. BOX 70, COLORADO CITY, ARIZONA
AC6803'86021, PHONE 928-875-2646.
AC6803'
AC6803'NOTE--ACCESS TO AIRPORT IS THROUGH AN ELECTRIC GATE THAT REQUIRES A
AC6803'SECURITY CODE TO OPEN. AIRPORT MANAGER IS LADELL BISTLINE, BOX 726,
AC6803'COLORADO CITY, ARIZONA 86021, PHONE 928-875-2871. AIRPORT MANAGER
AC6803'HOME PHONE IS 928-875-2308 AND CELL PHONE IS 435-616-2871.
AC6803'
AC6803'NOTE--A DIMPLE WAS DRILLED INTO THE TOP OF THE ROD TO ACCEPT THE TIP

```
 AC6803'OF A FIXED HEIGHT POLE.
1        National Geodetic Survey,   Retrieval Date = MAY  4, 2012
 UA0024 ***********************************************************************
 UA0024  FBN         -  This is a Federal Base Network Control Station.
 UA0024  DESIGNATION -  JEFFERSON PIER
 UA0024  PID         -  UA0024
 UA0024  STATE/COUNTY-  DC/DISTRICT OF COLUMBIA
 UA0024  COUNTRY     -  US
 UA0024  USGS QUAD   -  WASHINGTON WEST (1983)
 UA0024
 UA0024                        *CURRENT SURVEY CONTROL
 UA0024  ______________________________________________________________________
 UA0024* NAD 83(2007) POSITION- 38 53 23.29463(N) 077 02 11.56258(W)   ADJUSTED
 UA0024* NAD 83(2007) ELLIP HT-   -25.045 (meters)        (02/10/07)   ADJUSTED
 UA0024* NAD 83(2007) EPOCH   -  2002.00
 UA0024* NAVD 88 ORTHO HEIGHT -     7.020  (meters)      23.03  (feet) ADJUSTED
 UA0024  ______________________________________________________________________
 UA0024  NAD 83(2007) X  -  1,115,141.472 (meters)                     COMP
 UA0024  NAD 83(2007) Y  - -4,844,303.306 (meters)                     COMP
 UA0024  NAD 83(2007) Z  -  3,982,786.811 (meters)                     COMP
 UA0024  LAPLACE CORR    -         -2.52  (seconds)                    DEFLEC09
 UA0024  GEOID HEIGHT    -        -32.06  (meters)                     GEOID09
 UA0024  DYNAMIC HEIGHT  -          7.016 (meters)       23.02  (feet) COMP
 UA0024  MODELED GRAVITY -    980,097.6   (mgal)                       NAVD 88
 UA0024
 UA0024  VERT ORDER      -  FIRST     CLASS II
 UA0024
 UA0024  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 UA0024  Type                                           Horiz  Ellip  Dist(km)
 UA0024  ----------------------------------------------------------------------
 UA0024  NETWORK                                         0.36   0.78
 UA0024  ----------------------------------------------------------------------
 UA0024  MEDIAN LOCAL ACCURACY AND DIST (109 points)   0.64   1.29     47.88
 UA0024  ----------------------------------------------------------------------
 UA0024  NOTE: Click here for information on individual local accuracy
 UA0024  values and other accuracy information.
 UA0024
 UA0024
 UA0024.The horizontal coordinates were established by GPS observations
 UA0024.and adjusted by the National Geodetic Survey in February 2007.
 UA0024
 UA0024.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 UA0024.See www.ngs.noaa.gov/web/surveys/NSRS2007 for more information.
 UA0024
 UA0024.The horizontal coordinates are valid at the epoch date displayed above
 UA0024.which is a decimal equivalence of Year/Month/Day.
 UA0024
 UA0024.The orthometric height was determined by differential leveling and
 UA0024.adjusted in April 2010.
 UA0024
 UA0024.Photographs are available for this station.
 UA0024
 UA0024.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 UA0024
 UA0024.The Laplace correction was computed from DEFLEC09 derived deflections.
 UA0024
 UA0024.The ellipsoidal height was determined by GPS observations
 UA0024.and is referenced to NAD 83.
 UA0024
 UA0024.The dynamic height is computed by dividing the NAVD 88
 UA0024.geopotential number by the normal gravity value computed on the
 UA0024.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 UA0024.degrees latitude (g = 980.6199 gals.).
```

```
UA0024
UA0024.The modeled gravity was interpolated from observed gravity values.
UA0024
UA0024. The following values were computed from the NAD 83(2007) position.
UA0024
UA0024;                    North         East     Units Scale Factor Converg.
UA0024;SPC MD       -   135,774.106   396,829.478   MT  0.99994988   -0 01 22.6
UA0024;SPC MD       -   445,452.21  1,301,931.38   sFT  0.99994988   -0 01 22.6
UA0024;SPC VA N     - 2,136,780.288 3,626,959.736   MT  0.99995965   +0 54 48.1
UA0024;SPC VA N     - 7,010,419.99 11,899,450.40   sFT  0.99995965   +0 54 48.1
UA0024;UTM  18      - 4,306,519.398   323,370.814   MT  0.99998418   -1 16 44.1
UA0024
UA0024!             -  Elev Factor  x  Scale Factor =   Combined Factor
UA0024!SPC MD       -   1.00000393  x   0.99994988  =   0.99995381
UA0024!SPC VA N     -   1.00000393  x   0.99995965  =   0.99996358
UA0024!UTM  18      -   1.00000393  x   0.99998418  =   0.99998811
UA0024
UA0024|---------------------------------------------------------------------|
UA0024| PID    Reference Object                      Distance      Geod. Az  |
UA0024|                                                            dddmmss.s |
UA0024| HV4442 WASHINGTON MONUMENT 1913            119.205 METERS 10816     |
UA0024|---------------------------------------------------------------------|
UA0024
UA0024                          SUPERSEDED SURVEY CONTROL
UA0024
UA0024  ELLIP H (02/12/02)  -25.021  (m)                        GP(       ) 4 1
UA0024  NAD 83(1993)-  38 53 23.29439(N)    077 02 11.56216(W) AD(       ) B
UA0024  ELLIP H (06/29/94)  -25.094  (m)                        GP(       ) 4 1
UA0024  NAD 83(1993)-  38 53 23.29440(N)    077 02 11.56215(W) AD(       ) B
UA0024  ELLIP H (04/04/94)  -25.094  (m)                        GP(       ) 4 1
UA0024  NAD 27      -  38 53 22.89700(N)    077 02 12.64600(W) AD(       ) 3
UA0024  USSD        -  38 53 23.23000(N)    077 02 12.48000(W) AD(       ) 3
UA0024  NAVD 88 (08/03/00)    7.02   (m)           23.0    (f) LEVELING    3
UA0024  NAVD 88 (05/07/99)    7.021  (m)           23.03   (f) SUPERSEDED  1 2
UA0024  NAVD 88 (04/04/94)    7.0    (m)  GEOID93 model used   GPS OBS
UA0024
UA0024.Superseded values are not recommended for survey control.
UA0024.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
UA0024.See file dsdata.txt to determine how the superseded data were derived.
UA0024
UA0024_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SUJ2337006519(NAD 83)
UA0024
UA0024_MARKER: Z = SEE DESCRIPTION
UA0024_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
UA0024_MARK LOGO: CGS
UA0024_PROJECTION: PROJECTING 91 CENTIMETERS
UA0024_MAGNETIC: N = NO MAGNETIC MATERIAL
UA0024_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
UA0024+STABILITY: SURFACE MOTION
UA0024_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
UA0024+SATELLITE: SATELLITE OBSERVATIONS - May 21, 2010
UA0024
UA0024  HISTORY     - Date     Condition        Report By
UA0024  HISTORY     - 1907     MONUMENTED       CGS
UA0024  HISTORY     - 1907     GOOD             CGS
UA0024  HISTORY     - 1940     GOOD             CGS
UA0024  HISTORY     - 19930909 GOOD             NGS
UA0024  HISTORY     - 19960718 GOOD             DMW
UA0024  HISTORY     - 19980928 GOOD             NGS
UA0024  HISTORY     - 19991122 GOOD             NGS
UA0024  HISTORY     - 20000224 GOOD             NGS
UA0024  HISTORY     - 20000330 GOOD             NGS
UA0024  HISTORY     - 20000510 GOOD             NGS
```

```
UA0024  HISTORY     - 20030515 GOOD            DMW
UA0024  HISTORY     - 20051216 GOOD            GEOCAC
UA0024  HISTORY     - 20061111 GOOD            USPSQD
UA0024  HISTORY     - 20081222 GOOD            NGS
UA0024  HISTORY     - 20090319 GOOD            GEOCAC
UA0024  HISTORY     - 20100521 GOOD            GEOCAC
UA0024
UA0024                          STATION DESCRIPTION
UA0024
UA0024'DESCRIBED BY COAST AND GEODETIC SURVEY 1907 (OBF)
UA0024'JEFFERSON PIER IS A CONCRETE POST ABOUT NW OF THE WASHINGTON
UA0024'MONUMENT, VERY NEARLY IN THE LATITUDE OF THE CAPITOL DOME AND THE
UA0024'LONGTITUDE OF THE WHITE HOUSE.
UA0024
UA0024                          STATION RECOVERY (1907)
UA0024
UA0024'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1907
UA0024'RECOVERED IN GOOD CONDITION.
UA0024
UA0024                          STATION RECOVERY (1940)
UA0024
UA0024'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1940 (TMP)
UA0024'THIS STATION WAS RECOVERED.  THIS STATION IS LOCATED ON THE W
UA0024'SLOPE OF THE MOUND OF THE WASHINGTON MONUMENT, AND IS IN LINE
UA0024'WITH 16TH STREET EXTENDED, AND IN APPROXIMATE RANGE WITH THE
UA0024'N SIDE OF THE LINCOLN MEMORIAL.  IT IS IN A DEPRESSION ABOUT 8
UA0024'INCHES BELOW THE LINCOLN MEMORIAL.  IT IS IN A DEPRESSION ABOUT
UA0024'8 INCHES BELOW THE GENERAL GROUND SURFACE AND ABOUT 15 FEET IN
UA0024'DIAMETER.  THE MARK IS ABOUT 2 FEET SQUARE AT BASE AND ABOUT 6
UA0024'INCHES SQUARE AT TOP AND EXTENDS ABOUT 2 FEET ABOVE GROUND.
UA0024'
UA0024'THIS MARK IS SAID TO HAVE BEEN RAISED FROM TIME TO TIME AS WORK
UA0024'WAS DONE ON THE MONUMENT GROUNDS, BUT THE POSITION OF THE
UA0024'STATION IS SUPPOSED TO HAVE BEEN HELD EACH TIME.
UA0024
UA0024                          STATION RECOVERY (1993)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993
UA0024'THE STATION IS LOCATED IN WASHINGTON, D.C., ON THE WASHINGTON MONUMENT
UA0024'GROUNDS AT THE JEFFERSON PIER STONE WHICH LIES ON A LINE EXTENDING
UA0024'BETWEEN THE WHITE HOUSE AND THE JEFFERSON MEMORIAL. OWNERSHIP--UNITED
UA0024'STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE.  CONTACT
UA0024'THE NATIONAL PARK SERVICE, TELEPHONE NUMBER (202) 485-9880.
UA0024'THE STATION IS A BRASS PLUG WITH A PUNCH MARK, SET IN THE CENTER OF A
UA0024'RECESSED CROSS IN THE TOP OF A 2 BY 2-FOOT GRANITE MONUMENT WHICH IS
UA0024'INSCRIBED POSITION OF JEFFERSON PIER ERECTED DECEMBER 18, 1804,
UA0024'RECOVERED AND RE-ERECTED DECEMBER 2, 1889, DISTRICT OF COLUMBIA AND
UA0024'PROJECTS 26 INCHES ABOVE THE GROUND.
UA0024'LOCATED 110 M (360.9 FT) WEST-NORTHWEST OF THE WASHINGTON MONUMENT AND
UA0024'13.0 M (42.7 FT) SOUTH OF THE SOUTH EDGE OF A 15-FOOT WIDE CONCRETE
UA0024'WALKWAY.
UA0024'NOTE--PERMISSION MUST BE OBTAINED FROM THE NATIONAL PARK SERVICE TO
UA0024'OCCUPY THIS STATION.
UA0024
UA0024                          STATION RECOVERY (1996)
UA0024
UA0024'RECOVERY NOTE BY DAFT MCCUNE WALKER INCORPORATED 1996 (JMS)
UA0024'RECOVERED AS DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (1998)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (RLA)
UA0024'RECOVERED AS DESCRIBED.
```

```
UA0024
UA0024                          STATION RECOVERY (1999)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1999 (RWA)
UA0024'RECOVERED AS DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (2000)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (MLM)
UA0024'RECOVERED BY NATIONAL GEODETIC SURVEY, RECOVERED AS PREVIOUSLY
UA0024'DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (2000)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (RWA)
UA0024'RECOVERED AS DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (2000)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000 (RWA)
UA0024'RECOVERED AS DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (2003)
UA0024
UA0024'RECOVERY NOTE BY DAFT MCCUNE WALKER INCORPORATED 2003 (JMS)
UA0024'RECOVERED IN GOOD CONDITION.
UA0024
UA0024                          STATION RECOVERY (2005)
UA0024
UA0024'RECOVERY NOTE BY GEOCACHING 2005 (WD)
UA0024'THE PIER NOW LIES INSIDE A NEW PAVED PATH AND RETAINING WALL THAT
UA0024'CIRCLES THE WASHINGTON MONUMENT, ABOUT 60 FEET SOUTHEAST OF THE
UA0024'INTERSECTION OF THREE PAVED ACCESS PATHS AND THE CIRCULAR PATH, AND
UA0024'ABOUT THREE FEET HIGHER THAN THE CIRCULAR PATH.
UA0024
UA0024                          STATION RECOVERY (2006)
UA0024
UA0024'RECOVERY NOTE BY US POWER SQUADRON 2006 (DEB)
UA0024'RECOVERED IN GOOD CONDITION.
UA0024
UA0024                          STATION RECOVERY (2008)
UA0024
UA0024'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2008 (DBC)
UA0024'RECOVERED AS DESCRIBED.
UA0024
UA0024                          STATION RECOVERY (2009)
UA0024
UA0024'RECOVERY NOTE BY GEOCACHING 2009 (SMC)
UA0024'RECOVERED IN GOOD CONDITION.
UA0024
UA0024                          STATION RECOVERY (2010)
UA0024
UA0024'RECOVERY NOTE BY GEOCACHING 2010 (MTT)
UA0024'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
```

Version 7.88 released at 12:27pm on 05/01/2012

This release will incorporate the following updates:

(a)	This release is to enact the format changes as specified on the datasheet95 mockups of AC6803 and UA0024, and the requirements within the document https://source.ngs.noaa.gov/svn/repos/NGSIDBAPI/RetrievalApi/datasheet/docs/V7.87.7/descriptive_announcement.docx. This release includes the local and network accuracies link if a mark/station has local or network accuracies associated with it.
(b)	In regard to Southern Louisiana, if a mark has a superseded orthometric height that was in one of the HT_MOD projects, GPS2100, GPS2021/C, GPS2212, GPS2287, or GPS2262, then the HT_MOD epoch of 2004.65 appears in the SUPERSEDED SURVEY CONTROL section of the datasheet like: DH3818 SUPERSEDED SURVEY CONTROL DH3818 DH3818 ELLIP H (02/10/07) -17.075 (m) GP( ) DH3818 NAD 83(1992)- 30 13 14.83688(N) 092 03 15.88117(W) AD(2004.65) B DH3818 ELLIP H (06/22/05) -17.076 (m) GP(2004.65) 4 1 DH3818 NAVD 88 (06/22/05) 10.25 (m) GEOID03 model used GP(**2004.65**) Additionally, if a mark has a superseded orthometric height that was in the HT_MOD project, GPS2329, then the HT_MOD epoch of 2006.81 appears in the SUPERSEDED SURVEY CONTROL section of the datasheet like: BK0189 SUPERSEDED SURVEY CONTROL BK0189 BK0189 ELLIP H (03/12/08) -17.854 (m) GP(2006.81) 3 1 BK0189 NAVD 88 (03/12/08) 9.44 (m) GEOID03 model used GP(**2006.81**) BK0189 NAVD 88 (02/14/94) 9.706 (m) 31.84 (f) SUPERSEDED 1 1 BK0189 NAVD 88 (06/15/91) 9.705 (m) 31.84 (f) SUPERSEDED 1 1 BK0189 NGVD 29 (??/??/??) 9.688 (m) 31.78 (f) ADJUSTED 1 1 Note: Currently the NGSIDB does not have any superseded orthometric heights for marks in project GPS2329. Thus we used BK0189 as a test case in the test database and added an elevation record so that we could make sure this case worked later on for the eventual superseding of marks in project GPS2329. 1> select * from ELEVATION where UID=10477285 2> go UID HEIGHT ELEV_SOURCE ELEV_QUALITY DATUM ERR_DIST OBS_DATE REDUNDANCY ELEV_TECH ELEV_AVAIL ADJ_ID S_ORDER CLASS HEIGHT_STD_DEV

```
---------- ---------- ---------- ---------- ----- -------- --------
         ---------- --------- ---------- ------------ ------- -----
         --------------
   10477285     9.6876 A           1            29    .         NULL
        NULL       N         U          ADJPRE87             1 1
        NULL
   10477285     9.7046 X           NULL         88    NULL      NULL
        NULL       N         U          00000025             1 1
        NULL
   10477285     9.7055 X           NULL         88       0.2    NULL
        NULL       N         U          00000083             1 1
        NULL
   10477285 9.41251    H           NULL         88    0.35      NULL
        C          G         U          00000999             1 2
        21.23
   10477285     9.442  H           NULL         88    NULL      NULL
        C          G         U          GPS2329          NULL NULL
        NULL
```

(c) In this datasheet95.w release, the word "SUPERSEDED" will appear in the SUPERSEDED SURVEY CONTROL section of a datasheet if we cannot determine what type of superseded orthometric height we have:

```
HS1412                            SUPERSEDED SURVEY CONTROL
HS1412
HS1412  NAD 83(1998)-  37 02 59.70657(N)    120 38 20.78372(W) AD(2004.50)
B
HS1412  ELLIP H (06/30/05)    1.210  (m)                        GP(2004.50)
4 1
HS1412  NAVD 88 (06/30/05)   34.3    (m)  GEOID03 model used   GPS OBS
HS1412  NAVD 88 (06/15/91)   34.622  (m)           113.59   (f) SUPERSEDED
1 1
HS1412  NGVD 29 (??/??/??)   34.19   (m)           112.2    (f) RESET
3
```

In the case of the example, HS1412, we cannot tell if the superseded orthometric height (in red) is a superseded adjusted orthometric height, or a superseded HNB elevation type of orthometric height.

```
1> select * from ELEVATION where UID=10292610
2> go
 UID         HEIGHT     ELEV_SOURCE ELEV_QUALITY DATUM ERR_DIST OBS_DATE
         REDUNDANCY ELEV_TECH ELEV_AVAIL ADJ_ID        S_ORDER CLASS
         HEIGHT_STD_DEV
 ---------- ---------- ---------- ------------ ----- -------- --------
         ---------- --------- ---------- ------------ ------- -----
         --------------
   10292610    34.1880 R           NULL         29    NULL      NULL
        NULL       N         U          RSTPRE87             3 0
        NULL
   10292610    34.6218 X           NULL         88    NULL      NULL
        NULL       N         U          00000025             1 1
        NULL
   10292610 34.32375   A           NULL         88    0.00      NULL
        C          N         U          00000528             2 2
```

	21.32 10292610 34.331 H NULL 88 NULL NULL C G U GPS2017 NULL NULL NULL
(d)	This release uses the leenhout_check function that the Chief Geodesist provided to calculate: (1) The Horz and Ellip values on a datasheet and on the local and network accuracy report (via the lna_ret.w program). (2) The CorrNE on the local and network accuracy report (via the lna_ret.w program).
(e)	This release uses the updated compute_dist algorithm from the Chief Geodesist to calculate the distance between the network and local accuracies on the datasheets and local and network accuracy report (via the lna_ret program).
(f)	As of 3/20/2012 the PPC asked for an update of the LNA note on datasheets with LNAs. They stated: **Change NOTE as follows -** **NOTE: Click here for information on individual local accuracy values and other accuracy information.** *here* **needs to be hyper-linked as it is now.**
(g)	This release encompasses the Change Request dated 3/28/2012 by OAD.: (1) For a mark in NSRS2007 display the following paragraph/link: AC6803.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007). AC6803.See NSRS2007 for more information. (2) For a mark in NA2011 display the following paragraph/link: DW9002.NAD 83(2011) refers to NAD 83 coordinates where the reference DW9002.frame has been affixed to the stable North American Tectonic Plate. See DW9002.NA2011 for more information. If the geoid height line comes out currently with CURRENT GEOID HT or GEOIDXX HEIGHT where XX is the geoid model (i.e. 03, 09), then make it display now like the following (with the GEOID model at the end of the line): DW9002 GEOID HEIGHT - -32.49 (meters) GEOID99 DW9002 GEOID HEIGHT - -32.54 (meters) GEOID09 (3) For bench marks, don't display the following line: <PID> NOTE: <orthometric height datum abbreviation> orthometric height was determined with geoid model <geoid model>
(h)	This release updates the geoid model used in datasheet95 for the states of PR and VQ to match the latest geoid model used for these states in the intg program (and its associated grid files). Dan Roman specified that no changes to the deflection (i.e. intd grid file updates) are needed as they have not changed yet. The geoid model used for PR and VQ is **GEOID09**. Note: The [geoid] grid files are part of the Geodetic Toolkit.

(i)	As of the 3/12/2012 PPC meeting, if a local accuracy control point is associated with the network control point is part of an FAA project survey, then its data is to be *excluded from the summary information* on the datasheet95.w report for the network and local accuracies.

Please note that for the **COUNTRY** label on datasheets, if the country is the United States of America it will be abbreviated "US" and not "USA" (as requested on the AC6803 and UA0024 datasheet mockups) as this is the FIPS value for it in the database.

Version 7.87.6.1 released at 11:59am on 05/01/2012

This release updates the geoid model used in datasheet95 for the states of PR and VQ to match the latest geoid model used for these states in the intg program (and its associated grid files). No changes to the deflection (i.e. intd grid file updates) are needed as they have not changed.

Test Case #1: test the PID of TV0381 (a passive mark) in the state of PR (Puerto Rico).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 TV0381 ***********************************************************************
 TV0381  DESIGNATION -  TORO 1900
 TV0381  PID         -  TV0381
 TV0381  STATE/COUNTY-  PR/
 TV0381  USGS QUAD   -
 TV0381
 TV0381                        *CURRENT SURVEY CONTROL
 TV0381  ______________________________________________________________________
 TV0381* NAD 83(1997)-  17 58 02.90171(N)    066 48 21.29058(W)     ADJUSTED
 TV0381* LMSL        -        56.     (meters)     184.     (feet)  SCALED
 TV0381  ______________________________________________________________________
 TV0381  LAPLACE CORR-          -0.23  (seconds)                     DEFLEC99
 TV0381  GEOID HEIGHT-         -40.03  (meters)                      GEOID09
 TV0381  HORZ ORDER  -  THIRD
 TV0381
 TV0381.The horizontal coordinates were established by classical geodetic methods
 TV0381.and adjusted by the National Geodetic Survey in May 1997.
 TV0381.
 TV0381.The orthometric height was scaled from a topographic map.
 TV0381
 TV0381.The Laplace correction was computed from DEFLEC99 derived deflections.
 TV0381
 TV0381.The geoid height was determined by GEOID09.
```

Test Case #2: Test the PID of DL7620 (a CORS ARP) in the state of PR (Puerto Rico).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 DL7620 ***********************************************************************
 DL7620  CORS         -  This is a GPS Continuously Operating Reference Station.
 DL7620  DESIGNATION -  SAN SEBASTIAN CORS ARP
 DL7620  CORS_ID      -  PRJC
 DL7620  PID          -  DL7620
 DL7620  STATE/COUNTY-  PR/SAN SEBASTIAN
 DL7620  USGS QUAD    -
 DL7620
 DL7620                          *CURRENT SURVEY CONTROL
 DL7620  ______________________________________________________________________
 DL7620* NAD 83(CORS)-  18 20 32.02430(N)     066 59 58.19711(W)      ADJUSTED
 DL7620* LMSL         -              **(meters)             **(feet)
 DL7620  ______________________________________________________________________
 DL7620  EPOCH DATE   -         2002.00
 DL7620  X            -   2,366,363.063 (meters)                      COMP
 DL7620  Y            -  -5,574,666.545 (meters)                      COMP
 DL7620  Z            -   1,994,381.873 (meters)                      COMP
 DL7620  ELLIP HEIGHT-           24.721 (meters)           (05/??/10) ADJUSTED
 DL7620  GEOID HEIGHT-          -41.73  (meters)                      GEOID09
 DL7620  HORZ ORDER   -  SPECIAL (CORS)
 DL7620  ELLP ORDER   -  SPECIAL (CORS)
 DL7620
 DL7620.ITRF positions are available for this station.
 DL7620
 DL7620.The coordinates were established by GPS observations
 DL7620.and adjusted by the National Geodetic Survey in May 2010.
 DL7620
 DL7620.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
 DL7620
 DL7620.The coordinates are valid at the epoch date displayed above
 DL7620.which is a decimal equivalence of Year/Month/Day.
 DL7620
 DL7620.The PID for the CORS L1 Phase Center is DL7621.
 DL7620
 DL7620.The XYZ, and position/ellipsoidal ht. are equivalent.
 DL7620
 DL7620.The ellipsoidal height was determined by GPS observations
 DL7620.and is referenced to NAD 83.
 DL7620
 DL7620.The geoid height was determined by GEOID09.
```

Test Case #3: Test the PID of DL7621 (a CORS L1 Phase Center) in the state of PR (Puerto Rico).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 DL7621 ***********************************************************************
 DL7621  CORS         -  This is a GPS Continuously Operating Reference Station.
 DL7621  DESIGNATION -  SAN SEBASTIAN CORS L1 PHASE CENTER
 DL7621  CORS_ID      -  PRJC
 DL7621  PID          -  DL7621
 DL7621  STATE/COUNTY-  PR/SAN SEBASTIAN
 DL7621  USGS QUAD    -
 DL7621
 DL7621                          *CURRENT SURVEY CONTROL
 DL7621  ______________________________________________________________________
 DL7621* NAD 83(CORS)-  18 20 32.02431(N)     066 59 58.19709(W)      ADJUSTED
```

```
DL7621* LMSL        -              **(meters)            **(feet)
DL7621  ____________________________________________________________________
DL7621  EPOCH DATE  -        2002.00
DL7621  X           -   2,366,363.090 (meters)                     COMP
DL7621  Y           -  -5,574,666.607 (meters)                     COMP
DL7621  Z           -   1,994,381.896 (meters)                     COMP
DL7621  ELLIP HEIGHT-          24.792 (meters)          (05/??/10) ADJUSTED
DL7621  GEOID HEIGHT-         -41.73  (meters)                     GEOID09
DL7621  HORZ ORDER  -  SPECIAL (CORS)
DL7621  ELLP ORDER  -  SPECIAL (CORS)
DL7621
DL7621.ITRF positions are available for this station.
DL7621
DL7621.The coordinates were established by GPS observations
DL7621.and adjusted by the National Geodetic Survey in May 2010.
DL7621
DL7621.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
DL7621
DL7621.The coordinates are valid at the epoch date displayed above
DL7621.which is a decimal equivalence of Year/Month/Day.
DL7621
DL7621.The PID for the CORS ARP is DL7620.
DL7621
DL7621.The XYZ, and position/ellipsoidal ht. are equivalent.
DL7621
DL7621.The ellipsoidal height was determined by GPS observations
DL7621.and is referenced to NAD 83.
DL7621
DL7621.The geoid height was determined by GEOID09.
```

Test Case #4: Test the PID of DL3918 (a passive mark) in the state of VQ (US Virgin Islands/Saint Thomas).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 DL3918 ***********************************************************************
 DL3918  DESIGNATION -  VITH B
 DL3918  PID         -  DL3918
 DL3918  STATE/COUNTY-  VQ/ST THOMAS
 DL3918  USGS QUAD   -  CENTRAL SAINT THOMAS (1982)
 DL3918
 DL3918                        *CURRENT SURVEY CONTROL
 DL3918  ______________________________________________________________________
 DL3918* NAD 83(2007)-  18 20 36.19391(N)    064 58 09.64699(W)     ADJUSTED
 DL3918* LMSL        -              **(meters)            **(feet)
 DL3918  ______________________________________________________________________
 DL3918  EPOCH DATE  -        2002.00
 DL3918  X           -   2,562,335.020 (meters)                     COMP
 DL3918  Y           -  -5,487,278.623 (meters)                     COMP
 DL3918  Z           -   1,994,495.204 (meters)                     COMP
 DL3918  LAPLACE CORR-           0.84  (seconds)                    DEFLEC99
 DL3918  ELLIP HEIGHT-          -1.821 (meters)          (01/22/10) ADJUSTED
 DL3918  GEOID HEIGHT-         -42.25  (meters)                     GEOID09
 DL3918  HORZ ORDER  -  B
 DL3918  ELLP ORDER  -  FIFTH     CLASS I
 DL3918
 DL3918.The horizontal coordinates were established by GPS observations
 DL3918.and adjusted by the National Geodetic Survey in January 2010.
 DL3918
 DL3918.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 DL3918.See NSRS2007 for more information.
 DL3918
 DL3918.The horizontal coordinates are valid at the epoch date displayed above
 DL3918.which is a decimal equivalence of Year/Month/Day.
 DL3918
 DL3918.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DL3918
 DL3918.The Laplace correction was computed from DEFLEC99 derived deflections.
 DL3918
 DL3918.The ellipsoidal height was determined by GPS observations
 DL3918.and is referenced to NAD 83.
 DL3918
 DL3918.The geoid height was determined by GEOID09.
```

Test Case #5: Test the PID of DI2149 (a CORS ARP) in the state of VQ (US Virgin Islands/Saint Thomas).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 DI2149 ***********************************************************************
 DI2149  CORS         -  This is a GPS Continuously Operating Reference Station.
 DI2149  DESIGNATION -  ST. THOMAS CORS ARP
 DI2149  CORS_ID      -  VITH
 DI2149  PID          -  DI2149
 DI2149  STATE/COUNTY-  VQ/ST THOMAS
 DI2149  USGS QUAD    -  CENTRAL SAINT THOMAS (1982)
 DI2149
 DI2149                         *CURRENT SURVEY CONTROL
 DI2149  ______________________________________________________________________
 DI2149* NAD 83(CORS)-  18 20 35.97708(N)     064 58 09.17651(W)      ADJUSTED
 DI2149* LMSL         -              **(meters)             **(feet)
 DI2149  ______________________________________________________________________
 DI2149  EPOCH DATE   -        2002.00
 DI2149  X            -   2,562,351.711 (meters)                      COMP
 DI2149  Y            -  -5,487,281.721 (meters)                      COMP
 DI2149  Z            -   1,994,491.453 (meters)                      COMP
 DI2149  ELLIP HEIGHT-           6.366 (meters)           (10/??/06) ADJUSTED
 DI2149  GEOID HEIGHT-         -42.25  (meters)                      GEOID09
 DI2149  HORZ ORDER   -  SPECIAL (CORS)
 DI2149  ELLP ORDER   -  SPECIAL (CORS)
 DI2149
 DI2149.ITRF positions are available for this station.
 DI2149
 DI2149.The coordinates were established by GPS observations
 DI2149.and adjusted by the National Geodetic Survey in October 2006.
 DI2149
 DI2149.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
 DI2149
 DI2149.The coordinates are valid at the epoch date displayed above
 DI2149.which is a decimal equivalence of Year/Month/Day.
 DI2149
 DI2149.The PID for the CORS L1 Phase Center is DI2150.
 DI2149
 DI2149.The XYZ, and position/ellipsoidal ht. are equivalent.
 DI2149
 DI2149.The ellipsoidal height was determined by GPS observations
 DI2149.and is referenced to NAD 83.
 DI2149
 DI2149.The geoid height was determined by GEOID09.
```

Test Case #6: Test the PID of DI2150 (a CORS L1 Phase Center) in the state of VQ (US Virgin Islands/Saint Thomas).

```
DATABASE = QCTESTNGSIDB , PROGRAM = datasheet95, VERSION = 7.87.6.1
1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2012
 DI2150 ***********************************************************************
 DI2150  CORS         -  This is a GPS Continuously Operating Reference Station.
 DI2150  DESIGNATION -  ST. THOMAS CORS L1 PHASE CENTER
 DI2150  CORS_ID      -  VITH
 DI2150  PID          -  DI2150
 DI2150  STATE/COUNTY-  VQ/ST THOMAS
 DI2150  USGS QUAD    -  CENTRAL SAINT THOMAS (1982)
 DI2150
 DI2150                         *CURRENT SURVEY CONTROL
 DI2150  ______________________________________________________________________
 DI2150* NAD 83(CORS)-  18 20 35.97709(N)     064 58 09.17649(W)      ADJUSTED
 DI2150* LMSL         -              **(meters)             **(feet)
 DI2150  ______________________________________________________________________
 DI2150  EPOCH DATE   -        2002.00
 DI2150  X            -   2,562,351.741 (meters)                      COMP
 DI2150  Y            -  -5,487,281.782 (meters)                      COMP
 DI2150  Z            -   1,994,491.476 (meters)                      COMP
 DI2150  ELLIP HEIGHT-           6.437 (meters)           (10/??/06) ADJUSTED
 DI2150  GEOID HEIGHT-         -42.25  (meters)                      GEOID09
 DI2150  HORZ ORDER   -  SPECIAL (CORS)
 DI2150  ELLP ORDER   -  SPECIAL (CORS)
 DI2150
 DI2150.ITRF positions are available for this station.
 DI2150
 DI2150.The coordinates were established by GPS observations
 DI2150.and adjusted by the National Geodetic Survey in October 2006.
 DI2150
 DI2150.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
 DI2150
 DI2150.The coordinates are valid at the epoch date displayed above
 DI2150.which is a decimal equivalence of Year/Month/Day.
 DI2150
 DI2150.The PID for the CORS ARP is DI2149.
 DI2150
 DI2150.The XYZ, and position/ellipsoidal ht. are equivalent.
 DI2150
 DI2150.The ellipsoidal height was determined by GPS observations
 DI2150.and is referenced to NAD 83.
 DI2150
 DI2150.The geoid height was determined by GEOID09.
```

Version 7.87.6 released at 3:21pm on 04/09/2012

This is to fix the algorithm that determines the best elevation for a passive mark. If we have more than one height mod height and one does not have observations – to be able to choose the best height, use the adjusted dates to determine which height to publish. The one with the latest date is the winner.

Examples: CY0606

UID	HEIGHT	ELEV_SOURCE	DATUM	ELEV_TECH	ELEV_AVAIL	ADJ_ID	ADJ_DATE	OBS_DATE
10263098	1281.8231	A	88	N	U	00000025	19910615	null
10263098	1281.702	H	88	G	U	GPS2160	20050822	20041105
10263098	1281.732	H	88	G	U	GPS2846	20120104	null

GPS2846 project was a readjustment for a HT_MOD station using old observations and hence only the adjusted heights were loaded. No new observations were loaded for this height.
The current algorithm would compare the observation date of GPS2160 with the observation date of GPS2846 and pick GPS2160 as the best height.

The fix is to use the adjusted date of "20120104" for comparison when there are no observations for a HT_MOD project.

Version 7.87.5 released at 3:14pm on 01/25/2012

This release is to:

1	Implement a simplified retrieval/generation of the dtm_tag field that appears on the NAD 83 line of a datasheet as per the PPC meeting of July 28, 2011. We no longer needed to have a routine to generate the dtm_tag differently for high precision states. We could generate the dtm_tag from the REG_ADJ_TAG.EPOCH field. Also, she said that regions that have been adjusted multiple times such as North Carolina-South Carolina, Wisconsin, and Florida, only need to get their *last* regional adjustment. Thus the code was simplified greatly to remove the complexity of this code. This was done by updating the REG_ADJ_TAG table (shown later in this document) as well as some routines to retrieve this data that are transparent to the user.
2	Remove the hard-coding for CORS realizations and create database tables that will house the old and new realization codes for the US states/territories. The default CORS realizations are housed in the *new* CORS_REALIZATION_TAG table and any CORS realization for a state that is to override the default realizations are housed in the *new* CORS_STATE_REALIZATION_TAG table. Any specific message that appears on a datasheet for these realizations can also be found in these tables.
3	Whenever the datum and realization are "NAD 83(CORS)" on the datasheet, display the message "*The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).*" on the datasheet. This message is housed in the CORS_REALIZATION_TAG table for the REALIZATION="CORS96". Note: There are two other statements missing from this request that were not included and should have been and even the above request needs a bit of clarification. • If the realization on the PV_RET output is CORS96, then the message "*The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).*" should appear on the datasheet. • If the realization on the PV_RET output is MARP00, then the message "*The datum tag of NAD 83(CORS) is equivalent to NAD 83(MARP00).*" should appear on the datasheet. • If the realization on the PV_RET output is PACP00, then the message "*The datum tag of NAD 83(CORS) is equivalent to NAD 83(PACP00).*" should appear on the datasheet. For CORS sites that are not part of the NAD 83 (2011) adjustment the following statement were added. Example: AF9698 AF9698 *CURRENT SURVEY CONTROL AF9698 _____ AF9698* NAD 83(CORS)- 33 23 23.28607(N) 115 47 16.85288(W) ADJUSTED AF9698* NAVD 88 - -48.4 (meters) -159. (feet) GPS OBS AF9698 _____ AF9698 **AF9698.The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).** AF9698

For Guam (example: DF7984) the following line will be added for CORS sites that are not part of the NAD 83 (2011) adjustment.

```
DF7984.The datum tag of NAD 83(CORS) is equivalent to NAD 83(MARP00)
```

For Hawaii (example: AJ8468) the following line will be added for CORS sites that are not part of the NAD 83 (2011) adjustment.

```
AJ8468.The datum tag of NAD 83(CORS) is equivalent to NAD 83(PACP00)
```

4

As per the meeting of August 2, 2011 at 10AM with the CORS team, make sure that the new realization of (MA11) includes not only the Northern Mariana Islands (CQ) but also Guam (GU), and that the new realization of (PA11) includes Hawaii (HI), American Samoa (AS) and also Marshall Islands (ML). The CORS team had *left out GU and ML* from his initial "Requirements for Datasheet95 to reflect new NAD 83 realizations (High)" it was found that they also meant to put these two states into the document as well.

To test the NAD 83 (2011) realization for CORS the following configuration was setup in TEST. Any CORS coordinates loaded after 08/16/2011 will be treated as NAD 83(2011) for testing purposes. Example PIDs: KS1340, AA3921

```
1> SELECT START_DATE, END_DATE, REALIZATION, DATASHEET_REALIZATION
FROM CORS_REALIZATION_TAG
2> GO
 START_DATE END_DATE REALIZATION DATASHEET_REALIZATION
 ---------- -------- ----------- ---------------------
 18000101   20110815 CORS96      CORS
 20110816   30990101 2011        2011
```

In production this will be adjusted to reflect the actual date the CORS coordinates are loaded which would be sometime in 2012.

New:

```
KS1340                          *CURRENT SURVEY CONTROL
KS1340  ______________________________________________________________________
KS1340* NAD 83(2011)-  39 58 28.38081(N)    120 56 39.88943(W)     ADJUSTED
KS1340* NAVD 88     -      1130.197  (meters)    3707.99   (feet)  ADJUSTED
KS1340  ______________________________________________________________________

KS1340
KS1340.NAD 83(2011) refers to NAD 83 coordinates where the reference
KS1340.frame has been affixed to the stable North American Tectonic Plate.
KS1340

Data in the database tables shows that the coordinates were loaded on
10/24/2011.
 PID    UID         LATITUDE      LONGITUDE      ADJ_ID        ADJ_DATE
LOAD_DATE
 ------ ----------- ------------- -------------- ------------- -------- -----
----
AF9564    11553323 N395828.37710 W1205639.88522 CORS0003      199609
19980722
AF9564    11553323 N395828.37731 W1205639.88553 CORS0097      199807
```

	19980901 AF9564 11553323 N395828.37734 W1205639.88566 CORS0335 200007 20000908 AF9564 11553323 N395828.37734 W1205639.88566 CORS0595 200007 20020221 AF9564 11553323 N395828.37874 W1205639.88710 CORS0680 200203 20020405 AF9564 11553323 N395828.37874 W1205639.88710 CORS1899 200203 20060814 AF9564 11553323 N395828.37868 W1205639.88689 CORS2752 201009 20100901 AF9564 11553323 N395828.38081 W1205639.88943 CORS2892 201108 20111024 **AF9564 11553323 N395828.38081 W1205639.88943 CORS2911 201108 20111024** **Example for NAD 83(PA11): DI8149, AJ8467, DI8149, DK7460, AN7336** DI8149 *CURRENT SURVEY CONTROL DI8149 _____ DI8149* NAD 83(PA11)- 22 07 34.51886(N) 159 39 53.66113(W) ADJUSTED DI8149* LMSL - **(meters) **(feet) DI8149 _____ DI8149 DI8149.NAD 83(PA11) refers to NAD 83 coordinates where the reference DI8149.frame has been affixed to the stable Pacific Tectonic Plate. DI8149 **Example for NAD 83 (MA11): AA4397, AF9627, DF7980, DI0790** AA4397 *CURRENT SURVEY CONTROL AA4397 _____ AA4397* NAD 83(MA11)- 13 35 21.55606(N) 215 07 53.87275(W) ADJUSTED AA4397* LMSL - **(meters) **(feet) AA4397 _____ AA4397 AA4397.NAD 83(MA11) refers to NAD 83 coordinates where the reference AA4397.frame has been affixed to the stable Mariana Tectonic Plate. AA4397
5	All work done thus far on the local accuracies/the distance algorithm is incorporated into this code so as not to lose this valuable work, even though local accuracies are not to be displayed at this time on datasheets. Local accuracy output can be displayed if <compilearg value="-DLOCACC" /> is placed in the build.xml file that builds the datasheet95.w program. Local accuracy data will not display on the 7.87.5 datasheets.
6	All messages requested for the new realizations *are ready to go for the upcoming NSRS 2011 data as well as the new CORS data to be loaded at a future date*. The messages are: • "NAD 83(2011) refers to NAD 83 coordinates where the reference frame has been affixed to the stable North American Tectonic Plate." for all passive and CORS stations in CONUS, Alaska (AK), Puerto Rico (PR), and the US Virgin Islands (VQ).

	• "NAD 83(MA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Mariana Tectonic Plate." for all CORS stations in Guam (GU) and the Northern Mariana Islands (CQ). • "NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Pacific Tectonic Plate." for all CORS stations in American Samoa (AS), Hawaii (HI), and Marshall Islands (ML).
7	The definition for "LT" in the V_DATUM_DEF table was changed from "LOCAL TIDAL" to "LMSL" (i.e. Local Mean Sea Level). Example LOCAL TIDAL will be replaced with LMSL. Example PIDs: TV1539, AA3601, TV1053 New: TV1539 *CURRENT SURVEY CONTROL TV1539 _____ TV1539* NAD 83(2007)- 18 19 42.37949(N) 064 51 32.93057(W) ADJUSTED TV1539* LMSL - 168.8 (meters) 554. (feet) GPS OBS TV1539 _____ Current Production: TV1539 *CURRENT SURVEY CONTROL TV1539 _____ TV1539* NAD 83(2007)- 18 19 42.37949(N) 064 51 32.93057(W) ADJUSTED TV1539* LOCAL TIDAL - 168.8 (meters) 554. (feet) GPS OBS TV1539 _____
8	Text change: added blank line between paragraphs that were running together as per the PPC's request. **Examples: AA4677, MY2216, AI5615** ***New:*** AA4677.The horizontal coordinates were established by GPS observations AA4677.and adjusted by the National Geodetic Survey in February 2007. AA4677 AA4677.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007). AA4677.See www.ngs.noaa.gov/NationalReadjustment for more information. AA4677 AA4677.The horizontal coordinates are valid at the epoch date displayed above AA4677.and is a decimal equivalence of Year/Month/Day. MY2216.The horizontal coordinates were established by VLBI observations MY2216.and local terrestrial surveys and adjusted by the MY2216.National Geodetic Survey in April 1992. MY2216. MY2216.The orthometric height was determined by differential leveling and MY2216.adjusted in June 1991. MY2216 MY2216.WARNING-GPS observations at this control monument resulted in a GPS MY2216.derived orthometric height which differed from the leveled height by MY2216.more than one decimeter (0.1 meter). MY2216

MY2216.The X, Y, and Z were computed from the position and the ellipsoidal ht.
MY2216
MY2216.The Laplace correction was computed from DEFLEC09 derived deflections.
MY2216
MY2216.The ellipsoidal height was determined by GPS observations
MY2216.and is referenced to NAD 83.
MY2216
MY2216.The geoid height was determined by GEOID09.
MY2216
MY2216.The dynamic height is computed by dividing the NAVD 88
MY2216.geopotential number by the normal gravity value computed on the
MY2216.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
MY2216.degrees latitude (g = 980.6199 gals.).
MY2216
MY2216.The modeled gravity was interpolated from observed gravity values.

AI5615.The horizontal coordinates were established by GPS observations
AI5615.and adjusted by the National Geodetic Survey in February 2007.
AI5615
AI5615.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
AI5615.See www.ngs.noaa.gov/NationalReadjustment for more information.
AI5615
AI5615.The horizontal coordinates are valid at the epoch date displayed above
AI5615.and is a decimal equivalence of Year/Month/Day.
AI5615
AI5615.No horizontal observational check was made to the station.
AI5615.
AI5615.The orthometric height was determined by GPS observations and a
AI5615.high-resolution geoid model.
AI5615
AI5615.GPS derived orthometric heights for airport stations designated as
AI5615.PACS or SACS are published to 2 decimal places. This maintains
AI5615.centimeter relative accuracy between the PACS and SACS. It does
AI5615.not indicate centimeter accuracy relative to other marks which are
AI5615.part of the NAVD 88 network.
AI5615
AI5615.Photographs are available for this station.
AI5615
AI5615.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AI5615
AI5615.The Laplace correction was computed from DEFLEC09 derived deflections.
AI5615
AI5615.The ellipsoidal height was determined by GPS observations
AI5615.and is referenced to NAD 83.
AI5615
AI5615.The geoid height was determined by GEOID09.
AI5615

Current Production:

AA4677.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
AA4677.See www.ngs.noaa.gov/NationalReadjustment for more information.

AA4677.The horizontal coordinates are valid at the epoch date displayed
above.
AA4677.The epoch date for horizontal control is a decimal equivalence
AA4677.of Year/Month/Day.
AA4677

MY2216.The horizontal coordinates were established by VLBI observations
MY2216.and local terrestrial surveys and adjusted by the
MY2216.National Geodetic Survey in April 1992.
MY2216
MY2216.The orthometric height was determined by differential leveling and
MY2216.adjusted in June 1991.
MY2216.WARNING-GPS observations at this control monument resulted in a GPS
MY2216.derived orthometric height which differed from the leveled height by
MY2216.more than one decimeter (0.1 meter).
MY2216
MY2216.The X, Y, and Z were computed from the position and the ellipsoidal
ht.
MY2216
MY2216.The Laplace correction was computed from DEFLEC09 derived deflections.
MY2216
MY2216.The ellipsoidal height was determined by GPS observations
MY2216.and is referenced to NAD 83.
MY2216
MY2216.The geoid height was determined by GEOID09.
MY2216
MY2216.The dynamic height is computed by dividing the NAVD 88
MY2216.geopotential number by the normal gravity value computed on the
MY2216.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
MY2216.degrees latitude (g = 980.6199 gals.).
MY2216
MY2216.The modeled gravity was interpolated from observed gravity values.
MY2216

AI5615.The horizontal coordinates were established by GPS observations
AI5615.and adjusted by the National Geodetic Survey in February 2007.
AI5615
AI5615.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
AI5615.See www.ngs.noaa.gov/NationalReadjustment for more information.
AI5615.No horizontal observational check was made to the station.
AI5615.The horizontal coordinates are valid at the epoch date displayed
above.
AI5615.The epoch date for horizontal control is a decimal equivalence
AI5615.of Year/Month/Day.
AI5615
AI5615.The orthometric height was determined by GPS observations and a
AI5615.high-resolution geoid model.
AI5615
AI5615.GPS derived orthometric heights for airport stations designated as
AI5615.PACS or SACS are published to 2 decimal places. This maintains
AI5615.centimeter relative accuracy between the PACS and SACS. It does
AI5615.not indicate centimeter accuracy relative to other marks which are
AI5615.part of the NAVD 88 network.
AI5615

	AI5615.Photographs are available for this station. AI5615 AI5615.The X, Y, and Z were computed from the position and the ellipsoidal ht. AI5615 AI5615.The Laplace correction was computed from DEFLEC09 derived deflections. AI5615 AI5615.The ellipsoidal height was determined by GPS observations AI5615.and is referenced to NAD 83. AI5615 AI5615.The geoid height was determined by GEOID09.
	Change to rounding algorithm. (orthometric height, geoid height) If a height ends with 5 as in 301.575 it will be rounded up to 301.58. Example PIDs: AJ5575, AH5044, AF9521, TU3063, TU1669, CN2071, CZ1335, AQ1920, SK0415 Ellip Ht: DH8933, DM4115 Geoid Ht: RM0595, SC1468, TU3064 NGVD 29 Ht: MO0972, BH0329, DE0132 New: AH5044* NAVD 88 - 31.90 (meters) 104.7 (feet) GPS OBS Current Production: AH5044* NAVD 88 - 31.89 (meters) 104.6 (feet) GPS OBS
9	In conjuction with this datasheet95.w 7.87.5 release, the chk_pub.w, get_mark_list.w, get_radius_list.w, sup_marks.w, and pv_ret.w programs were recompiled with the new code and released as well.

The following tables have been added into the database.

CORS_REALIZATION_DEF table – tells what the possible CORS_REALIZATION_IDs (locals) are.

CORS_REALIZATION_ID	DEFINITION
MA	MARIANA TECTONIC PLATE
NA	NORTH AMERICAN TECTONIC PLATE
PA	PACIFIC TECTONIC PLATE

DATUM_ORIGIN_POINT table – tells us what UIDs are datum origin points and tells us what messages to print out on the datasheet whenever someone requests a PID associated with these UIDs. This is a new table in the database.

UID	DATUM	DATASHEET_MESSAGE	DATASHEET_MESSAGE_CONT
10209294	GU	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Guam Vertical Datum of 2004 (GUVD04).	The GUVD04 height for this point was defined by NGS to be exactly 0.419 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determined by CO-OPS in April 2003.
11420395	88	""	""
11515212	PR	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Puerto Rico Vertical Datum of 2002 (PRVD02).	The PRVD02 height for this point was defined by NGS to be exactly 1.334 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1960-1978 as determined by CO-OPS in November 2002.
11580446	AS	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the American Samoa Vertical Datum of 2002 (ASVD02).	The ASVD02 height for this point was defined by NGS to be exactly 1.364 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determined by CO-OPS in April 2003.
11588189	NM	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Northern Marianas Vertical Datum of 2003 (NMVD03).	The NMVD03 height for this point was defined by NGS to be exactly 1.657 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determined by CO-OPS in April 2003.
11624102	VI	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Virgin Island Vertical Datum of 2009 (VIVD09) as realized on the island of St. Croix.	The VIVD09 height for this point was defined by NGS to be exactly 3.111 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determine by CO-OPS in April 2003.
11628959	VI	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Virgin Island Vertical Datum of 2009 (VIVD09) as realized on the island of St. John.	The VIVD09 height for this point was defined by NGS to be exactly 1.077 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determine by CO-OPS in April 2003.
11629231	VI	This bench mark was chosen by the National Geodetic Survey to serve as the Datum Origin Point for the Virgin Island Vertical Datum of 2009 (VIVD09) as realized on the island of St. Thomas.	The VIVD09 height for this point was defined by NGS to be exactly 1.552 meters which is identical to the MSL height of this bench mark for Tidal Epoch 1983-2001 as determine by CO-OPS in April 2003.

The following tables have been modified in the database. Changes are shown in purple.

CORS_REALIZATION_TAG table – holds CORS realization tags and the message to be displayed on the datasheet within specified time frames. This is a new table in the database.

START_ DATE	END_ DATE	REALIZATION	DATASHEET_ REALIZATION	DATASHEET_MESSAGE
18000101	20110805	MARP00	CORS	The datum tag of NAD 83(CORS) is equivalent to NAD 83(MARP00)
20110806	20990101	MA11	MA11	NAD 83(MA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Mariana Tectonic Plate.
18000101	20110805	MARP00	CORS	The datum tag of NAD 83(CORS) is equivalent to NAD 83(CORS96).
20110806	20990101	2011	2011	NAD 83(2011) refers to NAD 83 coordinates where the reference frame has been affixed to the stable North American Tectonic Plate.
18000101	20110805	PACP00	CORS	The datum tag of NAD 83(CORS) is equivalent to NAD 83(PACP00)
20110806	20990101	PA11	PA11	NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Pacific Tectonic Plate.

GH_SRCE_DEF table – new field of ABBREV was added. The values in this new column was previously hard-coded in the datasheet program.

GEOID_SOURCE	DEFINITION	ABBREVIATION
1	USGG2009	USGG2009
2	GEOID09	GEOID09
B	OSU89B	OSU 89B
C	GEOID90	GEOID90
D	TENNESSEE GEOID	TENN MD
E	FFT METHOD	FFT MET
F	UNADJUSTED FIELD	UNADJFL
G	OSU91A	OSU 91A
H	GEOID93	GEOID93
J	GEOID96	GEOID96
K	G96SSS	G96SSS
L	CARIB97	CARIB97
M	POST NAD83 180 MODEL	RAPOU78
N	MEXICO97	MEXIO97
O	OTHER	UNKNOWN
P	NAD83 180 MODEL	RAPP078
Q	360 MODEL	RAPSU86
R	EARTH GRAVITY MODEL 96	EGM96
S	SCALED, APPROXIMATE	SCALED
T	GEOID99	GEOID99
U	G99SSS	G99SSS
V	GEOIDX-US HYBRID GEOID	GEOIDXU
W	GEOID03	GEOID03
X	USGG2003	USGG2003
Y	GEOID06	GEOID06
Z	USGG2006	USGG2006

H_DATUM_DEF table – new fields of ABBREVIATION and ITRF_FLAG were added. The ABBREV values in this table were previously hard-coded in the datasheet program and the ITRF_FLAG column was added so that the CORS_RET program could tell what DATUMs were ITRF datums and which one's weren't with a simple flag.

DATUM	DEFINITION	ABBREVIATION	ITRF_FLAG
00	UNDETERMINED	UNDT	NULL
08	INTNL GNSS SERVICE 2008 (IGS08)	IGS08	Y
27	NORTH AMERICAN DATUM OF 1927 (NAD27)	NAD 27	NULL
64	INTERNATIONAL GREAT LAKES DATUM OF 1964 (IGLD64)	IGLD64	NULL
72	WORLD GEODETIC SYSTEM OF 1972 (WGS72)	WGS72	NULL
83	NORTH AMERICAN DATUM OF 1983 (NAD83)	NAD 83	NULL
84	WORLD GEODETIC SYSTEM OF 1984 (WGS84)	WGS84	NULL
93	INTNL TERRESTRIAL REFERENCE FRAME 1993 (ITRF93)	ITRF93	Y
94	INTNL TERRESTRIAL REFERENCE FRAME 1994 (ITRF94)	ITRF94	Y
96	INTNL TERRESTRIAL REFERENCE FRAME 1996 (ITRF96)	ITRF96	Y
97	INTNL TERRESTRIAL REFERENCE FRAME 1997 (ITRF97)	ITRF97	Y
AN	ANCHORAGE PT ASTRO DATUM	AKAN	NULL
AS	AMERICAN SAMOA DATUM OF 1962 (ASD62)	ASD 62	NULL
BA	BARTER ISLAND DATUM 1948	AKBA	NULL
BS	BESSEL SPHEROID	USBS	NULL
CC	CAMP COLONA 1890 DATUM	AKCC	NULL
CS	CHARLESTON AND SAVANNAH DATUM	USCH	NULL
FW	KRIPNIYUK - KWIKLOKCHUN DATUM	AKFW	NULL
FX	FLAXMAN ISLAND DATUM 1912	AKFX	NULL
GO	GOLOFNIN BAY 1899 DATUM	AKGO	NULL
GU	GUAM DATUM OF 1963	GU1963	NULL
HI	OLD HAWAIIAN DATUM	OLD HI	NULL
IA	INDEPENDENT ASTRO 1880	USIA	NULL
IL	ILIAMNA ASTRO DATUM	AKIL	NULL
JI	JOHNSTON ISLAND DATUM OF 1961	JI1961	NULL
MI	MARY IS PT SIMPSON ASTRO DATUM	AKMI	NULL
MQ	MIDWAY ASTRO DATUM OF 1961 (MAD61)	MAD61	NULL
NO	NEW ORLEANS AND MOBILE DATUM	USNO	NULL
PB	POINT BARROW DATUM 1945	AKPB	NULL
PC	PORT CLARENCE ASTRO DATUM	AKPC	NULL
PR	PUERTO RICAN DATUM	PR	NULL
PW	PRINCE WILLIAM SOUND DATUM	AKPW	NULL
SE	SOUTHEAST ALASKA DATUM	AKSE	NULL
SG	ST GEORGE 1897 DATUM	AKSG	NULL
SM	SAINT MICHAEL ASTRO DATUM	AKSM	NULL
SP	SAINT PAUL 1897	AKSP	NULL
UN	UNALASKA DATUM	AKUN	NULL
US	UNITED STATES STANDARD DATUM	USSD	NULL
VD	VALDEZ DATUM	AKVD	NULL
VN	VICKSBURG NATCHEZ	USVN	NULL
WE	WAKE-ENIWETOK DATUM OF 1960	WE1960	NULL
WK	WAKE ISLAND ASTRO DATUM OF 1952	WK1952	NULL
YA	YAKUTAT 1892 DATUM	AKYA	NULL
YK	YUKON DATUM	AKYK	NULL

Z0	INTNL TERRESTRIAL REFERENCE FRAME 2000 (ITRF00)	ITRF00	Y

REG_ADJ_TAG table – new field MESSAGE was added to implement the PPC's statements in change #1 for this release.

REG_ADJ_ID	EPOCH	REGION_ID	SPONSOR	MESSAGE
17471	1990	1	TENNESSEE	NULL
17478	1990	2	FLORIDA	NULL
17497	1991	3	WISCONSIN	NULL
17499	1991	6	MARYLAND/DELAWARE	NULL
17509	1991	4	OREGON	NULL
17522	1991	5	WASHINGTON	NULL
17540	1992	10	ALABAMA	NULL
17549	1992	7	MONTANA/IDAHO	NULL
17550	1992	8	CALIFORNIA	NULL
17550/B	1992	38	SOUTHERN CALIFORNIA	NULL
17553	1992	9	COLORADO	NULL
17564	1992	11	LOUISIANA	NULL
17565	1992	12	ALASKA	NULL
17572	1992	13	ARIZONA	NULL
17582	1992	14	NORTHEAST	NULL
17589	1992	15	NEW MEXICO	NULL
17593	1994	16	SOUTH CAROLINA	NULL
17595	1993	17	PUERTO RICO/VIRGIN ISLANDS	NULL
17596	1993	18	TEXAS	NULL
17597	1993	21	OKLAHOMA	NULL
17599	1993	19	MISSISSIPPI	NULL
17607	1993	20	VIRGINIA	NULL
17611	1993	22	KENTUCKY	NULL
17615	1993	23	WYOMING	NULL
17619	1994	24	GEORGIA	NULL
17620	1994	25	NEVADA	NULL
17622	1993	26	HAWAII	NULL
17623	1994	27	UTAH	NULL
17624	1993	28	PACIFIC RIM	NULL
17626	1994	30	NORTHRIDGE PROJECT	NULL
17627	1994	31	MICHIGAN	NULL
17628	1995	33	WEST VIRGINIA	NULL
17629	1995	34	TENNESSEE 2	NULL
17640	1995	36	NEBRASKA	NULL
17645	1995	39	NORTH CAROLINA - SOUTH CAROLINA	NULL
17647	1996	40	CARIBBEAN	NULL
17648	1996	41	MINNESOTA	NULL
17649	1997	46	PUERTO RICO/VIRGIN ISLANDS LARGE	NULL
17650	1996	42	SOUTH DAKOTA	NULL
17655	1996	43	NORTH DAKOTA - SOUTH DAKOTA	NULL
17656	1996	44	IOWA	NULL
17657	1996	45	NORTHEAST LARGE	NULL
17658	1995	50	OHIO/WEST VIRGINIA	NULL
17659	1997	47	ARKANSAS	NULL

17661	1997	48	KANSAS	NULL
17663	1997	53	ILLINOIS	NULL
17664	1997	51	INDIANA	NULL
17665	1997	49	MISSOURI	NULL
17673	1997	54	WISCONSIN 2	NULL
17676	1998	56	WASHINGTON 2	NULL
17677	1998	55	OREGON 2	NULL
17679	1998	57	CALIFORNIA 2	NULL
17680	1999	58	NEVADA 2	NULL
17682	1999	59	MONTANA/IDAHO 2	NULL
17684	1999	60	FLORIDA 2	NULL
17686	2001	61	HONDURAS	NULL
17690	2001	62	NORTH CAROLINA - SOUTH CAROLINA 2	NULL
17691	2002	63	AMERICAN SAMOA	NULL
17692	2002	64	PUERTO RICO/VIRGIN ISLANDS LARGE 2	NULL
17695	2002	65	NORTHERN MARIANAS	NULL
17696	2007	66	UNITED **STATES**	The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007). See www.ngs.noa a.gov/NationalReadjustment for more information.
17697	2011	66	UNITED STATES	NAD 83(2011) refers to NAD 83 coordinates where the reference frame has been affixed to the stable North American Tectonic Plate.
17698	2011	65	NORTHERN MARIANAS	NAD 83(MA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Mariana Tectonic Plate.
17699	2011	66	HAWAII-AMERICAN SAMOA	NAD 83(PA11) refers to NAD 83 coordinates where the reference frame has been affixed to the stable Pacific Tectonic Plate.

STATES table – new column of CORS_REALIZATION_ID added.

*Note: Not all columns in the STATES table are shown here.

STATE	COUNTRY _FIPS	STATE_NAME	CORS_ REALIZATION _ID	ASIA _FLAG	AFRICA _FLAG
AA	AA	UNIDENTIFIED REGION OF ARUBA	NULL	NULL	NULL
AB	CA	ALBERTA	NA	NULL	NULL
AC	AC	UNIDENTIFIED PARISH OF ANTIGUA AND BARBUDA	NULL	NULL	NULL

AD	HO	ATLANTIDA	NULL	NULL	NULL
AF	AF	UNIDENTIFIED DISTRICT OF AFGHANISTAN	NA	Y	N
AG	MX	AGUASCALIENTES	NA	NULL	NULL
AH	ES	AHUACHAPAN	NULL	NULL	NULL
AI	BN	ALIBORI DEPARTMENT	NA	NULL	Y
AJ	AR	UNIDENTIFIED PROVINCE OF ARGENTINA	NULL	NULL	NULL
AK	US	ALASKA	NA	NULL	NULL
AL	US	ALABAMA	NA	NULL	NULL
AN	NU	ATLANTICO NORTE	NULL	NULL	NULL
AO	BN	ATAKORA DEPARTMENT	NA	NULL	Y
AQ	BN	ATLANTIQUE DEPARTMENT	NULL	NULL	Y
AR	US	ARKANSAS	NA	NULL	NULL
AS	US	AMERICAN SAMOA	PA	NULL	NULL
AT	NU	ATLANTICO SUR	NULL	NULL	NULL
AV	AV	UNIDENTIFIED PROVINCE OF ANGUILLA	NULL	NULL	NULL
AY	AY	UNIDENTIFIED PROVINCE OF ANTARTICA	NULL	NULL	NULL
AZ	US	ARIZONA	NA	NULL	NULL
BA	HO	SANTA BARBARA	NULL	NULL	NULL
BB	BB	UNIDENTIFIED PARISH OF BARBADOS	NA	NULL	NULL
BC	CA	BRITISH COLUMBIA	NA	NULL	NULL
BD	BD	UNIDENTIFIED PARISH OF BERMUDA	NA	NULL	NULL
BE	BN	COLLINES DEPARTMENT	NA	NULL	Y
BF	BF	UNIDENTIFIED DISTRICT OF BAHAMA ISLANDS	NULL	NULL	NULL
BG	BN	BORGOU DEPARTMENT	NA	NULL	Y
BH	BH	UNIDENTIFIED DISTRICT OF BELIZE (BRITISH HONDURAS)	NULL	NULL	NULL
BL	BL	UNIDENTIFIED DEPARTMENT OF BOLIVA	NULL	NULL	NULL
BN	MX	BAJA CALIFORNIA NORTE	NA	NULL	NULL
BO	NU	BOACO	NULL	NULL	NULL
BQ	US	NAVASSA ISLAND	NA	NULL	NULL
BR	BR	UNIDENTIFIED STATE OF BRAZIL	NA	NULL	NULL
BS	MX	BAJA CALIFORNIA SUR	NA	NULL	NULL
BV	GT	BAJA VERAPAZ	NULL	NULL	NULL
CA	US	CALIFORNIA	NA	NULL	NULL
CB	CO	UNIDENTIFIED DEPARTMENT OF COLOMBIA	NA	NULL	NULL
CC	MX	CHIHUAHUA	NULL	NULL	NULL
CD	CA	UNIDENTIFIED PROVINCE OF CANADA	NULL	NULL	NULL
CE	HO	CHOLUTECA	NULL	NULL	NULL
CF	CT	UNIDENTIFIED PREFECTURE OF CENTRAL AFRICAN REPUBLIC	NULL	NULL	Y
CG	NU	CHINANDEGA	NULL	NULL	NULL
CH	MX	CHIAPAS	NA	NULL	NULL
CI	CI	UNIDENTIFIED REGION OF CHILE	NULL	NULL	NULL
CJ	CJ	UNIDENTIFIED DISTRICT OF CAYMAN ISLANDS	NA	NULL	NULL
CK	HO	COLON	NULL	NULL	NULL
CL	MX	COLIMA	NA	NULL	NULL
CM	MX	CAMPECHE	NA	NULL	NULL
CN	NU	CHONTALES	NULL	NULL	NULL

CO	US	COLORADO	NA	NULL	NULL
CP	CP	UNIDENTIFIED REGION OF CURACAO	NULL	NULL	NULL
CQ	CQ	PROVINCE OF NORTHERN MARIANA ISLANDS	MA	NULL	NULL
CR	CS	UNIDENTIFIED PROVINCE OF COSTA RICA	NA	NULL	NULL
CS	ES	CABANAS	NULL	NULL	NULL
CT	US	CONNECTICUT	NA	NULL	NULL
CU	CU	UNIDENTIFIED PROVINCE OF CUBA	NA	NULL	NULL
CV	HO	CORTES	NULL	NULL	NULL
CW	CH	UNIDENTIFIED PROVINCE OF CHINA	NULL	Y	NULL
CX	HO	COPAN	NULL	NULL	NULL
CY	HO	COMAYAGUA	NULL	NULL	NULL
CZ	MX	COAHUILA DE ZARAGOZA	NULL	NULL	NULL
DA	DA	UNIDENTIFIED COUNTY OF DENMARK	NULL	NULL	NULL
DC	US	DISTRICT OF COLUMBIA	NA	NULL	NULL
DE	US	DELAWARE	NA	NULL	NULL
DF	MX	DISTRITO FEDERAL	NA	NULL	NULL
DI	IN	UNIDENTIFIED TERRITORY OF INDIA	NULL	Y	NULL
DN	BN	DONGA DEPARTMENT	NULL	NULL	Y
DO	DO	UNIDENTIFIED PARISH OF DOMINICA	NULL	NULL	NULL
DR	DR	UNIDENTIFIED PROVINCE OF DOMINICAN REPUBLIC	NULL	NULL	NULL
DU	MX	DURANGO	NULL	NULL	NULL
EC	EC	UNIDENTIFIED PROVINCE OF ECUADOR	NA	NULL	NULL
EG	EG	UNIDENTIFIED GOVERNORATE OF EGYPT	NULL	NULL	Y
EL	NU	ESTELI	NULL	NULL	NULL
EN	GT	ESCUINTLA	NULL	NULL	NULL
EP	GT	EL PROGRESO	NULL	NULL	NULL
ER	HO	EL PARAISO	NULL	NULL	NULL
ES	ES	UNIDENTIFIED DEPARTMENT OF EL SALVADOR	NA	NULL	NULL
ET	ET	UNIDENTIFIED REGION OF ETHIOPIA	NA	NULL	Y
FG	FG	UNIDENTIFIED PROVINCE OF FRENCH GUIANA	NULL	NULL	Y
FI	FI	UNIDENTIFIED PROVINCE OF FINLAND	NULL	NULL	NULL
FL	US	FLORIDA	NA	NULL	NULL
FM	FM	UNIDENTIFIED PROVINCE OF FEDERATED STATES OF MICRONESIA	NULL	NULL	NULL
FN	FR	UNIDENTIFIED REGION OF FRANCE	NULL	NULL	NULL
FR	HO	FRANCISCO MORAZAN	NULL	NULL	NULL
GA	US	GEORGIA	NA	NULL	NULL
GB	MX	GUANAJUATO	NULL	NULL	NULL
GD	HO	GRACIAS A DIOS	NULL	NULL	NULL
GE	GT	GUATEMALA	NULL	NULL	NULL
GJ	GJ	UNIDENTIFIED PARISH OF GRENADA	NULL	NULL	NULL
GL	GL	UNIDENTIFIED MUNICIPALITY OF GREENLAND	NULL	NULL	NULL
GM	GM	UNIDENTIFIED STATE OF GERMANY	NULL	NULL	NULL
GN	NU	GRANADA	NULL	NULL	NULL
GP	GP	UNIDENTIFIED PROVINCE OF GUADELOUPE	NULL	NULL	NULL
GR	MX	GUERRERO	NULL	NULL	NULL

GT	GT	UNIDENTIFIED DEPARTMENT OF GUATEMALA	NA	NULL	NULL
GU	US	GUAM	MA	NULL	NULL
GY	GY	UNIDENTIFIED REGION OF GUYANA	NULL	NULL	NULL
HA	HA	UNIDENTIFIED DEPARTMENT OF HAITI	NA	NULL	NULL
HD	MX	HIDALGO	NULL	NULL	NULL
HI	US	HAWAII	PA	NULL	NULL
HL	ES	CHALATENANGO	NULL	NULL	NULL
HO	HO	UNIDENTIFIED DEPARTMENT OF HONDURAS	NA	NULL	NULL
HU	GT	HUEHUETENANGO	NULL	NULL	NULL
HV	GT	ALTA VERAPAZ	NULL	NULL	NULL
IA	US	IOWA	NA	NULL	NULL
IB	HO	ISLAS DE LA BAHIA	NULL	NULL	NULL
IC	IC	UNIDENTIFIED COUNTY OF ICELAND	NULL	NULL	NULL
ID	US	IDAHO	NA	NULL	NULL
II	HO	INTIBUCA	NULL	NULL	NULL
IL	US	ILLINOIS	NA	NULL	NULL
IN	US	INDIANA	NA	NULL	NULL
IT	IT	UNIDENTIFIED REGION OF ITALY	NULL	NULL	NULL
IZ	IZ	IRAQ	NA	Y	NULL
JA	JA	UNIDENTIFIED PREFECTURE OF JAPAN	NULL	Y	NULL
JI	NU	JINOTEGA	NULL	NULL	NULL
JL	MX	JALISCO	NA	NULL	NULL
JM	JM	UNIDENTIFIED PARISH OF JAMAICA	NA	NULL	NULL
JQ	US	JOHNSTON ATOLL	NA	NULL	NULL
JU	GT	JUTIAPA	NULL	NULL	NULL
KO	BN	KOUFFO DEPARTMENT	NULL	NULL	Y
KS	US	KANSAS	NA	NULL	NULL
KY	US	KENTUCKY	NA	NULL	NULL
LA	US	LOUISIANA	NA	NULL	NULL
LE	NU	LEON	NULL	NULL	NULL
LI	BN	LITTORAL DEPARTMENT	NA	NULL	Y
LL	ES	LA LIBERTAD	NULL	NULL	NULL
LM	HO	LEMPIRA	NULL	NULL	NULL
LN	ES	CUSCATLAN	NULL	NULL	NULL
LP	ES	LA PAZ	NULL	NULL	NULL
LT	GT	CHIMALTENANGO	NULL	NULL	NULL
LU	ES	LA UNION	NULL	NULL	NULL
LZ	HO	LA PAZ	NULL	NULL	NULL
MA	US	MASSACHUSETTS	NA	NULL	NULL
MB	CA	MANITOBA	NA	NULL	NULL
MC	MX	MICHOACAN DE OCAMPO	NULL	NULL	NULL
MD	US	MARYLAND	NA	NULL	NULL
ME	US	MAINE	NA	NULL	NULL
MF	MX	MORELOS	NULL	NULL	NULL
MG	NU	MANAGUA	NULL	NULL	NULL
MH	MH	UNIDENTIFIED PARISH OF MONTSERRAT	NULL	NULL	NULL
MI	US	MICHIGAN	NA	NULL	NULL
MJ	MX	MEXICO	NA	NULL	NULL
ML	ML	PROVINCE OF REPUBLIC OF MARSHALL ISLANDS	PA	NULL	NULL
MN	US	MINNESOTA	NA	NULL	NULL
MO	US	MISSOURI	NA	NULL	NULL

MP	NU	MATAGALPA	NULL	NULL	NULL
MQ	US	MIDWAY ISLANDS	NA	NULL	NULL
MR	MR	UNIDENTIFIED PROVINCE OF MARTINIQUE	NULL	NULL	NULL
MS	US	MISSISSIPPI	NA	NULL	NULL
MT	US	MONTANA	NA	NULL	NULL
MU	BN	MONO DEPARTMENT	NULL	NULL	Y
MX	MX	UNIDENTIFIED STATE OF MEXICO	NA	NULL	NULL
MY	NU	MASAYA	NULL	NULL	NULL
MZ	NU	MADRIZ	NULL	NULL	NULL
NA	MX	NAYARIT	NULL	NULL	NULL
NB	CA	NEW BRUNSWICK	NULL	NULL	NULL
NC	US	NORTH CAROLINA	NA	NULL	NULL
ND	US	NORTH DAKOTA	NA	NULL	NULL
NE	US	NEBRASKA	NA	NULL	NULL
NF	CA	NEWFOUNDLAND	NA	NULL	NULL
NH	US	NEW HAMPSHIRE	NA	NULL	NULL
NI	NU	UNIDENTIFIED DEPARTMENT OF NICARAGUA	NA	NULL	NULL
NJ	US	NEW JERSEY	NA	NULL	NULL
NL	MX	NUEVO LEON	NA	NULL	NULL
NM	US	NEW MEXICO	NA	NULL	NULL
NN	CA	NUNAVUT	NA	NULL	NULL
NO	NO	UNIDENTIFIED PROVINCE OF NORWAY	NULL	NULL	NULL
NP	NP	UNIDENTIFIED ZONE OF NEPAL	NULL	Y	NULL
NS	CA	NOVA SCOTIA	NULL	NULL	NULL
NT	NT	UNIDENTIFIED PROVINCE OF NETHERLANDS ANTILLES	NULL	NULL	NULL
NU	NU	NUEVA SEGOVIA	NA	NULL	NULL
NV	US	NEVADA	NA	NULL	NULL
NW	CA	NORTHWEST TERRITORIES	NA	NULL	NULL
NY	US	NEW YORK	NA	NULL	NULL
NZ	NZ	UNIDENTIFIED DISTRICT OF NEW ZEALAND	NULL	NULL	NULL
OC	HO	OCOTEPEQUE	NULL	NULL	NULL
OH	US	OHIO	NA	NULL	NULL
OK	US	OKLAHOMA	NA	NULL	NULL
OL	HO	OLANCHO	NULL	NULL	NULL
ON	CA	ONTARIO	NA	NULL	NULL
OR	US	OREGON	NA	NULL	NULL
OU	BN	OUEME DEPARTMENT	NULL	NULL	Y
OX	MX	OAXACA	NA	NULL	NULL
PA	US	PENNSYLVANIA	NA	NULL	NULL
PE	CA	PRINCE EDWARD ISLAND	NULL	NULL	NULL
PL	BN	PLATEAU DEPARTMENT	NULL	NULL	Y
PN	PM	UNIDENTIFIED PROVINCE OF PANAMA	NULL	NULL	NULL
PQ	CA	QUEBEC	NA	NULL	NULL
PR	US	PUERTO RICO	NA	NULL	NULL
PT	GT	PETEN	NULL	NULL	NULL
PU	MX	PUEBLA	NULL	NULL	NULL
PW	PW	PROVINCE OF REPUBLIC OF PALAU	NULL	NULL	NULL
PY	PA	UNIDENTIFIED DEPARTMENT OF PARAGUAY	NULL	NULL	NULL
QA	MX	QUERETARO DE ARTEAGA	NULL	NULL	NULL

QI	GT	QUICHE	NULL	NULL	NULL
QR	MX	QUINTANA ROO	NA	NULL	NULL
QT	GT	QUETZALTENANGO	NULL	NULL	NULL
QU	GT	CHIQUIMULA	NULL	NULL	NULL
RE	GT	RETALHULEU	NULL	NULL	NULL
RI	US	RHODE ISLAND	NA	NULL	NULL
RN	ES	MORAZAN	NULL	NULL	NULL
RO	RO	UNIDENTIFIED COUNTY OF ROMANIA	NULL	NULL	NULL
RP	RP	UNIDENTIFIED PROVINCE OF PHILIPPINE ISLANDS	NULL	Y	NULL
RS	NU	RIO SAN JUAN	NULL	NULL	NULL
RV	NU	RIVAS	NULL	NULL	NULL
RZ	NU	CARAZO	NULL	NULL	NULL
SA	SA	UNIDENTIFIED EMIRATE OF SAUDI ARABIA	NULL	Y	NULL
SB	MX	SONORA	NA	NULL	NULL
SC	US	SOUTH CAROLINA	NA	NULL	NULL
SD	US	SOUTH DAKOTA	NA	NULL	Y
SE	ES	SONSONATE	NULL	NULL	NULL
SF	SF	UNIDENTIFIED PROVINCE OF SOUTH AFRICA	NULL	NULL	Y
SG	GT	SUCHITEPEQUEZ	NULL	NULL	NULL
SH	SH	UNIDENTIFIED DEPENDENCY OF SAINT HELENA ISLANDS	NULL	NULL	NULL
SI	MX	SINALOA	NA	NULL	NULL
SJ	SJ	UNIDENTIFIED REGION of ST MAARTEN	NULL	NULL	NULL
SK	CA	SASKATCHEWAN	NA	NULL	NULL
SL	MX	SAN LUIS POTOSI	NULL	NULL	NULL
SM	ES	SAN MIGUEL	NULL	NULL	NULL
SN	SN	UNIDENTIFIED PARISH OF ST KITTS AND NEVIS	NULL	NULL	NULL
SO	SO	UNIDENTIFIED REGION OF SOMALIA	NULL	NULL	Y
SP	GT	SACATEPEQUEZ	NULL	NULL	NULL
SQ	GT	SOLOLA	NULL	NULL	NULL
SR	NS	UNIDENTIFIED DISTRICT OF SURINAM	NA	NULL	NULL
SS	ES	SAN SALVADOR	NULL	NULL	NULL
ST	ST	UNIDENTIFIED QUARTER OF ST LUCIA	NULL	NULL	NULL
SU	SU	UNIDENTIFIED REGION OF SUDAN	NULL	NULL	Y
SV	ES	SAN VICENTE	NULL	NULL	NULL
SW	SW	UNIDENTIFIED PROVINCE IN SWEDEN	NULL	NULL	NULL
SX	ES	SANTA ANA	NULL	NULL	NULL
SY	GT	SANTA ROSA	NULL	NULL	NULL
SZ	GT	SAN MARCOS	NULL	NULL	NULL
TB	MX	TABASCO	NULL	NULL	NULL
TD	TD	UNIDENTIFIED COUNTY OF TRINIDAD AND TOBAGO	NULL	NULL	NULL
TK	TK	UNIDENTIFIED PROVINCE OF TURKS and CAICOS ISLANDS	NA	NULL	NULL
TL	MX	TLAXCALA	NULL	NULL	NULL
TM	MX	TAMAULIPAS	NULL	NULL	NULL
TN	US	TENNESSEE	NA	NULL	NULL
TO	GT	TOTONICAPAN	NULL	NULL	NULL
TQ	US	TRUST TERRITORY OF THE PACIFIC ISLANDS	NA	NULL	NULL

TW	TW	UNIDENTIFIED PROVINCE OF TAIWAN	NULL	Y	NULL
TX	US	TEXAS	NA	NULL	NULL
TZ	TZ	UNIDENTIFIED REGION OF TANZANIA	NULL	NULL	Y
UG	UG	UNIDENTIFIED PROVINCE OF UGANDA	NULL	NULL	Y
UK	UK	UNIDENTIFIED COUNTY IN UNITED KINGDOM	NULL	NULL	NULL
UM	US	MINOR OUTLYING ISLANDS	NA	NULL	NULL
UN	ES	USULUTAN	NULL	NULL	NULL
UR	UR	UNIDENTIFIED REPUBLIC OF THE SOVIET UNION	NULL	Y	NULL
US	US	UNIDENTIFIED STATE OF THE UNITED STATES	NA	NULL	NULL
UT	US	UTAH	NA	NULL	NULL
UY	UY	UNIDENTIFIED DEPARTMENT OF URUGUAY	NULL	NULL	NULL
VA	US	VIRGINIA	NA	NULL	NULL
VC	VC	UNIDENTIFIED PARISH OF ST VINCENT AND GRENADINES	NULL	NULL	NULL
VE	VE	UNIDENTIFIED STATE OF VENEZUELA	NULL	NULL	NULL
VI	VI	UNIDENTIFIED PROVINCE OF BRITISH VIRGIN ISLANDS	NULL	NULL	NULL
VL	MX	VERACRUZ-LLAVE	NULL	NULL	NULL
VQ	US	US VIRGIN ISLANDS	NA	NULL	NULL
VT	US	VERMONT	NA	NULL	NULL
VX	HO	VALLE	NULL	NULL	NULL
WA	US	WASHINGTON	NA	NULL	NULL
WG	GE	UNIDENTIFIED STATE IN WEST GERMANY	NULL	NULL	NULL
WI	US	WISCONSIN	NA	NULL	NULL
WQ	US	WAKE ISLAND	NA	NULL	NULL
WV	US	WEST VIRGINIA	NA	NULL	NULL
WY	US	WYOMING	NA	NULL	NULL
YK	CA	YUKON TERRITORY	NA	NULL	NULL
YO	HO	YORO	NULL	NULL	NULL
YU	MX	YUCATAN	NA	NULL	NULL
ZA	ZA	UNIDENTIFIED PROVINCE OF ZAMBIA	NULL	NULL	Y
ZC	MX	ZACATECAS	NULL	NULL	NULL
ZO	BN	ZOU DEPARTMENT	NA	NULL	Y
ZP	GT	ZACAPA	NULL	NULL	NULL

*Note: For a *CORS station* you have to make the STATES.CORS_REALIZATION_ID equal to ”NA”, “PA”, or “MA” if you want it to appear on the NAD 83 line of datasheets (i.e. (2011))!

V_DATUM_DEF table – new column of ABBREV was added here to get this into the database and out of hard-code in the datasheet95.w program. The values in the ABBREV column were also shortened from 8 characters to 13 characters to keep the datasheet output in alignment with the new upcoming formatting changes in the near future.

V_DATUM_DEF table – new field of ABBREVIATION was added.

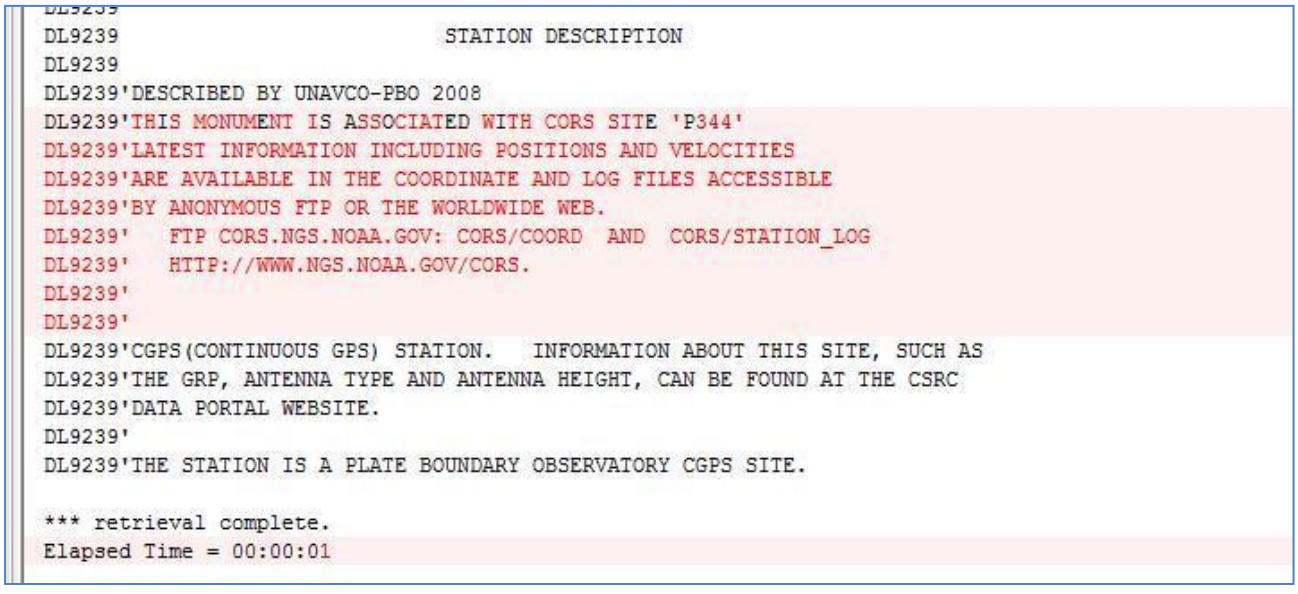
DATUM	DEFINITION	ABBREVIATION
00	UNDETERMINED	UNDT
29	NATIONAL GEODETIC VERTICAL DATUM OF 1929	NGVD 29
55	INTERNATIONAL GREAT LAKES DATUM OF 1955	IGLD55
85	INTERNATIONAL GREAT LAKES DATUM OF 1985	IGLD85
88	NORTH AMERICAN VERTICAL DATUM OF 1988	NAVD 88
AS	AMERICAN SAMOA VERTICAL DATUM OF 2002	ASVD02
G1	GUAM VERTICAL DATUM OF 1963	GUVD63
GU	GUAM VERTICAL DATUM OF 2004	GUVD04
LT	LOCAL MEAN SEA LEVEL	LMSL
NM	NORTHERN MARIANAS VERTICAL DATUM OF 2003	NMVD03
PR	PUERTO RICO VERTICAL DATUM OF 2002	PRVD02
VI	VIRGIN ISLANDS VERTICAL DATUM OF 2009	VIVD09

Version 7.87.4.2 released at 10:48am on 01/25/2012

This is a patch release to fix the issue with "excess" descriptive text coming out onto CORS datasheets whenever the CORS type is a monument (i.e. cors_type='M'). CORS monuments are also considered to be passive monuments and all passive monuments must (according to OAD) have descriptive text associated with them in the TEXT table. The problem is that CORS datasheets should display only the standard CORS paragraph (i.e. starting with "THIS MONUMENT IS ASSOCIATED WITH CORS SITE…") and not also the descriptive text on the datasheets.

In the sample below for mark DL9239, the datasheet should print out the text beginning with "THIS MONUMENT IS ASSOCIATED WITH CORS SITE…" but not the text "CGPS(CONTINUOUS GPS) STATION… PLATE BOUNDARY OBSERVATORY CGPS SITE." which is the descriptive text loaded in for this (passive) monument.

This is also a patch release to fix a problem introduced by the implementation of the code that was using fork() and then wait() to run a command (i.e. a system call to run the chk_pub program within datasheet95) and then wait() for completion. waitpid()is used instead of wait() to resolve the issue of a wait() that never sees the return of its child process, the system call to chk_pub, but rather sees the return of the other child process first, the Oracle DBAuthentication child.



```
DL9239
DL9239                          STATION DESCRIPTION
DL9239
DL9239'DESCRIBED BY UNAVCO-PBO 2008
DL9239'THIS MONUMENT IS ASSOCIATED WITH CORS SITE 'P344'
DL9239'LATEST INFORMATION INCLUDING POSITIONS AND VELOCITIES
DL9239'ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL9239'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL9239'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DL9239'   HTTP://WWW.NGS.NOAA.GOV/CORS.
DL9239'
DL9239'
DL9239'CGPS(CONTINUOUS GPS) STATION.   INFORMATION ABOUT THIS SITE, SUCH AS
DL9239'THE GRP, ANTENNA TYPE AND ANTENNA HEIGHT, CAN BE FOUND AT THE CSRC
DL9239'DATA PORTAL WEBSITE.
DL9239'
DL9239'THE STATION IS A PLATE BOUNDARY OBSERVATORY CGPS SITE.

*** retrieval complete.
Elapsed Time = 00:00:01
```

Version 7.87.4.1 released at 7:43pm on 10/05/2011

This is a patch release to fix a problem introduced by the implementation of the DBAuthentication module. The code was using fork and then wait to run a command and wait for completion. Wait system call randomly waits for a child process to be complete. Since DBAuthentication launches a child process the code was coming out of the wait when the Oracle process exited. Waitpid should be used instead of wait. Also there was no real need to use fork/wait. A direct call to the "system" function would have sufficed.

Version 7.87.4 released at 12:01pm on 08/01/2011

This release is to implement the new database authentication process for NGS Applications for datasheet95.

Version 7.87.3 released at 3:29pm on 07/11/2011

This release implements the following changes:

Part 1a: Add horizontal datum abbreviations to the H_DATUM_DEF table and modifying the program so that the addition of any *historical* horizontal datum to the H_DATUM_DEF table will not require the datasheet95 program to be recompiled (unless some other field/text needs to be added/updated for some odd reason).

The abbreviations for all of the horizontal datums were added to the H_DATUM_DEF table to make it so that the datasheet95 program no longer needs a hardcoded value for the horizontal datum abbreviation and thus, in combination with updating the code to use this table, any future addition of a *historical* horizontal datum to the H_DATUM_DEF table will no longer require the datasheet95 program to have to be recompiled to accommodate it (unless additional things like new paragraphs/text or other fields need to be modified on the datasheets).

The H_DATUM_DEF table now appears as such:

```
1> select * from H_DATUM_DEF
2> go
 DATUM DEFINITION                                          ABBREVIATION
 ----- --------------------------------------------------- ------------
 00    UNDETERMINED                                        UNDT
 27    NORTH AMERICAN DATUM OF 1927 (NAD27)                NAD 27
 64    INTERNATIONAL GREAT LAKES DATUM OF 1964 (IGLD64)    IGLD64
 72    WORLD GEODETIC SYSTEM OF 1972 (WGS72)               WGS72
 83    NORTH AMERICAN DATUM OF 1983 (NAD83)                NAD 83
 84    WORLD GEODETIC SYSTEM OF 1984 (WGS84)               WGS84
 93    INTNL TERRESTRIAL REFERENCE FRAME 1993 (ITRF93)     ITRF93
 94    INTNL TERRESTRIAL REFERENCE FRAME 1994 (ITRF94)     ITRF94
 96    INTNL TERRESTRIAL REFERENCE FRAME 1996 (ITRF96)     ITRF96
 97    INTNL TERRESTRIAL REFERENCE FRAME 1997 (ITRF97)     ITRF97
 AN    ANCHORAGE PT ASTRO DATUM                            AKAN
 AS    AMERICAN SAMOA DATUM OF 1962 (ASD62)                ASD 62
 BA    BARTER ISLAND DATUM 1948                            AKBA
 BS    BESSEL SPHEROID                                     USBS
 CC    CAMP COLONA 1890 DATUM                              AKCC
 CS    CHARLESTON AND SAVANNAH DATUM                       USCH
 FW    KRIPNIYUK - KWIKLOKCHUN DATUM                       AKFW
 FX    FLAXMAN ISLAND DATUM 1912                           AKFX
 GO    GOLOFNIN BAY 1899 DATUM                             AKGO
 GU    GUAM DATUM OF 1963                                  GU1963
 HI    OLD HAWAIIAN DATUM                                  OLD HI
 IA    INDEPENDENT ASTRO 1880                              USIA
 IL    ILIAMNA ASTRO DATUM                                 AKIL
 JI    JOHNSTON ISLAND DATUM OF 1961                       JI1961
 MI    MARY IS PT SIMPSON ASTRO DATUM                      AKMI
 MQ    MIDWAY ASTRO DATUM OF 1961 (MAD61)                  MAD61
 NO    NEW ORLEANS AND MOBILE DATUM                        USNO
 PB    POINT BARROW DATUM 1945                             AKPB
 PC    PORT CLARENCE ASTRO DATUM                           AKPC
 PR    PUERTO RICAN DATUM                                  PR
```

```
 PW    PRINCE WILLIAM SOUND DATUM                          AKPW
 SE    SOUTHEAST ALASKA DATUM                              AKSE
 SG    ST GEORGE 1897 DATUM                                AKSG
 SM    SAINT MICHAEL ASTRO DATUM                           AKSM
 SP    SAINT PAUL 1897                                     AKSP
 UN    UNALASKA DATUM                                      AKUN
 US    UNITED STATES STANDARD DATUM                        USSD
 VD    VALDEZ DATUM                                        AKVD
 VN    VICKSBURG NATCHEZ                                   USVN
 WE    WAKE-ENIWETOK DATUM OF 1960                         WE1960
 WK    WAKE ISLAND ASTRO DATUM OF 1952                     WK1952
 YA    YAKUTAT 1892 DATUM                                  AKYA
 YK    YUKON DATUM                                         AKYK
 Z0    INTNL TERRESTRIAL REFERENCE FRAME 2000 (ITRF00)     ITRF00
```

Part 1b: Extract hardcoded state categories (i.e. African States, Asian States, Caribbean States, Central American States, CONUS States, European States, Pacific Island States, South American States, US [non-territory] States) from the code and put them into the NGSIDB.STATES table. To accomplish this, several SQL scripts were written to create new columns in the STATES table as well as the routines to retrieve them from the STATES table. All routines using the former hardcoded states now use the updated modules that extract the states from the STATE table.

The following are the states considered to be African states:

```
1> select STATE from STATES where AFRICA_FLAG="Y"
2> go
STATE
-----
AF  AI  AO  AQ  BE  BG  CF  DN  EG  ET  FG  KO  LI  MU  OU  PL  SD  SF  SO
SU  TZ  UG  ZA  ZO
```

The following are the states considered to be Asian states:

```
1> select STATE from STATES where ASIA_FLAG="Y"
2> go
STATE
-----
CH  CW  DI  IZ  JA  NP  RP  SA  TW  UR
```

The following are the states considered to be Caribbean states:

```
1> select STATE from STATES where CARIBBEAN_FLAG="Y"
2> go
STATE
-----
AA  AC  AV  BB  BF  BQ  CJ  CP  CU  DO  DR  GJ  GP  GY  HA  JM  MH  MR  NT
PR  SJ  SN  ST  TD  TK  VC  VI  VQ
```

The following are the states considered to be Central American states:

```
1> select STATE from STATES where CENTRAL_AMERICA_FLAG="Y"
2> go
STATE
-----
AD  AG  AH  AN  AT  BA  BH  BN  BO  BS  BV  CC  CE  CG  CH  CK  CL  CM  CN
CR  CS  CV  CX  CY  CZ  DF  DU  EL  EN  EP  ER  ES  FR  GB  GD  GE  GN  GR
GT  HD  HL  HO  HU  HV  IB  II  JI  JL  JU  LE  LL  LM  LN  LP  LT  LU  LZ
MC  MF  MG  MJ  MP  MX  MY  MZ  NA  NI  NL  NU  OC  OL  OX  PN  PT  PU  QA
QI  QR  QT  QU  RE  RN  RS  RV  RZ  SB  SE  SG  SI  SL  SM  SP  SQ  SS  SV
SX  SY  SZ  TB  TL  TM  TO  UN  VL  VX  YO  YU  ZC  ZP
```

The following are the states considered to be CONUS states:

```
1> select STATE from STATES where CONUS_FLAG="Y"
2> go
STATE
-----
AL  AR  AZ  CA  CO  CT  DC  DE  FL  GA  IA  ID  IL  IN  KS  KY  LA  MA  MD
ME  MI  MN  MO  MS  MT  NC  ND  NE  NH  NJ  NM  NV  NY  OH  OK  OR  PA  RI
SC  SD  TN  TX  UT  VA  VT  WA  WI  WV  WY
```

The following are the states considered to be European states:

```
1> select STATE from STATES where EUROPE_FLAG="Y"
2> go
STATE
-----
DA  FI  FN  GL  GM  IC  IT  NO  RO  SW  UK  WG
```

The following are the states considered to be Pacific Island states:

```
1> select STATE from STATES where PACIFIC_ISLAND_FLAG="Y"
2> go
STATE
-----
CQ  FM  GU  JQ  ML  MQ  PW  TQ  UM  WQ
```

The following are the states considered to be South American states:

```
1> select STATE from STATES where SOUTH_AMERICA_FLAG="Y"
2> go
STATE
-----
AJ  BL  BR  CB  CI  EC  PY  SR  UY  VE
```

Part 1c: Extract the hard coded state codes from the routines that get all the states for specific countries (i.e. Canada, El Salvador, Honduras, Guatemala, and Mexico) and get them instead from the STATES table. To accomplish this, several SQL scripts were to extract the data from the STATES table by country and a new routine was also written to allow the retrieval of any country's states if given the COUNTRY_FIPs code.

The states of Canada, using the new stored procedure, are:

```
1> RET_STATES_BY_COUNTRY "CA"
2> go
 STATE
 -----
 AB  BC  CD  MB  NB  NF  NN  NS  NW  ON  PE  PQ  SK  YK
```

The states of El Salvador, using the new stored procedure, are:

```
1> RET_STATES_BY_COUNTRY "ES"
2> go
STATE
-----
AH  CS  ES  HL  LL  LN  LP  LU  RN  SE  SM  SS  SV  SX  UN
```

The states of Guatemala, using the new stored procedure, are:

```
1> RET_STATES_BY_COUNTRY "GT"
2> go
STATE
-----
BV  EN  EP  GE  GT  HU  HV  JU  LT  PT  QI  QT  QU  RE  SG  SP  SQ  SY  SZ
TO  ZP
```

The states of Honduras, using the new stored procedure, are:

```
1> RET_STATES_BY_COUNTRY "HO"
2> go
STATE
-----
AD  BA  CE  CK  CV  CX  CY  ER  FR  GD  HO  IB  II  LM  LZ  OC  OL  VX  YO
```

The states of Mexico, using the new stored procedure, are:

```
1> RET_STATES_BY_COUNTRY "MX"
2> go
STATE
-----
AG  BN  BS  CC  CH  CL  CM  CZ  DF  DU  GB  GR  HD  JL  MC  MF  MJ  MX  NA
NL  OX  PU  QA  QR  SB  SI  SL  TB  TL  TM  VL  YU  ZC
```

Part 2: There is a bug where a handheld position should have been displayed on the NAD 83 line in the SURVEY CONTROL section of the datasheets but a scaled position was displayed instead. This situation occurred only whenever the ADJ_DATE was NULL on both of these positions. We later found that there were six marks in the NGSIDB.POSITION table that were adjusted positions that had an ADJ_DATE of NULL (i.e. DL3531, DL3555, DL3535, DL3559, DL3538, DL3562), as well as eight marks in the NGSIDB.POSITION table that were superseded positions that had an ADJ_DATE of NULL (i.e. AQ1393, FB2921, DF9366, DF9367, DF9369, DF93769, DF9370, DF9371). This has been corrected.

Version 7.87.2 released at 2:52pm on 07/11/2011

The SPC coordinates for certain marks is not displaying the millionth digit. Example PID: AY0031. This release will fix the issue by increasing the width of the display field. The following PIDS can be used for testing: AY0031, HW1096, KR1355, and LR0232.

Version 7.87.1 released at 1:35pm on 06/02/2011

This release implements the following changes:

Part 1: Handling Heights in the Southern Louisiana Subsidence Area in the SUPERSEDED SURVEY CONTROL Section of the Datasheets

datasheet95 V7.87 put superseded GPSed heights in the SUPERSEDED SURVEY CONTROL section of the datasheets. While this was the desired intent, there is a single exception to the rule. The only time you wouldn't put superseded GPSed heights, or any height in the SUPERSEDED SURVEY CONTROL section is if a mark is in the Southern Louisiana subsidence area and it is NOT in project GPS2329 then no superseded heights whatsoever (i.e. 88's or best 29) are supposed to appear in the superseded section of the datasheet for that mark. They will eventually appear when "suspect heights" are requested. Example PIDs to test are: BJ1212, BJ1655, BJ1758, DH3213, AT1436, AU3545, AB4041, AT1409, AU0076, and AU0295.

Part 2: Fixing the intg program which is called from the datasheet95 program so that the GEOID model information appears properly on datasheets running on the x86 machines. When running on the x86 machines an error is generated when computing the GEOID HEIGHT and LAPLACE COOR if the model is GEOID09. The problem is related to big/little endian conversion of binary data in the grid files. This only impacts the x96 servers. Example PIDs to test are AH5044, BJ1227, and DJ9357.

Version 7.87 released at 10:28am on 06/08/2011

This release implements the following changes to the version 7.86 code in the repository.

In the past it was NGS' opinion that GPS derived orthometric heights were not of a quality to be included in the superseded section of the datasheet. With the technological advancements and the implementation of height modification procedures there have been numerous requests from stakeholders to include the history GPS-derived orthometric heights.

Responding to stakeholder feedback, NGS will provide GPS derived superseded heights on the NGS Data Sheet. First, identify height mod and non-height mod GPS derived NAVD88 heights and second, provide these heights on the NGS datasheet.

The following changes were made to the data sheet layout for marks which have GPS derived heights superseded by newer heights. In the superseded section of the datasheet any NAVD88 GPS derived height are added. Besides having an ELEV_AVAIL of 'U' (i.e. Unrestricted) or 'X' (i.e. Submitting Agency is Responsible for Leveling Height and Field Data Verification), a GPS derived height has an ELEV_SOURCE of 'H' for HNB Elevation, an ELEV_TECH of 'G' for GPS, and a GPS_HT_PRECISION of:

0 – meaning a GPS height published to meter precision
1 - or NULL - for a PAC or SAC meaning a GPS height that is published to the nearest cm *
1 - or NULL, **not** for a PAC nor SAC meaning a GPS height should that is published to the nearest dm
2 – meaning a GPS that is published to the nearest cm

* Caveat: FAA GPS derived heights with GPS_HT_PRECISION of 1 or NULL will be published to the nearest cm.

NOTE: The GPS_HT_PRECISION table is generally not populated with code of 1 but rather it is the default value for all orthometric heights with an ELEV_SOURCE=H and ELEV_TECH and no other code in the table

Version 7.86 released at 1:31pm on 05/04/2011

- New states were added to the STATES table.

- Some reason codes were NEVER hit and were eliminated and in other instances, there were no reason codes (such as whenever a L1 Phase Center/antenna was destroyed/replaced/superseded) to explain why a mark/site/station was unpublishable. Thus, the never-hit reason codes were deleted and reason codes for cases that were not covered but should have been were added.
- Corrected the Field Height in software request #3204. In order to correct this, PPC members had to sit down and come up with all of the combinations of ELEV_SOURCE/ELEV_TECH/ELEV_AVAIL and if the combination was not allowed we had to come up with the reason (code/text) as to why it was not allowed.

  An example of a mark that is a field height that should not have been publicly publishable is DK7165.

- Added code to allow for the following historical horizontal datums codes to appear properly in the superseded section of the datasheets.

DATUM	DEFINITION
AN	ANCHORAGE PT ASTRO DATUM
AS	AMERICAN SAMOA DATUM OF 1962 (ASD62)
BA	BARTER ISLAND DATUM 1948
BS	BESSEL SPHEROID
CC	CAMP COLONA 1890 DATUM
CS	CHARLESTON AND SAVANNAH DATUM
FW	KRIPNIYUK - KWIKLOKCHUN DATUM
FX	FLAXMAN ISLAND DATUM 1912
GO	GOLOFNIN BAY 1899 DATUM
GU	GUAM DATUM OF 1963
HI	OLD HAWAIIAN DATUM
IL	ILIAMNA ASTRO DATUM
JI	JOHNSTON ISLAND DATUM OF 1961
MI	MARY IS PT SIMPSON ASTRO DATUM
MQ	MIDWAY ASTRO DATUM OF 1961 (MAD61)
NO	NEW ORLEANS AND MOBILE DATUM
PB	POINT BARROW DATUM 1945
PC	PORT CLARENCE ASTRO DATUM
PR	PUERTO RICAN DATUM
PW	PRINCE WILLIAM SOUND DATUM
SE	SOUTHEAST ALASKA DATUM
SG	ST GEORGE 1897 DATUM
SM	SAINT MICHAEL ASTRO DATUM
SP	SAINT PAUL 1897
UN	UNALASKA DATUM
US	UNITED STATES STANDARD DATUM
VD	VALDEZ DATUM
WE	WAKE-ENIWETOK DATUM OF 1960
WK	WAKE ISLAND ASTRO DATUM OF 1952
YA	YAKUTAT 1892 DATUM
YK	YUKON DATUM

- Updated the reason codes (the displayed text that shows why a control point is not publishable to the public). Formerly the reason codes were:

```
-------------------------------------------------------------------------------
-   This listing contains control for which complete digital                  -
-   data sheets where not provided.  The complete data sheets were            -
-   not provided for the reason listed below.  The reason below is            -
-   associated with a horizontal control Nonpub code shown under              -
-   the heading 'H' and/or a vertical control Nonpub code shown under         -
-   the heading 'v'                                                           -
-                                                                             -
-   The format of the records are as follows:                                 -
-       Pid  = Station Permanent Identifier)                                  -
-       Name = Station Designation                                            -
-       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)         -
-       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)        -
-       O    = Horizontal Order                                               -
-       o    = Vertical Order                                                 -
-       H    = Horizontal Nonpub Code                                         -
-       v    = Vertical Nonpub Code                                           -
-                                                                             -
-       H Nonpub HORIZONTAL CONTROL NONPUB REASON                             -
-       -------- ---------------------------------                            -
-       X        Surface Mark Reported Destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-       A        A-Order Horizontal mark not tied to an adjusted HARN         -
-       C        C-Nonoperational CORS Station                                -
-       W        Weakly determined position.                                  -
-       P        Purpose of position is not for network control               -
-       D        No Descriptive Text available                                -
-       R        Restricted position                                          -
-       O        Outside NGS Publication Area                                 -
-       N        No geodetic control at this mark                             -
-                                                                             -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                               -
-       -------- ----------------------------                                 -
-       X        Surface Mark Reported Destroyed                              -
-       Y        Surface and underground mark reported destroyed              -
-       F        Bench Mark not yet adjusted.                                 -
-       D        No Descriptive Text available                                -
-       Z        Presumed destroyed                                           -
-       R        Restricted elevation                                         -
-       O        Outside NGS Publication Area                                 -
-       N        No geodetic control at this mark                             -
-       S        Mark is in a subsidence area                                 -
-                                                                             -
-                                                                             -
-   NOTE - Stations found in this listing may still have a valid              -
-          datasheet produced by use of other publishable values.             -
-          For example, an ADJUSTED height may be non-publishable             -
-          but a good GPS height might be found on the datasheet.             -
-          This listing does not imply that values found on the datasheet     -
-          are restricted.  If it's on the datasheet, use it.                 -
-                                                                             -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
>DE6608 ST. JOHN'S CORS MON.          47 35 42.8/052 40 39.9           A   O
```

- On the previous version of the datasheet95 program (i.e. V7.85) , if a control point had a horizontal datum of 27, and was located in a Central American state:

STATE	STATE_NAME
AD	ATLANTIDA
AG	AGUASCALIENTES
AH	AHUACHAPAN

BA	SANTA BARBARA
BH	UNIDENTIFIED DISTRICT OF BELIZE (BRITISH HONDURAS)
BN	BAJA CALIFORNIA NORTE
BS	BAJA CALIFORNIA SUR
BV	BAJA VERAPAZ
CC	CHIHUAHUA
CE	CHOLUTECA
CH	CHIAPAS
CK	COLON
CL	COLIMA
CM	CAMPECHE
CR	UNIDENTIFIED PROVINCE OF COSTA RICA
CS	CABANAS
CU	UNIDENTIFIED PROVINCE OF CUBA
CV	CORTES
CX	COPAN
CY	COMAYAGUA
CZ	COAHUILA DE ZARAGOZA
DF	DISTRITO FEDERAL
DU	DURANGO
EN	ESCUINTLA
EP	EL PROGRESO
ER	EL PARAISO
ES	UNIDENTIFIED DEPARTMENT OF EL SALVADOR
FR	FRANCISCO MORAZAN
GB	GUANAJUATO
GD	GRACIAS A DIOS
GE	GUATEMALA
GR	GUERRERO
GT	UNIDENTIFIED DEPARTMENT OF GUATEMALA
HA	UNIDENTIFIED DEPARTMENT OF HAITI
HD	HIDALGO
HL	CHALATENANGO
HO	UNIDENTIFIED DEPARTMENT OF HONDURAS
HU	HUEHUETENANGO
HV	ALTA VERAPAZ
IB	ISLAS DE LA BAHIA
II	INTIBUCA
JL	JALISCO
JU	JUTIAPA
LL	LA LIBERTAD
LM	LEMPIRA
LN	CUSCATLAN
LP	LA PAZ
LT	CHIMALTENANGO
LU	LA UNION
LZ	LA PAZ
MC	MICHOACAN DE OCAMPO

MF	MORELOS
MJ	MEXICO
MX	UNIDENTIFIED STATE OF MEXICO
NA	NAYARIT
NI	UNIDENTIFIED DEPARTMENT OF NICARAGUA
NL	NUEVO LEON
OC	OCOTEPEQUE
OL	OLANCHO
OX	OAXACA
PN	UNIDENTIFIED PROVINCE OF PANAMA
PT	PETEN
PU	PUEBLA
QA	QUERETARO DE ARTEAGA
QI	QUICHE
QR	QUINTANA ROO
QT	QUETZALTENANGO
QU	CHIQUIMULA
RE	RETALHULEU
RN	MORAZAN
SB	SONORA
SE	SONSONATE
SG	SUCHITEPEQUEZ
SI	SINALOA
SL	SAN LUIS POTOSI
SM	SAN MIGUEL
SP	SACATEPEQUEZ
SQ	SOLOLA
SS	SAN SALVADOR
SV	SAN VICENTE
SX	SANTA ANA
SY	SANTA ROSA
SZ	SAN MARCOS
TB	TABASCO
TL	TLAXCALA
TM	TAMAULIPAS
TO	TOTONICAPAN
UN	USULUTAN
VL	VERACRUZ-LLAVE
VX	VALLE
YO	YORO
YU	YUCATAN
ZC	ZACATECAS
ZP	ZACAPA

or a Caribbean state:

STATE	STATE_NAME
AA	UNIDENTIFIED REGION OF ARUBA
AC	UNIDENTIFIED PARISH OF ANTIGUA AND BARBUDA

AV	UNIDENTIFIED PROVINCE OF ANGUILLA
BB	UNIDENTIFIED PARISH OF BARBADOS
BF	UNIDENTIFIED DISTRICT OF BAHAMA ISLANDS
CJ	UNIDENTIFIED DISTRICT OF CAYMAN ISLANDS
CP	UNIDENTIFIED REGION OF CURACAO
DO	UNIDENTIFIED PARISH OF DOMINICA
DR	UNIDENTIFIED PROVINCE OF DOMINICAN REPUBLIC
GJ	UNIDENTIFIED PARISH OF GRENADA
GP	UNIDENTIFIED PROVINCE OF GUADELOUPE
GY	UNIDENTIFIED REGION OF GUYANA
HA	UNIDENTIFIED DEPARTMENT OF HAITI
JM	UNIDENTIFIED PARISH OF JAMAICA
MH	UNIDENTIFIED PARISH OF MONTSERRAT
MR	UNIDENTIFIED PROVINCE OF MARTINIQUE
MT	MONTANA
NT	UNIDENTIFIED PROVINCE OF NETHERLANDS ANTILLES
SJ	UNIDENTIFIED REGION of ST MAARTEN
SN	UNIDENTIFIED PARISH OF ST KITTS AND NEVIS
SR	UNIDENTIFIED DISTRICT OF SURINAM
ST	UNIDENTIFIED QUARTER OF ST LUCIA
TD	UNIDENTIFIED COUNTY OF TRINIDAD AND TOBAGO
TK	UNIDENTIFIED PROVINCE OF TURKS and CAICOS ISLANDS
VC	UNIDENTIFIED PARISH OF ST VINCENT AND GRENADINES
VI	UNIDENTIFIED PROVINCE OF BRITISH VIRGIN ISLANDS

then the output datum in the superseded section was set to 72 (i.e. WORLD GEODETIC SYSTEM OF 1972 (WGS72)) without any conversion of the latitude or longitude to a real 72 position. This was correct this so that positions with a datum of 27 in these states will no longer be set to a 72 in the SUPERSEDED SURVEY CONTROL section of the datasheet.

- No scaled position will be put into the superseded section any longer. Note: The only horizontal datums that have an associated scaled position in the database are 00, 83, 27, AS, GU, HI, and PR.

- Verified that at least one of each of the CORS categories is publicly publishable on datasheets. Some PIDs tested are in the table below:

CORS_CATEGORY	DEFINITION	PID	CORS SITE
1	NATIONAL	DE9144	ZTL4
2	CIGNET	AF9520	WES2
3	CALIFORNIA	DE6612	VNDP
4	COOPERATIVE	DE7967	WACO
8	OTHER	DE6580	HARV

- Verified that only Active CORS sites are publicly publishable stations on a datasheet. Some sample PIDs tested are in the table below:

SITE_STATUS	DEFINITION	PID	CORS SITE
A	ACTIVE	DE6356	ZOA2
D	INACTIVE	AH6080	SAV2

N	NON-PUBLISHABLE	DF8268	HGAD
P	PROPOSED	N/A	N/A

- Verified that only publishable/active L1 Phase Centers are publicly publishable marks/stations/sites on a datasheet.

  We have the following PUB types:

PUB	DEFINITION
N	NO DO NOT USE THIS FOR PUBLICATION
Y	YES USE THIS FOR PUBLICATION

- Corrected the issue of no datasheet information coming out (including the reason why the mark/station/site was not displayable/publishable) outside of the name of the program and the version number whenever the user typed in PIDs that were publicly unpublishable. As part of this correction, the reasons as to why a mark was publicly publishable/unpublishable horizontally, vertically and in combination were examined to find the cases that were falling through the cracks. Example (using the command line version of datasheet95):

```
datasheet95 CG1293
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.85

 *** retrieval complete.
 Elapsed Time = 00:00:00
```

  You should now get:

```
datasheet95 CG1293
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.86

 *** retrieval complete.
 Elapsed Time = 00:00:00



 ------------------------------------------------------------------------------
 -   This listing contains control for which complete digital                 -
 -   data sheets where not provided.  The complete data sheets were           -
 -   not provided for the reason listed below.  The reason below is           -
 -   associated with a horizontal control Nonpub code shown under             -
 -   the heading 'H' and/or a vertical control Nonpub code shown under        -
 -   the heading 'v'                                                          -
 -                                                                            -
 -   The format of the records are as follows:                                -
 -       Pid  = Station Permanent Identifier)                                 -
 -       Name = Station Designation                                           -
 -       Lat  = Approx. Latitude (Degrees, Minutes, truncated Seconds)        -
 -       Lon  = Approx. Longitude (Degrees, Minutes, truncated Seconds)       -
 -       O    = Horizontal Order                                              -
 -       o    = Vertical Order                                                -
 -       H    = Horizontal Nonpub Code                                        -
 -       v    = Vertical Nonpub Code                                          -
 -                                                                            -
 -       H Nonpub HORIZONTAL CONTROL NONPUB REASON                            -
 -       -------- --------------------------------                            -
 -       A        CORS site is not active                                     -
 -       B        Station is a RBN antenna                                    -
 -       C        Not a publishable datum within the state                    -
 -       D        No descriptive text available                               -
 -       L        CORS L1 Phase Center is not publishable                     -
 -       N        No geodetic control                                         -
 -       O        Outside NGS publication area                                -
```

```
-       P        Purpose of position is not for network control            -
-       R        Restricted position                                       -
-       T        Station is a temporary point/bench mark                   -
-       V        Station is a VOR antenna                                  -
-       W        Weakly determined position                                -
-       X        Surface mark reported destroyed                           -
-       Y        Surface and underground mark reported destroyed           -
                                                                           -
-       v Nonpub VERTICAL CONTROL NONPUB REASON                            -
-       -------- ------------------------------                            -
-       A        CORS site is not active                                   -
-       D        No descriptive text available                             -
-       F        Bench mark not yet adjusted                               -
-       N        No geodetic control                                       -
-       L        CORS L1 Phase Center is not publishable                   -
-       O        Outside NGS publication area                              -
-       R        Restricted elevation                                      -
-       S        Mark is in a subsidence area                              -
-       T        Station is a temporary point/bench mark                   -
-       X        Surface mark reported destroyed                           -
-       Y        Surface and underground mark reported destroyed           -
-       Z        Presumed destroyed                                        -
-                                                                          -
-                                                                          -
-   NOTE - Stations found in this listing may still have a valid           -
-          datasheet produced by use of other publishable values.          -
-          For example, an ADJUSTED height may be non-publishable          -
-          but a good GPS height might be found on the datasheet.          -
-          This listing does not imply that values found on the datasheet  -
-          are restricted.  If it's on the datasheet, use it.              -
-                                                                          -
-------------------------------------------------------------------------------
 Pid    Name                           Lat        Lon        Elev      O o Hv
 ------ ------------------------------ ---------- ---------- --------- - - --
>CG1293 CARSON RM 2                   32 29 17. /089 15 19.               DD
```

Version 7.17 on 03/29/2005

CHANGE #1: Changed Vertical Datum for Northern Marianas Islands from NM to NMVD03

Before and after sample section for changes #1

```
OLD...
DG3936* NM          -       102.920  (meters)     337.66   (feet)  ADJUSTED

NEW...
DG3936* NMVD03      -       102.920  (meters)     337.66   (feet)  ADJUSTED
```

Version 7.14 on 03/11/2005

CHANGE #1: Specific Setting text broken out from _SETTING to _SP
CHANGE #2: Changed Guam vertical datum from LOCAT TIDAL to GUVD63 or GUVD04

Before and After sample section for changes #1, #2:

```
 OLD...
 GA0132_SETTING: 36 = BRIDGE
 TW0041* LOCAL TIDAL -         2.170   (meters)       7.12    (feet)  ADJUSTED
 TW0073* LOCAL TIDAL -        41.722   (meters)     136.88    (feet)  ADJ UNCH

 NEW...
 GA0132_SETTING: 36 = SET IN A MASSIVE STRUCTURE
 GA0132_SP_SET: BRIDGE
 TW0041* GUVD04      -         2.170   (meters)       7.12    (feet)  ADJUSTED
 TW0073* GUVD63      -        41.722   (meters)     136.88    (feet)  ADJ UNCH
```

Version 6.98 on 02/18/2004

CHANGE #1: Added Combined Factors records !SPC and !UTM
CHANGE #2: Changed text 'Scale' to 'Scale Factor'
CHANGE #3: Shifted the Convergence value right two spaces.

Before and after sample section for changes #1, #2, #3:

```
 OLD...
 JV6439;                   North         East     Units   Scale
Converg.
 JV6439;SPC MD       -   162,470.999   381,407.458   MT  0.99995967 -0 08
05.9
 JV6439;SPC MD       -   533,040.27  1,251,334.30   sFT  0.99995967 -0 08
05.9
 JV6439;UTM  18      - 4,333,550.574   308,538.415   MT  1.00005139 -1 23
53.9

 NEW...
 JV6439;                   North         East     Units Scale Factor
Converg.
 JV6439;SPC MD       -   162,470.999   381,407.458   MT  0.99995967   -0 08
05.9
 JV6439;SPC MD       -   533,040.27  1,251,334.30   sFT  0.99995967   -0 08
05.9
 JV6439;UTM  18      - 4,333,550.574   308,538.415   MT  1.00005139   -1 23
53.9
 JV6439
 JV6439!             -  Elev Factor  x  Scale Factor =   Combined Factor
 JV6439!SPC MD       -   0.99998342  x   0.99995967  =   0.99994310
 JV6439!UTM  18      -   0.99998342  x   1.00005139  =   1.00003481
```

Version 6.85 on 09/11/2003

CHANGE #1: Add Superseded NAVD 88 heights to the Superseded section
CHANGE #2: Include Dates on Superseded elevations
CHANGE #3: Move the date on the Superseded Ellip Ht.
CHANGE #4: Shift the Superseded Ellip Ht value left two spaces.
CHANGE #5: Now publishing hand held GPS positions when available for benchmarks.

Before and after sample section for changes #1, #2, #3, #4:

```
 OLD...
 JV6439                          SUPERSEDED SURVEY CONTROL
 JV6439
 JV6439  ELLIP HT    -         105.66   (m)           (07/24/97) GP(       ) 2
1
 JV6439  ELLIP HT    -         105.66   (m)           (11/22/95) GP(       ) 1
1
 JV6439  ELLIP HT    -         105.59   (m)           (06/29/95) GP(       ) 2
2
 JV6439  ELLIP HT    -         105.72   (m)           (10/26/94) GP(       ) 4
2
 JV6439  ELLIP HT    -         105.54   (m)           (06/29/94) GP(       ) 4
1
 JV6439  NAD 83(1991)-  39 07 48.36845(N)    077 12 54.11609(W) AD(       ) B
 JV6439  ELLIP HT    -         105.54   (m)           (10/21/93) GP(       ) 2
2
 JV6439  NAD 83(1991)-  39 07 48.36527(N)    077 12 54.11358(W) AD(       ) 1
 JV6439  ELLIP HT    -         105.60   (m)           (01/27/92) GP(       ) 4
1
 JV6439  NAD 83(1986)-  39 07 48.36542(N)    077 12 54.12413(W) AD(       ) 1
 JV6439  NGVD 29     -       137.56   (m)          451.3    (f) LEVELING    3

 NEW...
 JV6439                          SUPERSEDED SURVEY CONTROL
 JV6439
 JV6439  ELLIP H (07/24/97)  105.66   (m)                       GP(       ) 2
1
 JV6439  ELLIP H (11/22/95)  105.66   (m)                       GP(       ) 1
1
 JV6439  ELLIP H (06/29/95)  105.59   (m)                       GP(       ) 2
2
 JV6439  ELLIP H (10/26/94)  105.72   (m)                       GP(       ) 4
2
 JV6439  ELLIP H (06/29/94)  105.54   (m)                       GP(       ) 4
1
 JV6439  NAD 83(1991)-  39 07 48.36845(N)    077 12 54.11609(W) AD(       ) B
 JV6439  ELLIP H (10/21/93)  105.54   (m)                       GP(       ) 2
2
 JV6439  NAD 83(1991)-  39 07 48.36527(N)    077 12 54.11358(W) AD(       ) 1
 JV6439  ELLIP H (01/27/92)  105.60   (m)                       GP(       ) 4
1
 JV6439  NAD 83(1986)-  39 07 48.36542(N)    077 12 54.12413(W) AD(       ) 1
 JV6439  NAVD 88 (04/11/97)  137.355  (m)          450.64   (f) UNKNOWN     1
1
```

```
 JV6439  NAVD 88 (07/05/94)  137.352  (m)          450.63   (f) UNKNOWN     1
1
 JV6439  NAVD 88 (06/15/91)  137.353  (m)          450.63   (f) UNKNOWN     1
1
 JV6439  NGVD 29 (12/18/90)  137.56   (m)          451.3    (f) LEVELING    3
```

Datasheet Sample showing change #5:

```
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 12, 2003
 TA0047 ***********************************************************************
 TA0047  DESIGNATION -  G 216
 TA0047  PID         -  TA0047
 TA0047  STATE/COUNTY-  MN/COOK
 TA0047  USGS QUAD   -  LONG ISLAND LAKE (1986)
 TA0047
 TA0047                        *CURRENT SURVEY CONTROL
 TA0047  ______________________________________________________________________
 TA0047* NAD 83(1986)-  48 04 54.20   (N)    090 45 48.42   (W)      HD_HELD1
 TA0047* NAVD 88     -       512.698  (meters)    1682.08   (feet)   ADJUSTED
 TA0047  ______________________________________________________________________
 TA0047  GEOID HEIGHT-         -30.65  (meters)                      GEOID99
 TA0047  DYNAMIC HT  -         512.802 (meters)    1682.42  (feet)   COMP
 TA0047  MODELED GRAV-     980,798.7   (mgal)                        NAVD 88
 TA0047
 TA0047  VERT ORDER  -  SECOND    CLASS 0
 TA0047
 TA0047.The horizontal coordinates were established by differentially corrected
 TA0047.hand held GPS obs and have an estimated accuracy of +/- 3 meters.
 TA0047
 TA0047.The orthometric height was determined by differential leveling
 TA0047.and adjusted by the National Geodetic Survey in June 1991.
 TA0047
 TA0047.Photographs are available for this station.
 TA0047
 TA0047.The geoid height was determined by GEOID99.
 TA0047
 TA0047.The dynamic height is computed by dividing the NAVD 88
 TA0047.geopotential number by the normal gravity value computed on the
 TA0047.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 TA0047.degrees latitude (g = 980.6199 gals.).
 TA0047
 TA0047.The modeled gravity was interpolated from observed gravity values.
 TA0047
 TA0047;                   North         East     Units  Estimated Accuracy
 TA0047;SPC MN N     -   278,477.4     974,048.5     MT  (+/- 3 meters HH1 GPS)
 TA0047
 TA0047                         SUPERSEDED SURVEY CONTROL
 TA0047
 TA0047  NGVD 29 (??/??/92)  512.518  (m)          1681.49   (f) ADJ UNCH    2 0
 TA0047
 TA0047.Superseded values are not recommended for survey control.
 TA0047.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 TA0047.See file dsdata.txt to determine how the superseded data were derived.
 TA0047
 TA0047_U.S. NATIONAL GRID SPATIAL ADDRESS: 15UXP6656827803(NAD 83)
 TA0047_MARKER: DB = BENCH MARK DISK
 TA0047_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 TA0047_STAMPING: G 216 1935
 TA0047_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
```

```
 TA0047+STABILITY: SURFACE MOTION
 TA0047
 TA0047  HISTORY     - Date     Condition        Report By
 TA0047  HISTORY     - 1935     MONUMENTED       CGS
 TA0047  HISTORY     - 1958     GOOD             USGS
 TA0047
 TA0047                          STATION DESCRIPTION
 TA0047
 TA0047'DESCRIBED BY US GEOLOGICAL SURVEY 1958
 TA0047'AT GUNFLINT TRAIL LODGE.
 TA0047'AT THE JUNCTION OF THE GUNFLINT TRAIL AND THE GUNFLINT LODGE
 TA0047'ROAD, IN T 65 N, R3W, 42 FEET NORTH AND 95 FEET EAST OF THE
 TA0047'CENTER OF THE JUNCTION OF THE TWO ROADS, 98 FEET NORTH OF THE
 TA0047'CENTERLINE OF THE GUNFLINT TRAIL, 84 FEET EAST OF THE CENTERLINE
 TA0047'OF THE GUNFLINT LODGE ROAD, IN THE BRUSH, AND 8 FEET FROM THE
 TA0047'TIMBERLINE.  A STANDARD DISK, STAMPED G 216 1935 AND SET IN THE
 TA0047'TOP OF A CONCRETE POST PROJECTING 6 INCHES ABOVE GROUND.
1        National Geodetic Survey,   Retrieval Date = SEPTEMBER 12, 2003
 AC3384 ***********************************************************************
 AC3384  DESIGNATION -  COL 15
 AC3384  PID         -  AC3384
 AC3384  STATE/COUNTY-  FL/COLLIER
 AC3384  USGS QUAD   -  MARCO ISLAND (1995)
 AC3384
 AC3384                          *CURRENT SURVEY CONTROL
 AC3384  ______________________________________________________________________
 AC3384* NAD 83(1986)-  25 57 14.7    (N)    081 43 29.2    (W)     HD_HELD2
 AC3384* NAVD 88     -         0.787  (meters)       2.58   (feet)  ADJUSTED
 AC3384  ______________________________________________________________________
 AC3384  GEOID HEIGHT-         -23.10  (meters)                      GEOID99
 AC3384  DYNAMIC HT  -           0.786 (meters)       2.58  (feet)  COMP
 AC3384  MODELED GRAV-     979,037.7   (mgal)                        NAVD 88
 AC3384
 AC3384  VERT ORDER  -  FIRST     CLASS II
 AC3384
 AC3384.The horizontal coordinates were established by autonomous hand held GPS
 AC3384.observations and have an estimated accuracy of +/- 10 meters.
 AC3384
 AC3384.The orthometric height was determined by differential leveling
 AC3384.and adjusted by the National Geodetic Survey in January 2002.
 AC3384
 AC3384.The geoid height was determined by GEOID99.
 AC3384
 AC3384.The dynamic height is computed by dividing the NAVD 88
 AC3384.geopotential number by the normal gravity value computed on the
 AC3384.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AC3384.degrees latitude (g = 980.6199 gals.).
 AC3384
 AC3384.The modeled gravity was interpolated from observed gravity values.
 AC3384
 AC3384;                    North         East     Units  Estimated Accuracy
 AC3384;SPC FL E     -   179,729.      127,412.      MT  (+/- 10 meters HH2 GPS)
 AC3384
 AC3384                          SUPERSEDED SURVEY CONTROL
 AC3384
 AC3384  NAVD 88 (06/15/91)    0.795  (m)            2.61   (f) UNKNOWN     2 1
 AC3384  NGVD 29 (09/01/92)    1.194  (m)            3.92   (f) ADJUSTED    2 1
 AC3384
 AC3384.Superseded values are not recommended for survey control.
 AC3384.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AC3384.See file dsdata.txt to determine how the superseded data were derived.
 AC3384
 AC3384_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ2743770800(NAD 83)
```

```
AC3384_MARKER: DB = BENCH MARK DISK
AC3384_SETTING: 31 = DROP INLET APRON
AC3384_STAMPING: COL 15 1984 BSM
AC3384_MARK LOGO: FLDNR
AC3384_MAGNETIC: N = NO MAGNETIC MATERIAL
AC3384_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AC3384_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AC3384+SATELLITE: SATELLITE OBSERVATIONS - March 18, 2002
AC3384
AC3384  HISTORY     - Date     Condition        Report By
AC3384  HISTORY     - 1984     MONUMENTED       FLDNR
AC3384  HISTORY     - 1990     GOOD             USPSQD
AC3384  HISTORY     - 19900509 GOOD             FLDNR
AC3384  HISTORY     - 20010701 GOOD             LDBLS
AC3384  HISTORY     - 20020318 GOOD             MAPTEC
AC3384
AC3384                          STATION DESCRIPTION
AC3384
AC3384'DESCRIBED BY FL DEPT OF NAT RES 1984
AC3384'IN MARCO ISLAND.
AC3384'BEGIN AT THE JUNCTION OF STATE ROAD 92 WITH STATE ROAD 951 (COLLIER
AC3384'BOULEVARD), GO 1.5 MILES NORTHERLY ON STATE ROAD 951 TO THE
AC3384'INTERSECTION OF BALD EAGLE DRIVE (COUNTY ROAD C 953).  THE MARK BEARS
AC3384'26.7 FEET SOUTHEAST OF THE CENTERLINE OF STATE ROAD 951, 39 FEET
AC3384'SOUTHWEST OF THE CENTERLINE OF C 953, AND 4.1 FEET NORTH OF A CONCRETE
AC3384'POWER POLE WITH PEDESTRIAN CROSSWALK SIGNALS.
AC3384'THE MARK IS 1 FT BELOW ROAD.
AC3384
AC3384                          STATION RECOVERY (1990)
AC3384
AC3384'RECOVERY NOTE BY US POWER SQUADRON 1990 (HEA)
AC3384'RECOVERED IN GOOD CONDITION.
AC3384
AC3384                          STATION RECOVERY (1990)
AC3384
AC3384'RECOVERY NOTE BY FL DEPT OF NAT RES 1990 (VAC)
AC3384'RECOVERED AS DESCRIBED.
AC3384
AC3384                          STATION RECOVERY (2001)
AC3384
AC3384'RECOVERY NOTE BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
AC3384'THE MARK IS ABOUT 24.9 KM (15.5 MI) SOUTHEAST OF NAPLES, ON MARCO
AC3384'ISLAND, IN
AC3384'SECTION 8, TOWNSHIP 52 SOUTH, RANGE 26 EAST, COLLIER COUNTY FLORIDA.
AC3384'OWNERSHIP-
AC3384'FLORIDA DEPARTMENT OF TRANSPORTATION
AC3384'
AC3384'TO REACH THE MARK FROM THE INTERSECTION OF I-75 AND COUNTY ROAD NO.
AC3384'951 (I-75
AC3384'EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD NO. 951 11.1 KM (6.9 MI)
AC3384'TO THE
AC3384'INTERSECTION WITH U.S. NO. 41 (TAMIAMI TRAIL) PROCEED SOUTH ON STATE
AC3384'ROAD NO.
AC3384'951 11.2 KM (6.95 MI) TO THE CENTER OF THE MARCO PASS BRIDGE NO.
AC3384'030148 (JUDGE
AC3384'S.S. JOLLEY BRIDGE, OVER MARCO RIVER), CONTINUE SOUTH-SOUTHWEST ALONG
AC3384'STATE
AC3384'ROAD 951 (COLLIER BLVD) 2.0 KM (1.25 MI) TO THE INTERSECTION WITH BALD
AC3384'EAGLE
AC3384'DRIVE AND THE MARK IN THE SOUTHEAST CORNER OF THE INTERSECTION.
AC3384'
AC3384'THE MARK IS SET FLUSH ON A 0.46 M (1.5 FT) WIDE CONCRETE APRON ON THE
AC3384'SOUTHEAST SIDE OF A CONCRETE DROP INLET, ABOUT 0.30 M (1.0 FT) BELOW
```

```
AC3384'THE
AC3384'LEVEL OF THE NORTHBOUND LANES OF STATE ROAD NO. 951 (COLLIER BLVD),
AC3384'8.05 M
AC3384'(26.4 FT) SOUTHEAST OF THE CENTERLINE OF THE NORTHBOUND LANES OF STATE
AC3384'ROAD
AC3384'951 (COLLIER BLVD.), 11.80 M (38.7 FT) SOUTHWEST OF THE CENTERLINE OF
AC3384'BALD
AC3384'EAGLE DRIVE, AND 1.25 M (4.1 FT) NORTH OF THE NORTH CORNER OF A  0.61
AC3384'M (2.0
AC3384'FT) SQUARE CONCRETE POWER POLE WITH PEDESTRIAN CROSSWALK SIGNALS.
AC3384'
AC3384'
AC3384'
AC3384'
AC3384
AC3384                          STATION RECOVERY (2002)
AC3384
AC3384'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AC3384'RECOVERED AS DESCRIBED.
AC3384'

*** retrieval complete.
```