OPUS SOLUTION REPORT

TEXAS BRINE COMPANY, LLC

BAYOU CORNE, LOUISIANA

May 2013

FENSTERMAKER, LLC JOB NO. 2139115.00C

As part of the Bayou Corne Subsidence Survey, Trimble GPS Receivers were placed on three existing NGS style monuments titled GPS 1, GPS 3 and GPS 4. The Trimble GPS Receivers logged satellite data for at least 4 hours. The raw data from these static logging sessions were sent to National Geodetic Survey web site "OPUS" for processing.

Monument GPS 1

NGS OPUS Solution Report

File: TR3658192152526 Page: 3 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°00'46.46568"	Northing=550,261.18	Northing=489,556.18
Long.= 91°06'01.24781"	Easting=3,354,571.47	Easting=2,073,771.96
Ellipsoidal Hgt. = -81.883 ft.		
Orthometric Hgt. = 4.882 ft. (Geoid 12A)		

File: TR3658531060945 Page: 4 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°00'46.46604"	Northing=550,261.22	Northing=489,556.22
Long.= 91°06'01.24770"	Easting=3,354,571.48	Easting=2,073,771.97
Ellipsoidal Hgt. = -81.883 ft.		
Orthometric Hgt. = 4.882ft. (Geoid 12A)		

Monument GPS 3

File: TR3661867033965 Page 5 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°01’00.90841”	Northing=551,698.47	Northing=490,993.47
Long.= 91°08’12.84632”	Easting=3,342,999.62	Easting=2,062,200.19
Ellipsoidal Hgt. = -84.613 ft.		
Orthometric Hgt. = 2.231 ft. (Geoid 12A)		

File: TR3662299224231 Page 6 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°01’00.90836”	Northing=551,698.46	Northing=490,993.47
Long.= 91°08’12.84626”	Easting=3,342,999.62	Easting=2,062,200.20
Ellipsoidal Hgt. = -84.649 ft.		
Orthometric Hgt. = 2.195 ft. (Geoid 12A)		

Monument GPS 4

File: TR3666687221064 Page 7 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°00’23.53168”	Northing=547,921.55	Northing=487,216.61
Long.= 91°08’21.07803”	Easting=3,342,282.36	Easting=2,061,482.91
Ellipsoidal Hgt. = -85.213 ft.		
Orthometric Hgt. = 1.532 ft. (Geoid 12A)		

File: TR3669151464246 Page 8 of 8

NAD 83(2011)(EPOCH:2010.0)	NAD 83(2011) LA SOUTH 1702	NAD 27 LA SOUTH 1702
Lat.= 30°00’23.53104”	Northing=547,921.48	Northing=487,216.54
Long.= 91°08’21.07882”	Easting=3,342,282.29	Easting=2,061,482.84
Ellipsoidal Hgt. = -85.292 ft.		
Orthometric Hgt. = 1.453 ft. (Geoid 12A)		

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:26 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3658192152526
Attachments: inpu141m.13o.xml

FILE: INPU TR3658192152526

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

```
      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu141m.13o                             TIME: 19:25:42 UTC


  SOFTWARE: page5  1209.04 master2.pl 0821123      START: 2013/05/21  12:37:00
 EPHEMERIS: igr17412.eph [rapid]                    STOP: 2013/05/21  20:49:00
  NAV FILE: brdc1410.13n                       OBS USED: 19025 / 21241: 90%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:   116 /   131: 89%
ARP HEIGHT: 2                                OVERALL RMS: 0.018(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3855)

         X:      -106147.670(m)   0.003(m)           -106148.428(m)   0.003(m)
         Y:     -5526500.197(m)   0.002(m)          -5526498.703(m)   0.002(m)
         Z:      3171600.270(m)   0.004(m)           3171600.091(m)   0.004(m)

       LAT:   30  0 46.46568      0.002(m)        30  0 46.48467      0.002(m)
     E LON:  268 53 58.75219      0.003(m)       268 53 58.72284      0.003(m)
     W LON:   91  6  1.24781      0.003(m)        91  6  1.27716      0.003(m)
    EL HGT:          -24.958(m)   0.003(m)               -26.329(m)   0.003(m)
 ORTHO HGT:            1.488(m)   0.013(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3321735.107           167719.944
Easting (X)  [meters]      683210.353          1022475.428
Convergence  [degrees]     0.95046238           0.11649632
Point Scale                1.00001414           0.99992577
Combined Factor            1.00001806           0.99992969

US NATIONAL GRID DESIGNATOR: 15RXP8321021735(NAD 83)
                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DG5315 HOUM HOUMA CORS ARP                 N293532.109 W0904324.988   59167.3
DF8160 SJB1 SJB GROUP COOP CORS ARP        N302345.831 W0910625.854   42480.2
DL8635 GVMS GALVEZ MIDDLE SCH CORS ARP     N301851.796 W0905413.029   38419.3

                  NEAREST NGS PUBLISHED CONTROL POINT
BJ5089      KESSLER RESET                  N300208.512 W0910421.723    3679.2
```

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:26 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3658531060945
Attachments: inpu140p.13o.xml

FILE: INPU TR3658531060945

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

```
      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu140p.13o                             TIME: 19:25:36 UTC

  SOFTWARE: page5  1209.04 master72.pl 082112      START: 2013/05/20  15:23:00
 EPHEMERIS: igr17411.eph [rapid]                    STOP: 2013/05/20  21:11:00
  NAV FILE: brdc1400.13n                        OBS USED: 13392 / 15192:88%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:   104 /   115:90%
ARP HEIGHT: 2                                 OVERALL RMS: 0.018(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3829)

         X:      -106147.667(m)   0.005(m)           -106148.425(m)   0.005(m)
         Y:     -5526500.192(m)   0.006(m)          -5526498.698(m)   0.006(m)
         Z:      3171600.280(m)   0.011(m)           3171600.101(m)   0.011(m)

       LAT:   30  0 46.46604      0.006(m)        30  0 46.48503      0.006(m)
     E LON:  268 53 58.75230      0.005(m)       268 53 58.72295      0.005(m)
     W LON:   91  6  1.24770      0.005(m)        91  6  1.27705      0.005(m)
    EL HGT:          -24.958(m)   0.011(m)               -26.328(m)   0.011(m)
 ORTHO HGT:            1.488(m)   0.021(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3321735.118           167719.955
Easting (X)  [meters]      683210.356          1022475.431
Convergence  [degrees]     0.95046240           0.11649633
Point Scale                1.00001414           0.99992577
Combined Factor            1.00001806           0.99992969

US NATIONAL GRID DESIGNATOR: 15RXP8321021735(NAD 83)

                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DL8631 AWES AWES 147 BC ALWES CORS ARP     N300600.962 W0905858.634   14897.4
DL9074 FSHS FRANKLIN HIGH SCH CORS ARP     N294819.103 W0913008.051   45121.4
DF8160 SJB1 SJB GROUP COOP CORS ARP        N302345.831 W0910625.854   42480.1

                  NEAREST NGS PUBLISHED CONTROL POINT
BJ5089      KESSLER RESET                  N300208.512 W0910421.723    3679.2
```

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:34 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3661867033965
Attachments: inpu142p.13o.xml

FILE: INPU TR3661867033965

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

```
      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu142p.13o                             TIME: 19:34:02 UTC

  SOFTWARE: page5  1209.04 master63.pl 082112      START: 2013/05/22  15:31:00
 EPHEMERIS: igr17413.eph [rapid]                    STOP: 2013/05/22  20:57:00
  NAV FILE: brdc1420.13n                        OBS USED: 12956 / 14335:90%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:    81 /    97:84%
ARP HEIGHT: 2                                 OVERALL RMS: 0.024(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3884)

         X:      -109669.169(m)   0.004(m)           -109669.927(m)   0.004(m)
         Y:     -5526208.210(m)   0.017(m)          -5526206.716(m)   0.017(m)
         Z:      3171984.939(m)   0.019(m)           3171984.760(m)   0.019(m)

       LAT:   30  1  0.90841      0.008(m)        30  1  0.92740      0.008(m)
     E LON:  268 51 47.15368      0.004(m)       268 51 47.12429      0.004(m)
     W LON:   91  8 12.84632      0.004(m)        91  8 12.87571      0.004(m)
    EL HGT:          -25.790(m)   0.024(m)               -27.160(m)   0.024(m)
 ORTHO HGT:            0.680(m)   0.043(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3322121.838           168158.030
Easting (X)  [meters]      679676.959          1018948.321
Convergence  [degrees]     0.93227563           0.09821828
Point Scale                0.99999832           0.99992578
Combined Factor            1.00000237           0.99992983

US NATIONAL GRID DESIGNATOR: 15RXP7967622121(NAD 83)

                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DL9074 FSHS FRANKLIN HIGH SCH CORS ARP     N294819.103 W0913008.051   42367.3
DL8631 AWES AWES 147 BC ALWES CORS ARP     N300600.962 W0905858.634   17485.5
DL8635 GVMS GALVEZ MIDDLE SCH CORS ARP     N301851.796 W0905413.029   39904.2

                 NEAREST NGS PUBLISHED CONTROL POINT
BJ5095      MABILE                         N300005.000 W0911134.865    5679.0
```

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:35 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3662299224231
Attachments: inpu143m.13o.xml
FILE: INPU TR3662299224231

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

```
      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu143m.13o                             TIME: 19:34:45 UTC

  SOFTWARE: page5  1209.04 master13.pl 082112      START: 2013/05/23  12:01:00
 EPHEMERIS: igr17414.eph [rapid]                    STOP: 2013/05/23  21:14:30
  NAV FILE: brdc1430.13n                        OBS USED: 22871 / 24316:94%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:   145 /   167:87%
ARP HEIGHT: 2                                 OVERALL RMS: 0.019(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3910)

         X:      -109669.167(m)   0.003(m)           -109669.925(m)   0.003(m)
         Y:     -5526208.201(m)   0.005(m)          -5526206.707(m)   0.005(m)
         Z:      3171984.932(m)   0.006(m)           3171984.753(m)   0.006(m)

       LAT:   30  1  0.90836      0.006(m)        30  1  0.92735      0.006(m)
     E LON:  268 51 47.15374      0.003(m)       268 51 47.12436      0.003(m)
     W LON:   91  8 12.84626      0.003(m)        91  8 12.87564      0.003(m)
    EL HGT:          -25.801(m)   0.002(m)               -27.171(m)   0.002(m)
 ORTHO HGT:            0.669(m)   0.012(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3322121.836           168158.028
Easting (X)  [meters]      679676.960          1018948.322
Convergence  [degrees]     0.93227564           0.09821829
Point Scale                0.99999832           0.99992578
Combined Factor            1.00000237           0.99992983

US NATIONAL GRID DESIGNATOR: 15RXP7967622121(NAD 83)

                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DL8635 GVMS GALVEZ MIDDLE SCH CORS ARP     N301851.796 W0905413.029   39904.2
DL8631 AWES AWES 147 BC ALWES CORS ARP     N300600.962 W0905858.634   17485.5
DG5315 HOUM HOUMA CORS ARP                 N293532.109 W0904324.988   61743.8

                  NEAREST NGS PUBLISHED CONTROL POINT
BJ5095      MABILE                         N300005.000 W0911134.865    5679.0
```

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:40 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3666687221064
Attachments: inpu144m.13o.xml

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 FILE: INPU TR3666687221064
                              NGS OPUS SOLUTION REPORT
                              ========================
All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu144m.13o                             TIME: 19:39:32 UTC


  SOFTWARE: page5  1209.04 master92.pl 082112      START: 2013/05/24  12:47:00
 EPHEMERIS: igr17415.eph [rapid]                    STOP: 2013/05/24  15:05:00
  NAV FILE: brdc1440.13n                        OBS USED:  4507 /  5508:82%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:    31 /    34:91%
ARP HEIGHT: 2                                 OVERALL RMS: 0.016(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3934)

         X:      -109901.153(m)   0.006(m)           -109901.911(m)   0.006(m)
         Y:     -5526779.218(m)   0.014(m)          -5526777.724(m)   0.014(m)
         Z:      3170988.244(m)   0.001(m)           3170988.065(m)   0.001(m)

       LAT:   30  0 23.53168      0.006(m)        30  0 23.55066      0.006(m)
     E LON:  268 51 38.92197      0.006(m)       268 51 38.89258      0.006(m)
     W LON:   91  8 21.07803      0.006(m)        91  8 21.10742      0.006(m)
    EL HGT:          -25.973(m)   0.012(m)               -27.343(m)   0.012(m)
 ORTHO HGT:            0.467(m)   0.023(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3320967.487           167006.821
Easting (X)  [meters]      679475.102          1018729.701
Convergence  [degrees]     0.93083883           0.09707496
Point Scale                0.99999742           0.99992575
Combined Factor            1.00000150           0.99992983

US NATIONAL GRID DESIGNATOR: 15RXP7947520967(NAD 83)

                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DL8635 GVMS GALVEZ MIDDLE SCH CORS ARP     N301851.796 W0905413.029   40982.7
DF8160 SJB1 SJB GROUP COOP CORS ARP        N302345.831 W0910625.854   43291.1
DL9074 FSHS FRANKLIN HIGH SCH CORS ARP     N294819.103 W0913008.051   41556.2

                  NEAREST NGS PUBLISHED CONTROL POINT
BJ5095      MABILE                         N300005.000 W0911134.865    5220.8

This position and the above vector components were computed without any
knowledge by the National Geodetic Survey regarding the equipment or field
operating procedures used.
```

From: opus [opus@ngs.noaa.gov]
Sent: Tuesday, May 28, 2013 2:43 PM
To: Adam Judice
Subject: OPUS solution : INPU TR3669151464246
Attachments: inpu142p.13o.xml

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 FILE: INPU TR3669151464246
                              NGS OPUS SOLUTION REPORT
                              ========================

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

      USER: adam@fenstermaker.com                    DATE: May 28, 2013
RINEX FILE: inpu142p.13o                             TIME: 19:42:59 UTC

  SOFTWARE: page5  1209.04 master50.pl 082112      START: 2013/05/22  15:35:00
 EPHEMERIS: igr17413.eph [rapid]                    STOP: 2013/05/22  21:13:00
  NAV FILE: brdc1420.13n                        OBS USED: 11693 / 13773:85%
  ANT NAME: TRM55971.00     NONE             # FIXED AMB:   111 /   132:84%
ARP HEIGHT: 2                                 OVERALL RMS: 0.022(m)

 REF FRAME: NAD_83(2011)(EPOCH:2010.0000)              IGS08 (EPOCH:2013.3884)

         X:      -109901.174(m)   0.004(m)           -109901.932(m)   0.004(m)
         Y:     -5526779.207(m)   0.012(m)          -5526777.713(m)   0.012(m)
         Z:      3170988.215(m)   0.002(m)           3170988.036(m)   0.002(m)

       LAT:   30  0 23.53104      0.007(m)        30  0 23.55002      0.007(m)
     E LON:  268 51 38.92118      0.005(m)       268 51 38.89179      0.005(m)
     W LON:   91  8 21.07882      0.005(m)        91  8 21.10821      0.005(m)
    EL HGT:          -25.997(m)   0.010(m)               -27.367(m)   0.010(m)
 ORTHO HGT:            0.443(m)   0.021(m) [NAVD88 (Computed using GEOID12A)]

                        UTM COORDINATES    STATE PLANE COORDINATES
                         UTM (Zone 15)         SPC (1702 LA S)
Northing (Y) [meters]     3320967.466           167006.802
Easting (X)  [meters]      679475.081          1018729.679
Convergence  [degrees]     0.93083871           0.09707485
Point Scale                0.99999742           0.99992575
Combined Factor            1.00000150           0.99992983

US NATIONAL GRID DESIGNATOR: 15RXP7947520967(NAD 83)

                              BASE STATIONS USED
PID       DESIGNATION                        LATITUDE    LONGITUDE DISTANCE(m)
DL8635 GVMS GALVEZ MIDDLE SCH CORS ARP     N301851.796 W0905413.029   40982.7
DF8160 SJB1 SJB GROUP COOP CORS ARP        N302345.831 W0910625.854   43291.1
DL8631 AWES AWES 147 BC ALWES CORS ARP     N300600.962 W0905858.634   18301.8

                  NEAREST NGS PUBLISHED CONTROL POINT
BJ5095      MABILE                         N300005.000 W0911134.865    5220.8

This position and the above vector components were computed without any
knowledge by the National Geodetic Survey regarding the equipment or field
operating procedures used.
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