



9375 Chillicothe Road
Kirtland, OH 44094-8501

T (440) 256-6500

www.sme-usa.com

April 11, 2017

David Lastovka, P.E.
ODOT District 12 Transportation Engineer
Ohio Department of Transportation
5500 Transportation Boulevard
Garfield Heights, Ohio 44125-5396

E-mail to: Dave.Lastovka@dot.state.oh.us

Re: March 30, 31, and April 4, 2017 Monthly Readings
CUY-90-15.24 Slope Monitoring
PID 96504
SME Project No. 069032.00

Dear Mr. Lastovka:

Monthly instrument readings at the I-90 west slope taken on March 30, 31 and April 4, 2017 are presented in this report. Monthly readings currently include instruments at I/P-001-13, I/P-002-13, I/P-003-10, P-003-13, I/P-004-13, I-008-10, I/P-009-13, B-101, B-102, B-105A, B-05-02, B-05-04, B-05-A-11, P-1, P-9N. Changes reported for the individual instruments are for the previous four-week period unless noted otherwise.

Piezometer Readings

Pore pressure readings at P-001-13, P-002-13, P-003-10, P-003-13, and B-05-A-11 show variations in total head of less than 0.5 feet for the period.

P-004-13 – Pore pressure readings in the shallow piezometer at this location show a decrease of about 0.9 feet. Pore pressure readings in the deep piezometer show virtually no change.

P-009-13 – Pore pressure readings in both piezometers at this location show a decrease in total head of about 1.5 feet.

B-105A – The shallow piezometer pore pressure readings at this location show a decrease of about 1.3 feet this month. The deep piezometer shows fluctuations in pore pressure, but no net change.

B-05-02 – Beginning on March 23, 2017, pore pressure readings indicate a rapid decrease of about 6 feet in the shallow piezometer and about 3.6 feet in the deep piezometer. This is likely due to the final grading operations around this location.

B-05-A-03 – Pore pressure readings in the shallow piezometer at this location show an increase in total head of about 2 feet during the middle of March 2017. This was followed by a gradual decrease of 2 feet for the remainder of this reading period. The deep piezometer pore pressure readings indicate a similar pattern, but at a smaller magnitude increase of about 1 foot. These changes are likely due to the final grading operations in this area.

B-05-04 – Pore pressure readings at this location show decreases in total head of about 1.4 feet in the shallow piezometer and almost no change in the deep piezometer. This is also likely due to the final grading operations. We have temporarily removed the data loggers from this location to avoid damage or loss during final grading operations.

Inclinometer Readings

Inclinometer readings at I-001-13, I-002-13, I-003-10, I-004-13, I-008-10, I-009-13, B-101, B-102, B-05-02, B-05-A-03, B-05-04, B-05-A-11, P-1, and P-9N showed virtually no movement this period. In some cases, the plots indicated displacement at the top of the casing. This is due to disturbance of the area around the casing that occurred during construction. Protective covers have not yet been permanently concreted in place because of the ongoing construction near these instruments.

B-105A – Inclinometer readings at this location indicate slight rotational movement for the upper 50 feet of the slope tube in the positive A-axis and the negative B-axis direction. The zone plot shows a resultant displacement of about 0.8 inches.

B-05-02 – The inclinometer casing at this location will need to be adjusted now that the surrounding soil is close to final grade. The casing currently has about 6 feet of stick up and is loose at the surface. The top 8 feet on the plot are artificial readings that were added to allow us to plot the current readings with the older readings. This will be adjusted when the site is at final grade and we can cut the casing down. The various zone plots show no displacement.

B-05-A-03 – We have added 8 feet to the inclinometer casing at this location to allow for the grade being raised in this area. The attached plot shows the absolute position plot of the first reading since this extension was added. After we extended the casing, TGR informed us that the final grade may change again at this location. We will make the necessary adjustments to the casing when the grading is completed.

This concludes our report of monthly instrument readings.

Please call or email with any questions.

Very truly yours,

SME

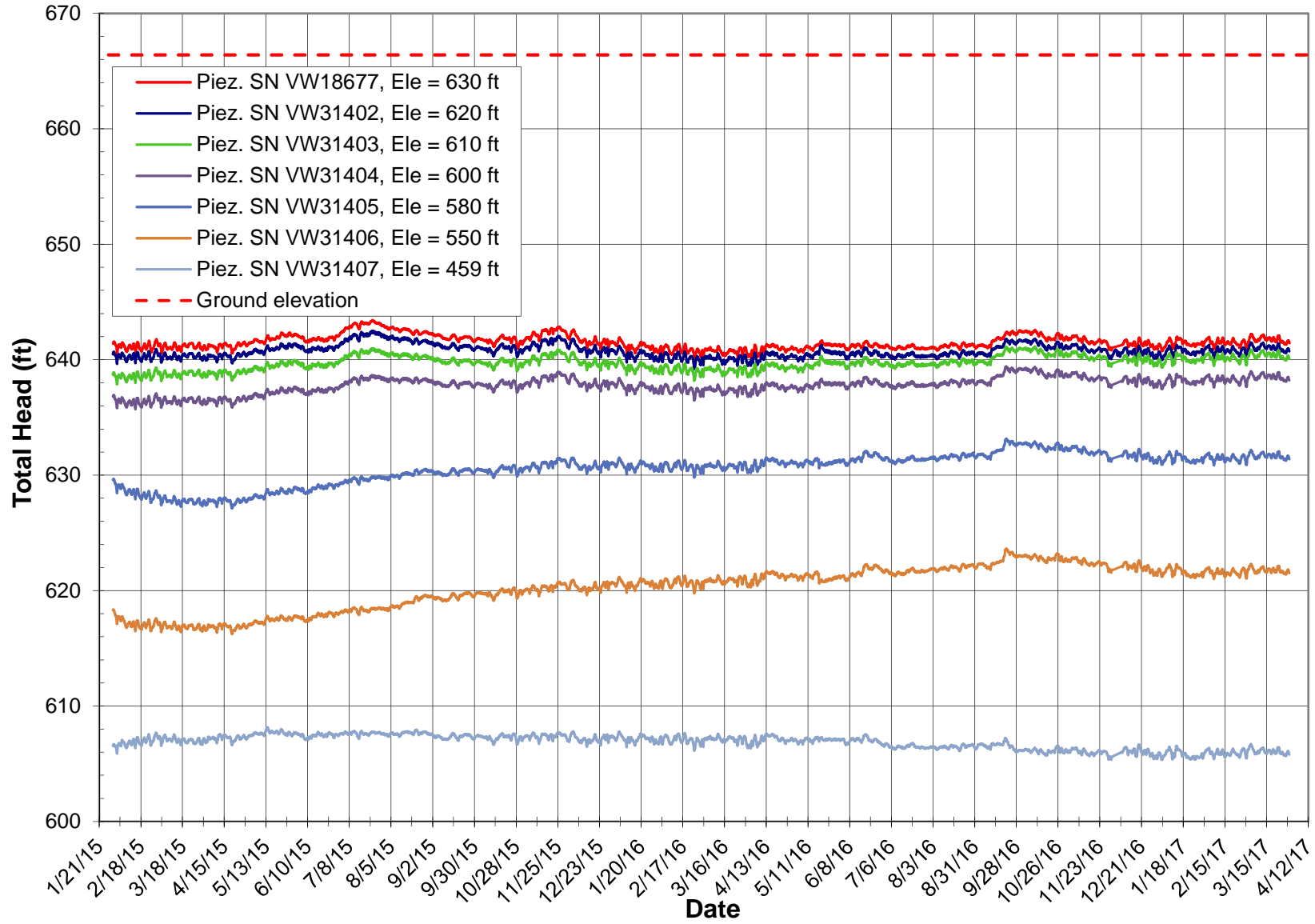
Brendan P. Lieske, P.E.
Senior Staff Engineer

Alan J. Esser, P.E., D.GE
Chief Consultant

Copies sent to distribution list.

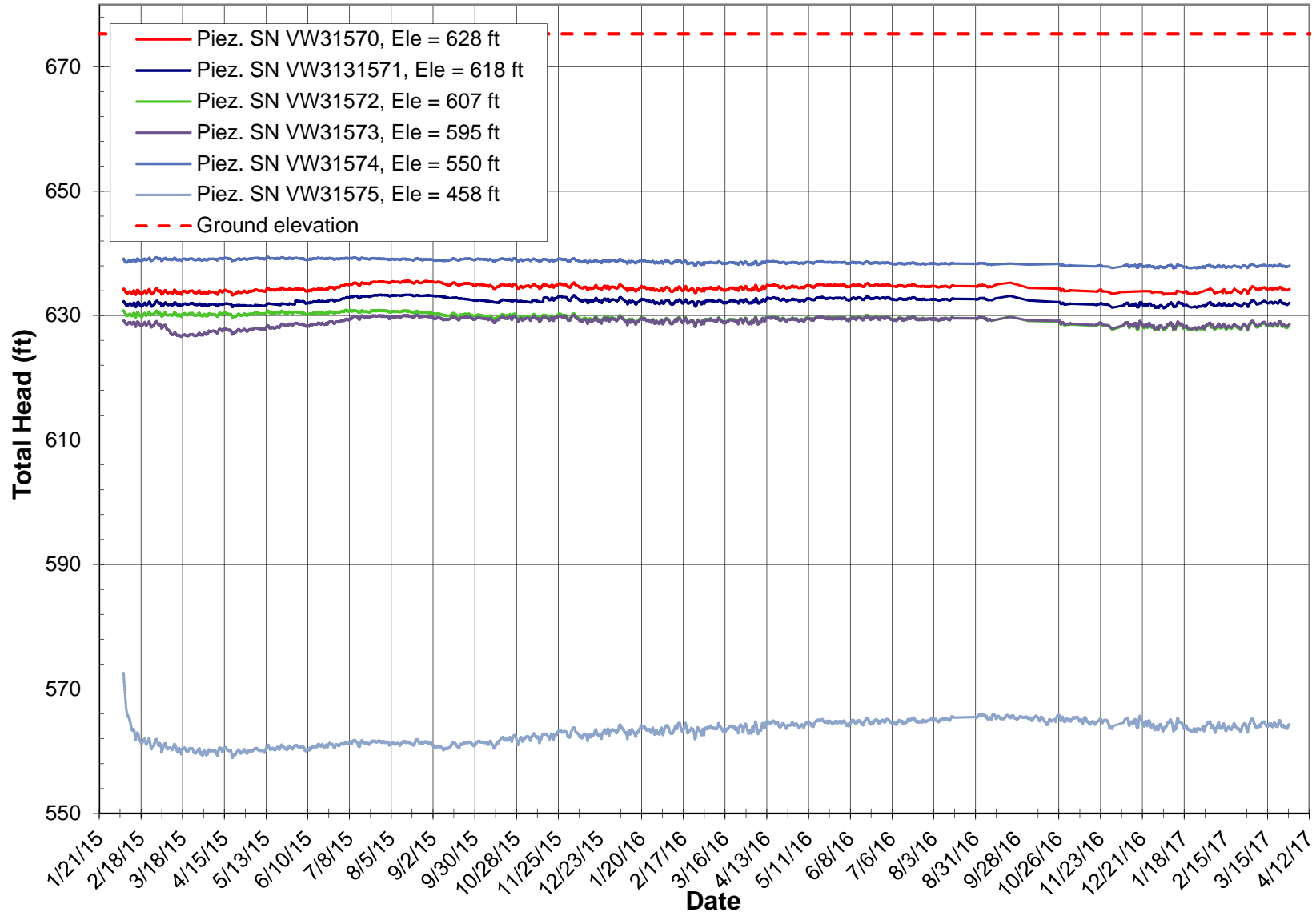
P-001-13 VW Piezometer Readings

Ground surface elevation = 666.4 ft



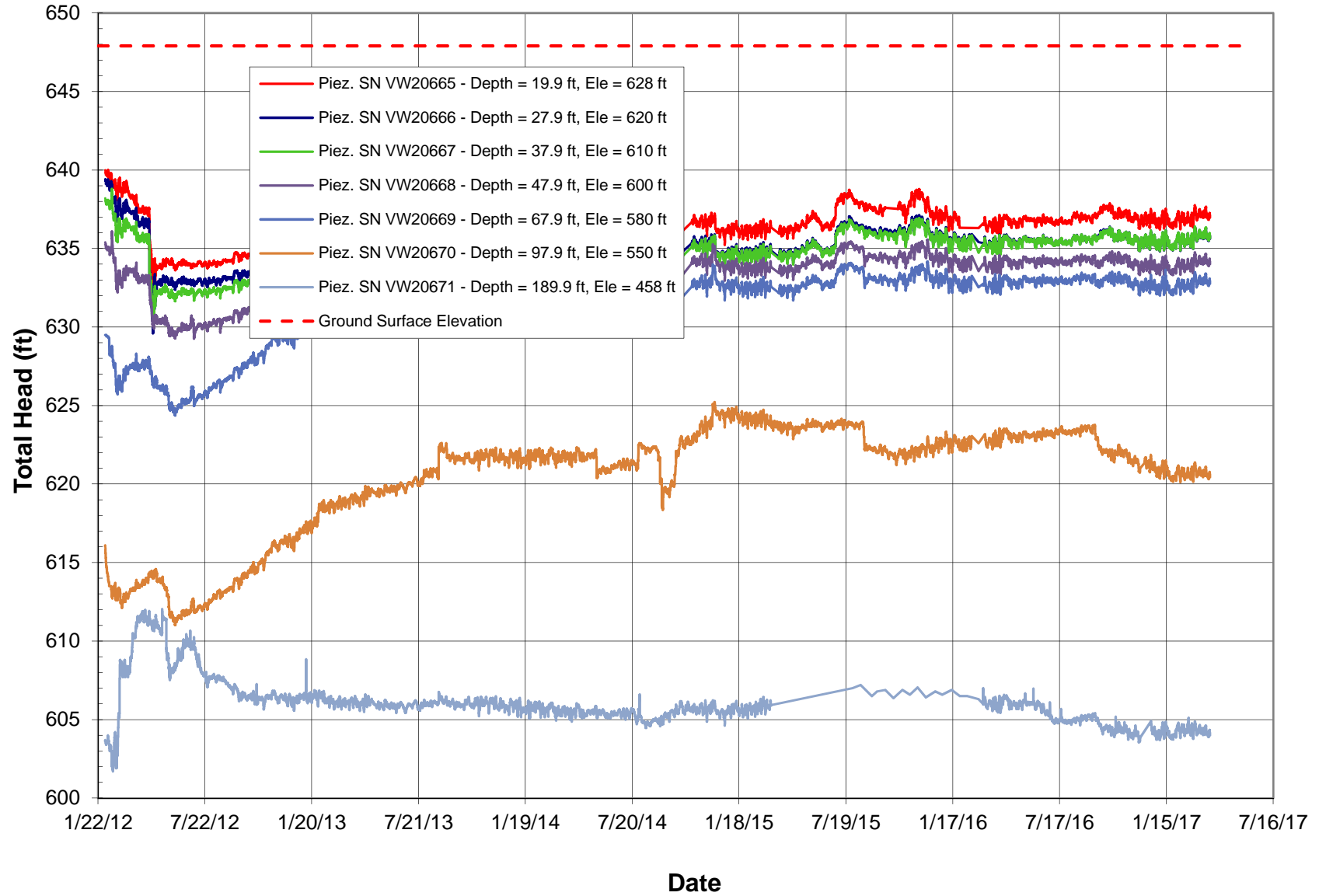
P-002-13 VW Piezometer Readings

Ground surface elevation = 675.29 ft



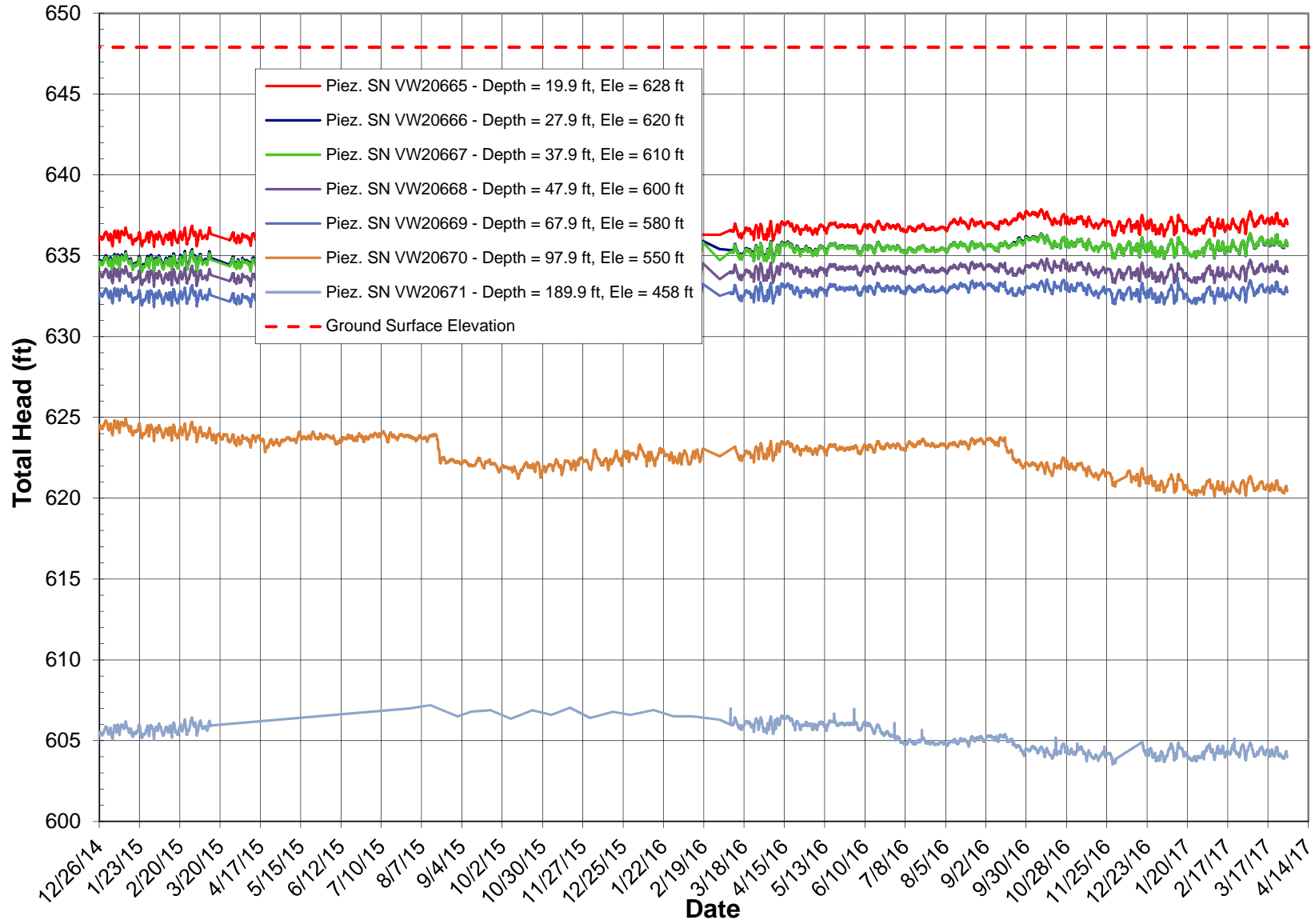
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



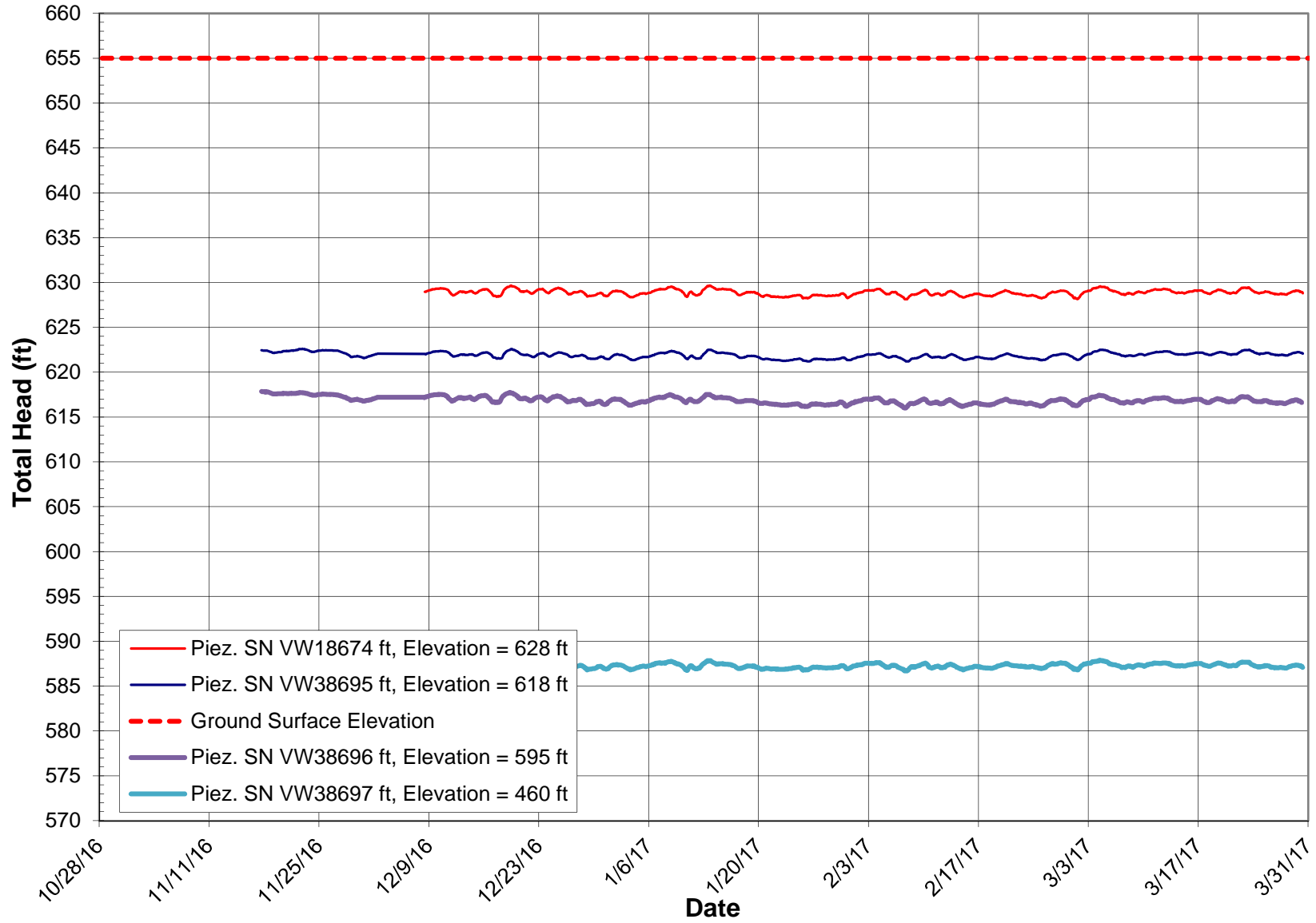
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



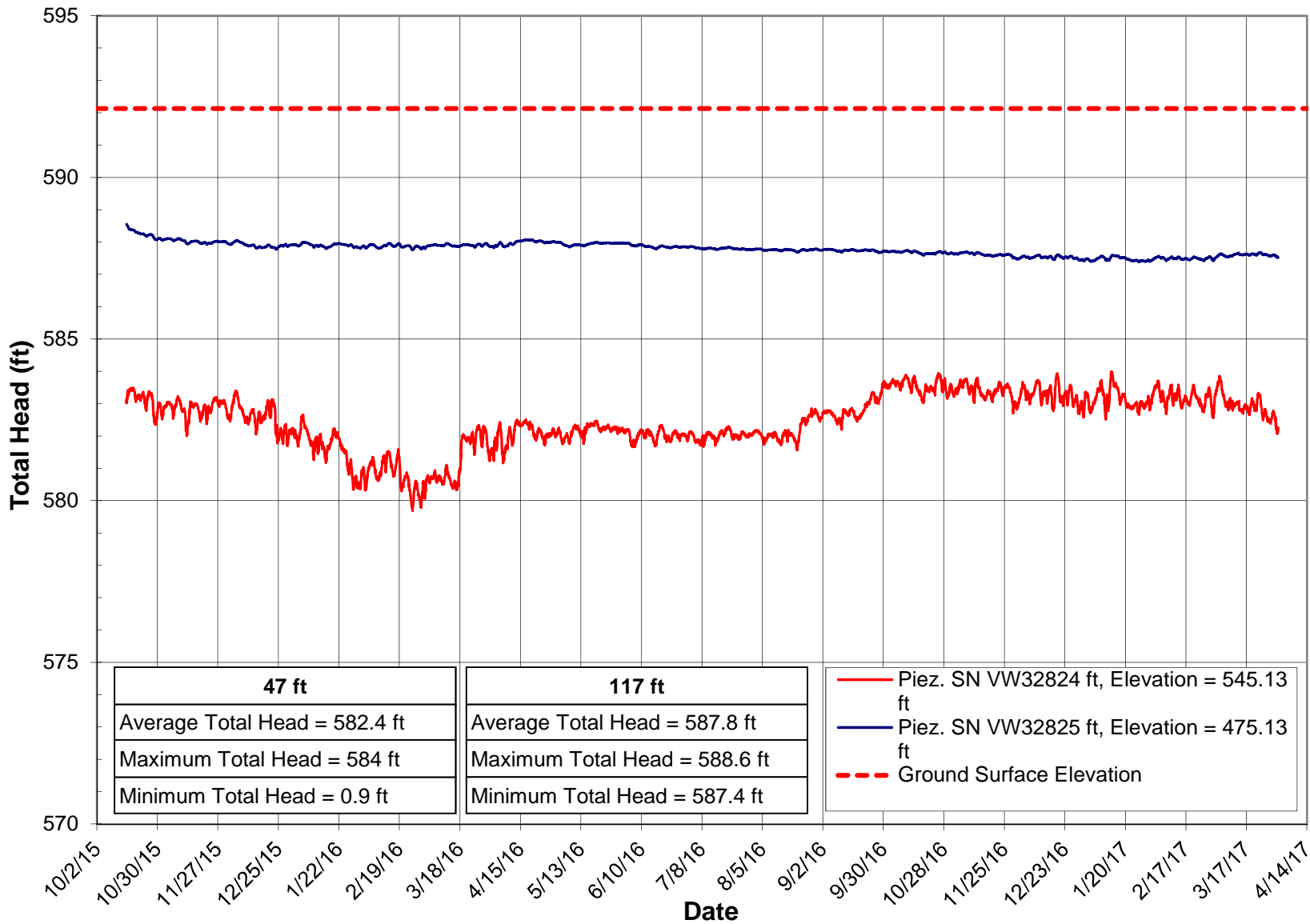
P-003-13 VW Piezometer Readings

Ground surface elevation = 655 ft



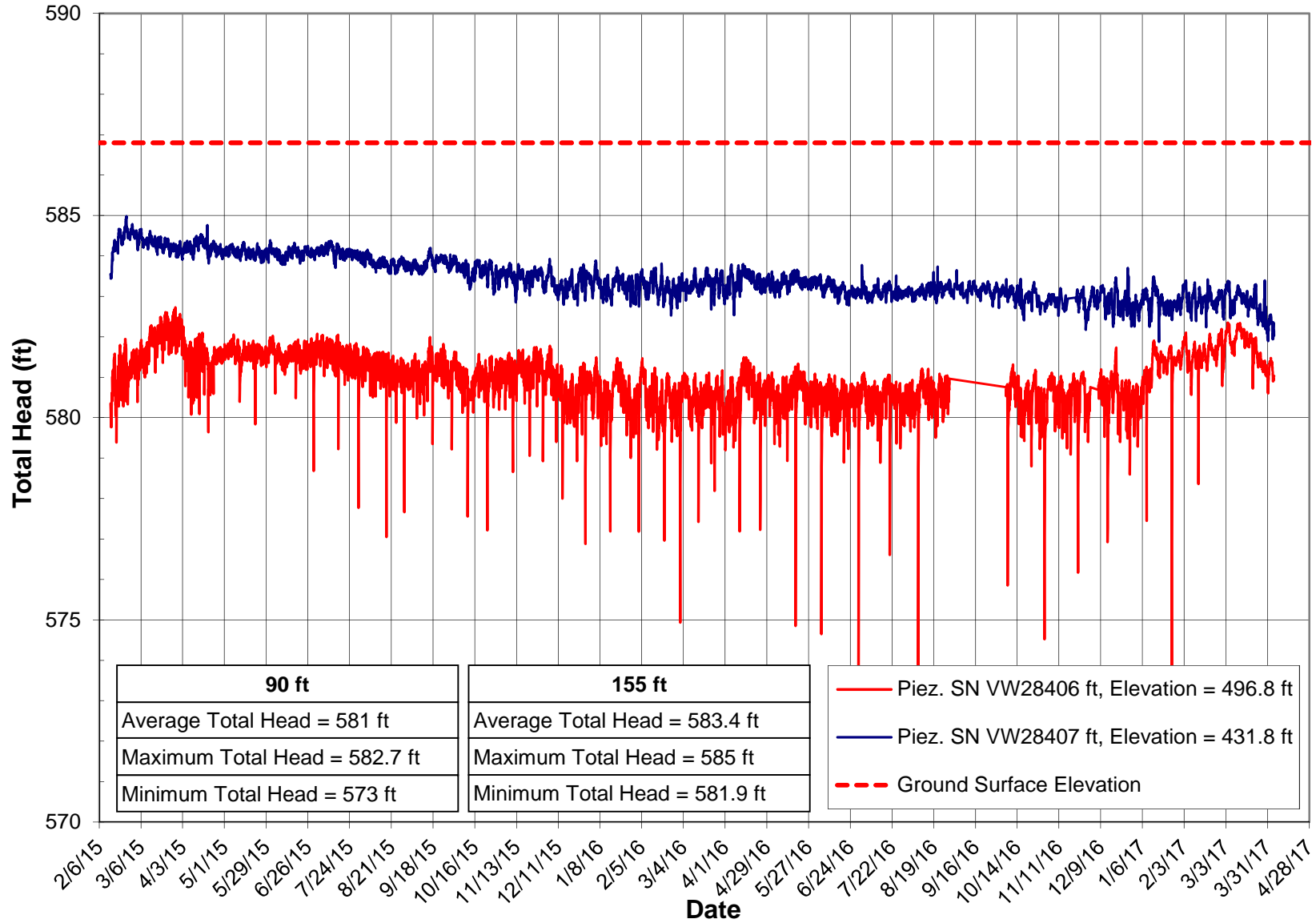
P-004-13 VW Piezometer Readings

Ground surface elevation = 592.13 ft



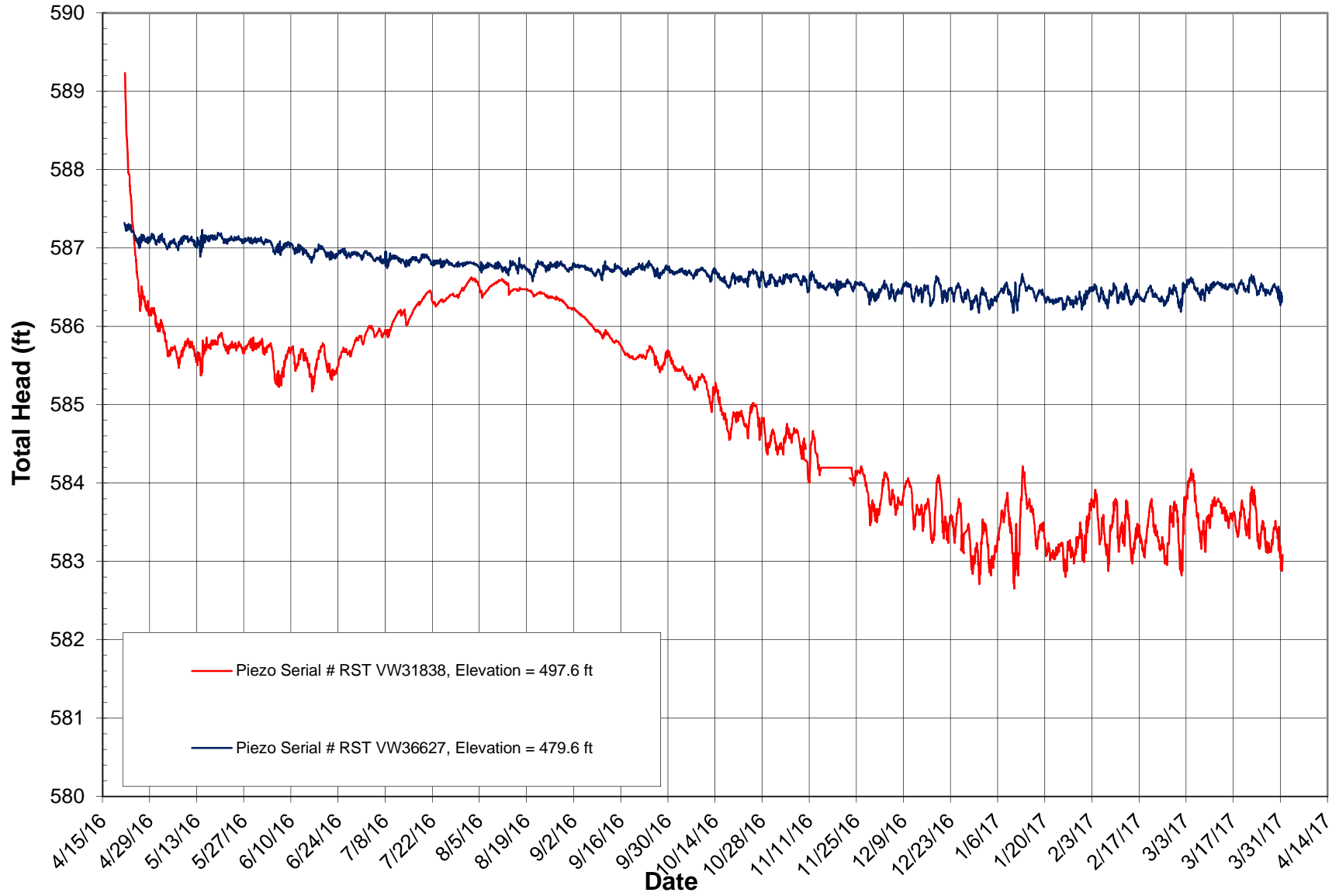
P-009-13 VW Piezometer Readings

Ground surface elevation = 586.6 ft



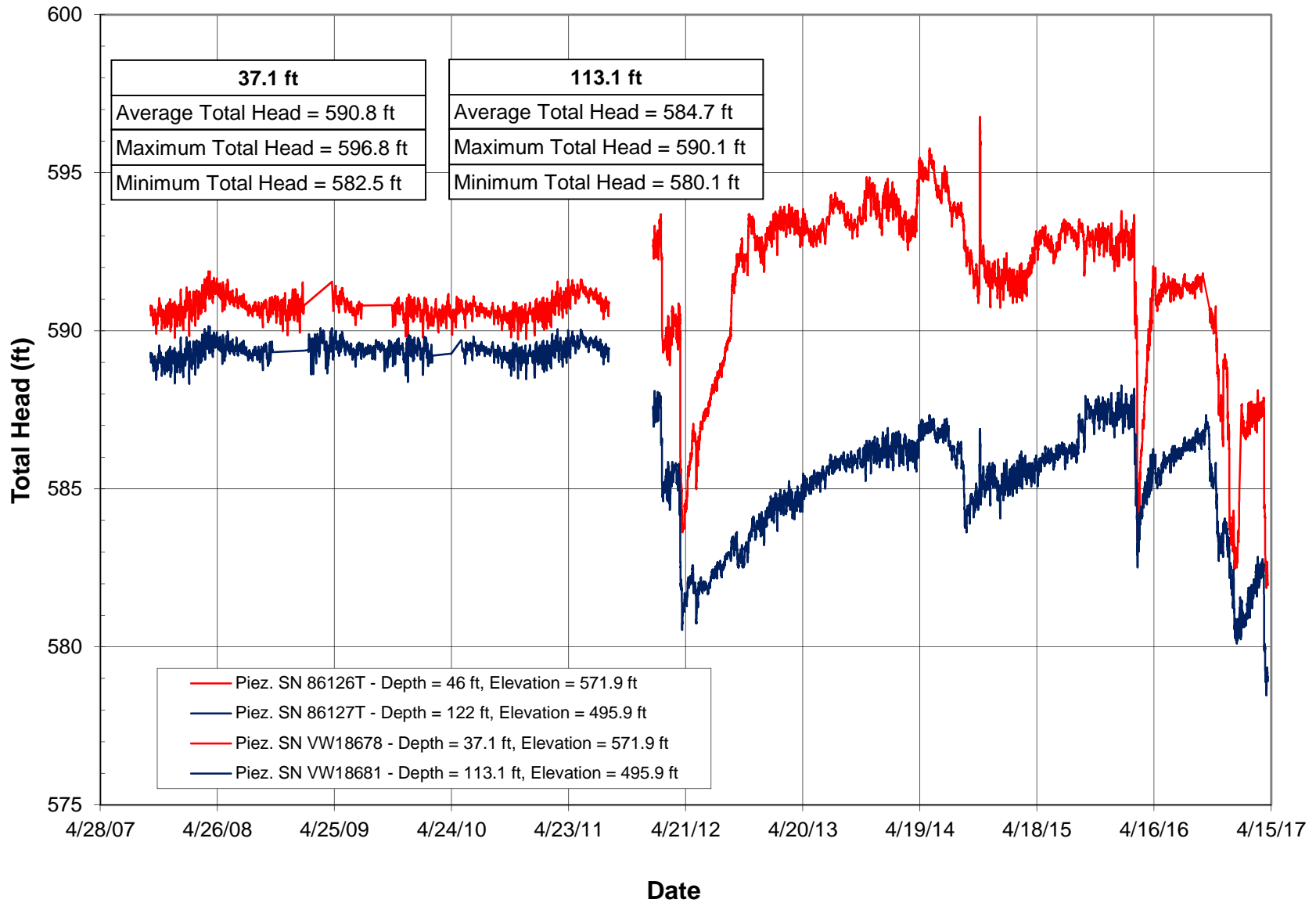
B-105A VW Piezometer Readings

Ground surface elevation = 585.6 ft



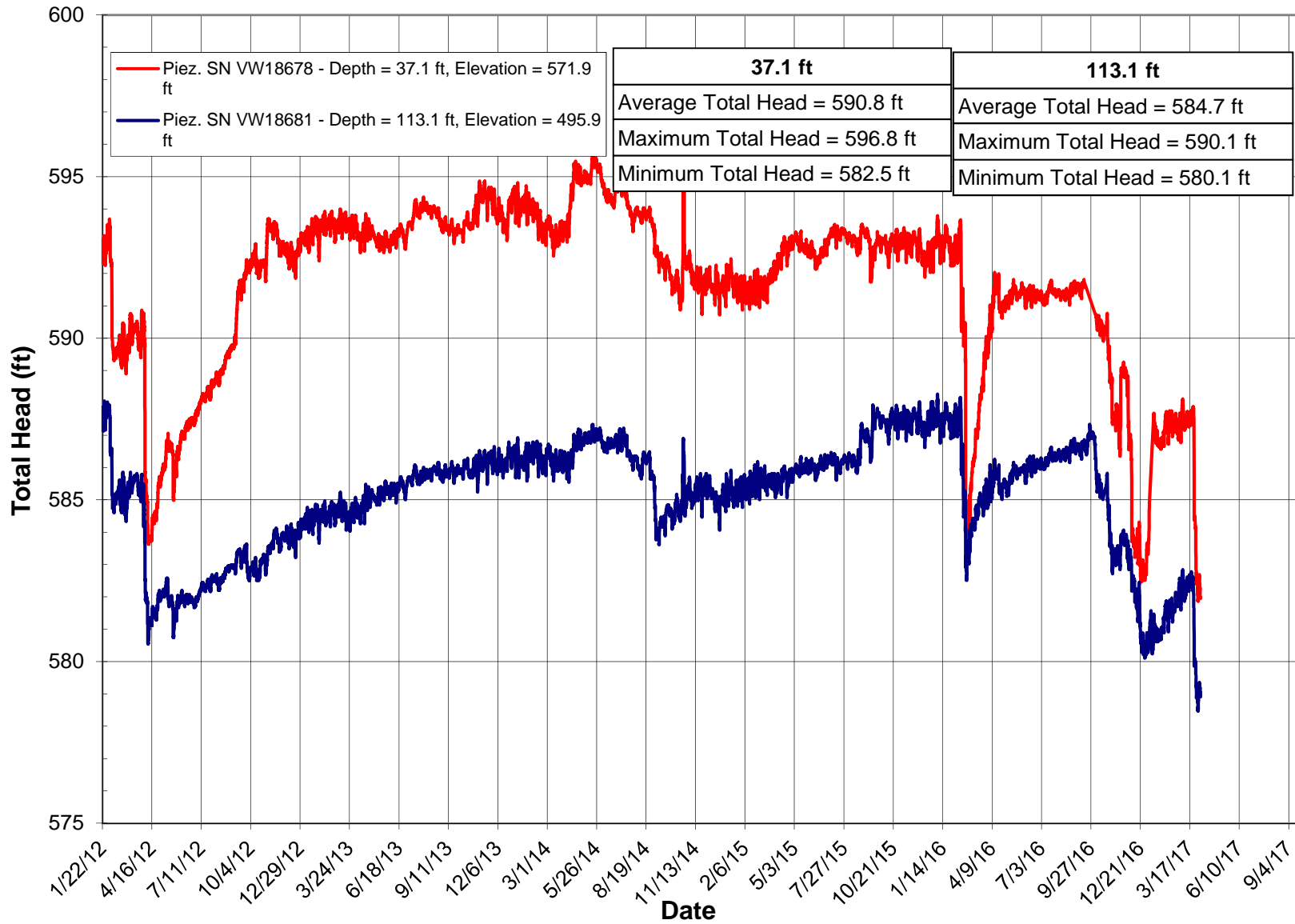
B-05-02 VW Piezometer Readings

Ground surface elevation = approx 609.0 ft



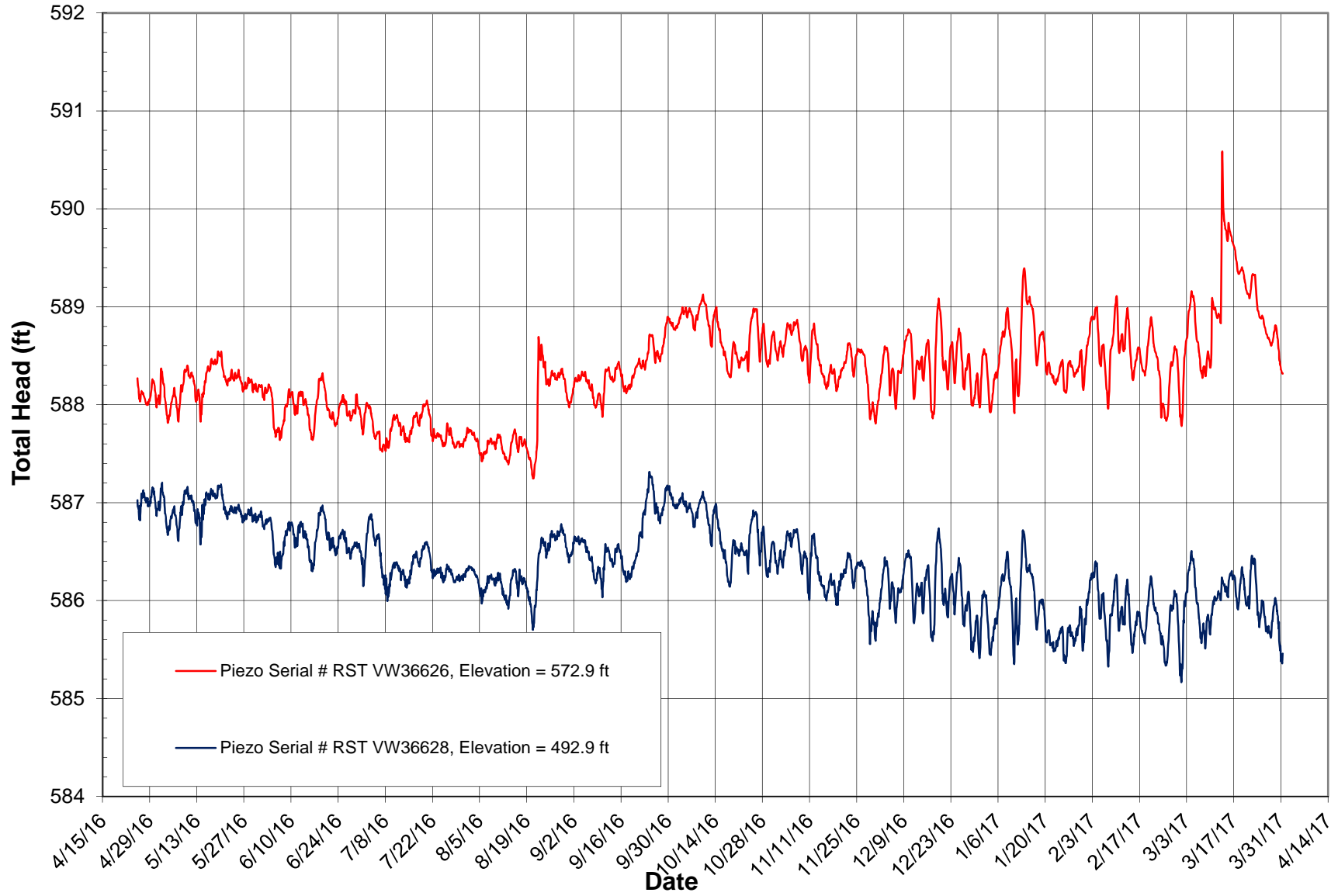
B-05-02 VW Piezometer Readings

Ground surface elevation = approx 609.0 ft



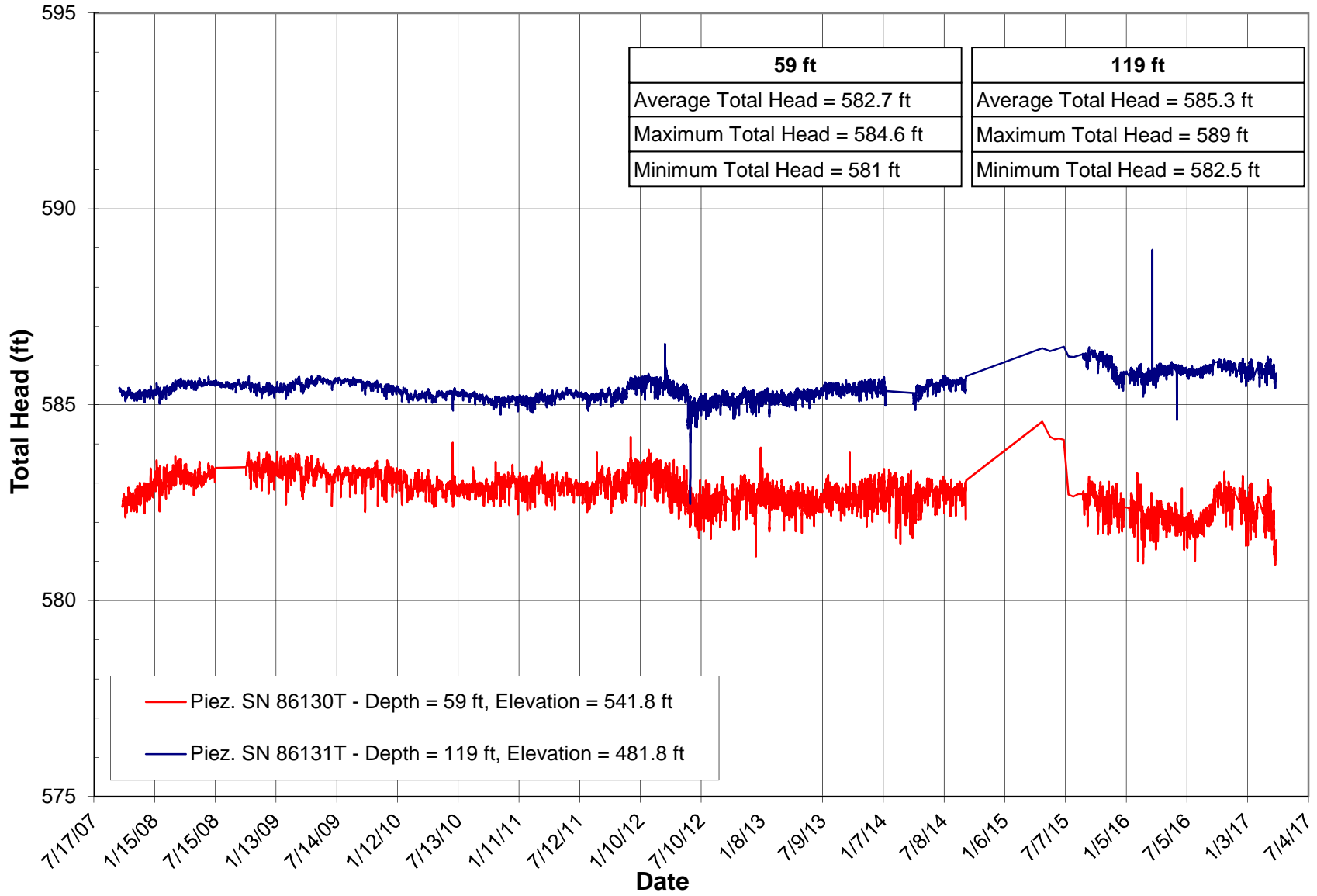
B-05-A-03 VW Piezometer Readings

Ground surface elevation = 599.9 ft



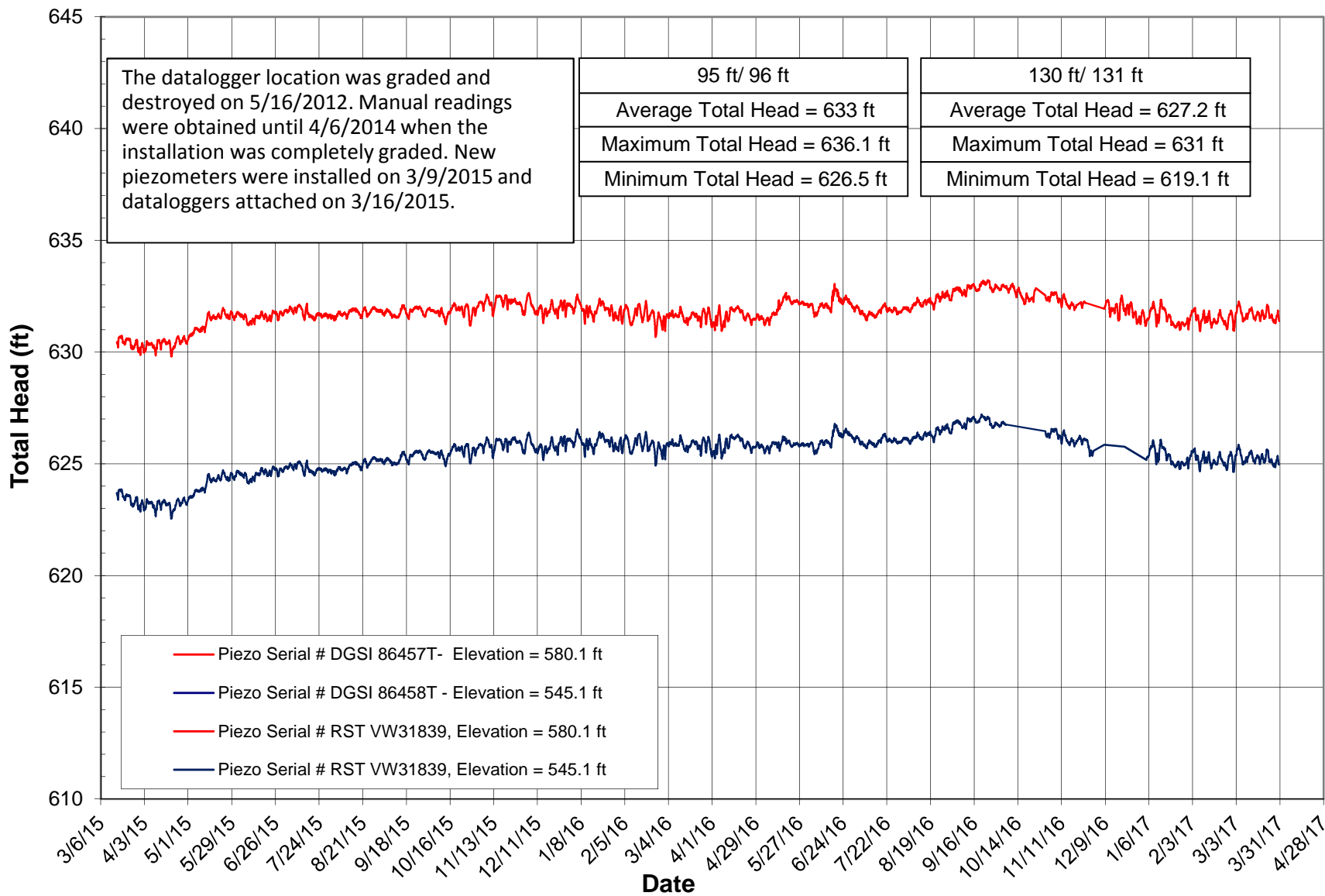
B-05-04 VW Piezometer Readings

Ground surface elevation = 600.8 ft



B-05-11/B-05-A-11 VW Piezometer Readings

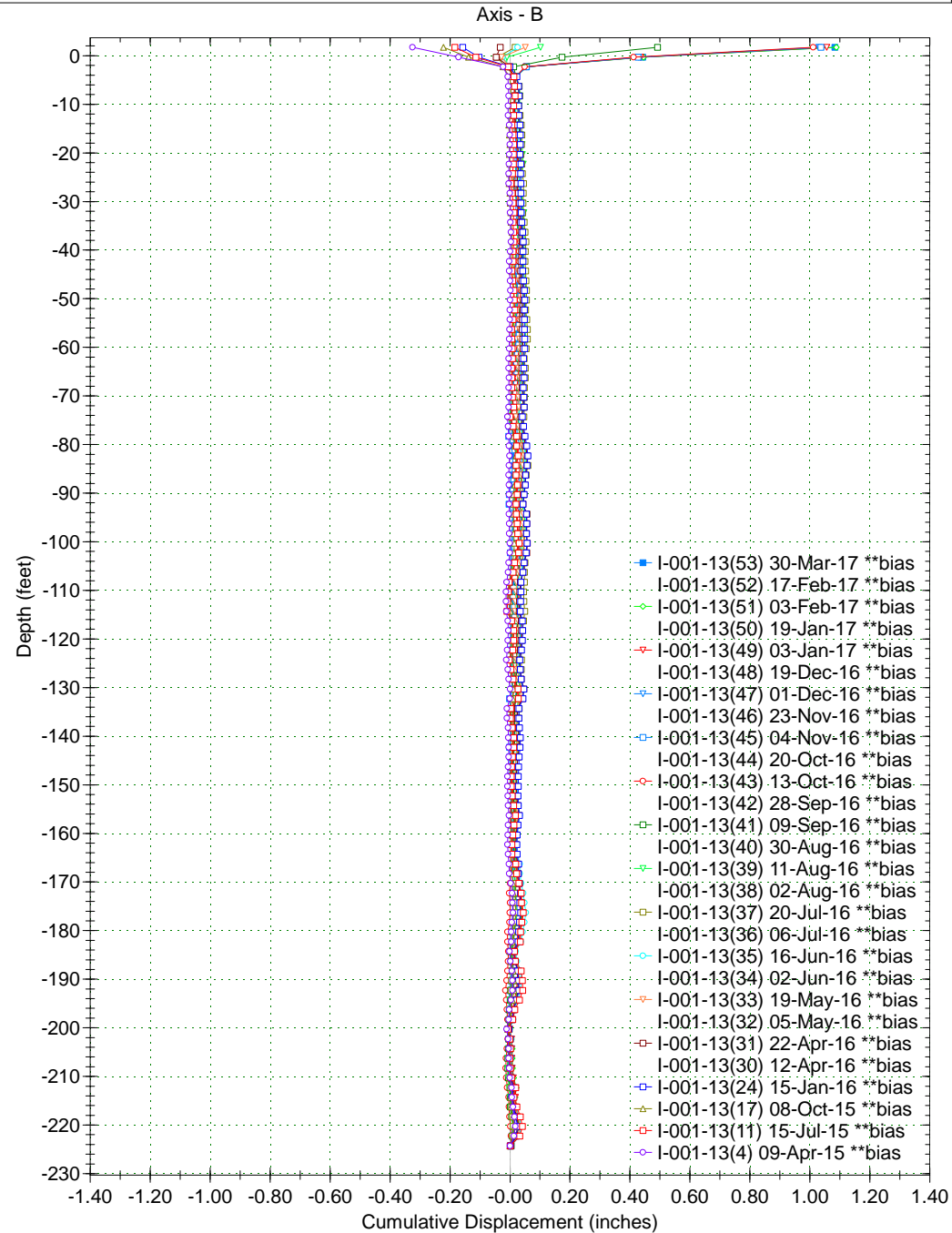
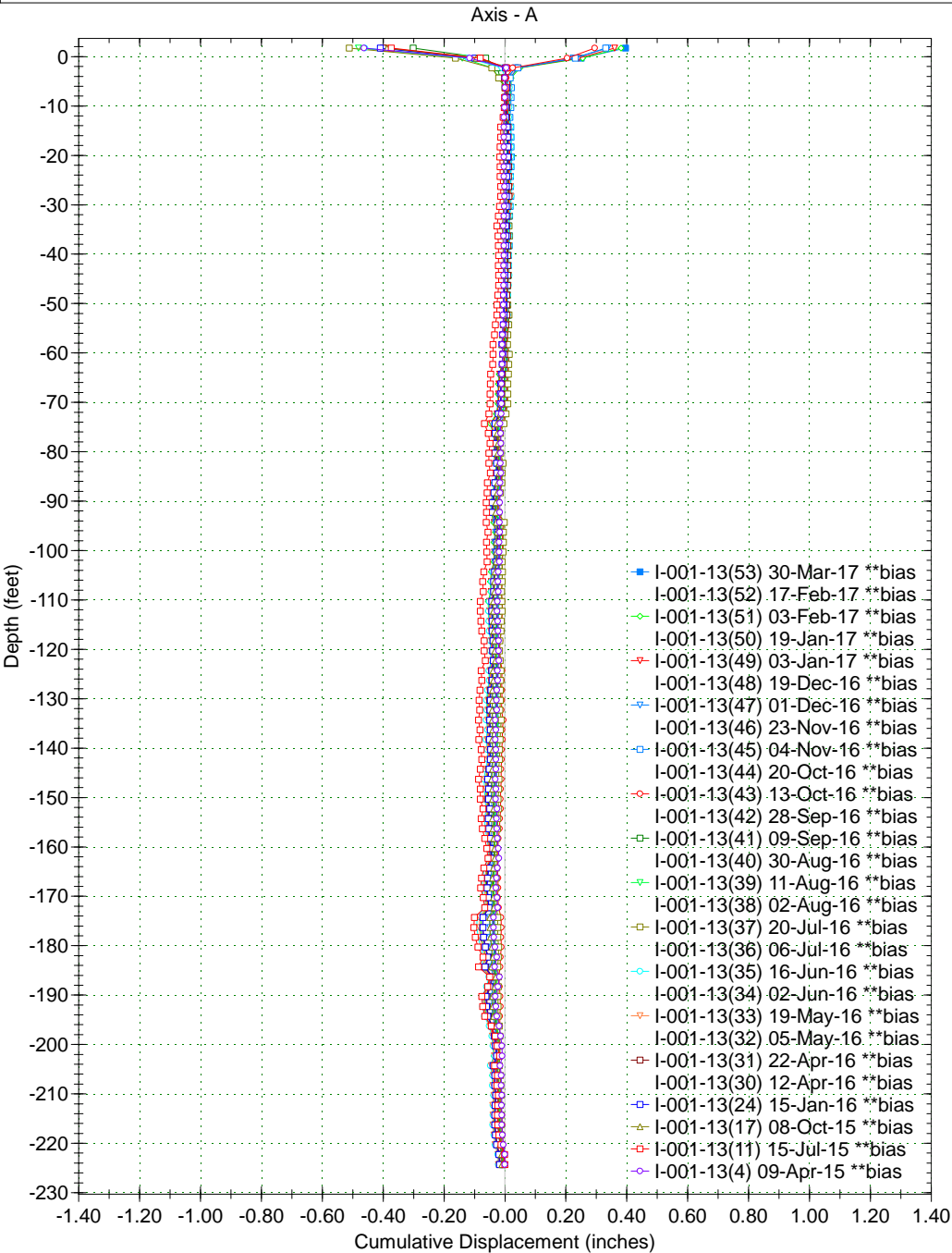
Ground surface elevation = 675.1 ft (B-05-11) / 676.1 ft (B-05-A-11)



Borehole : I-001-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



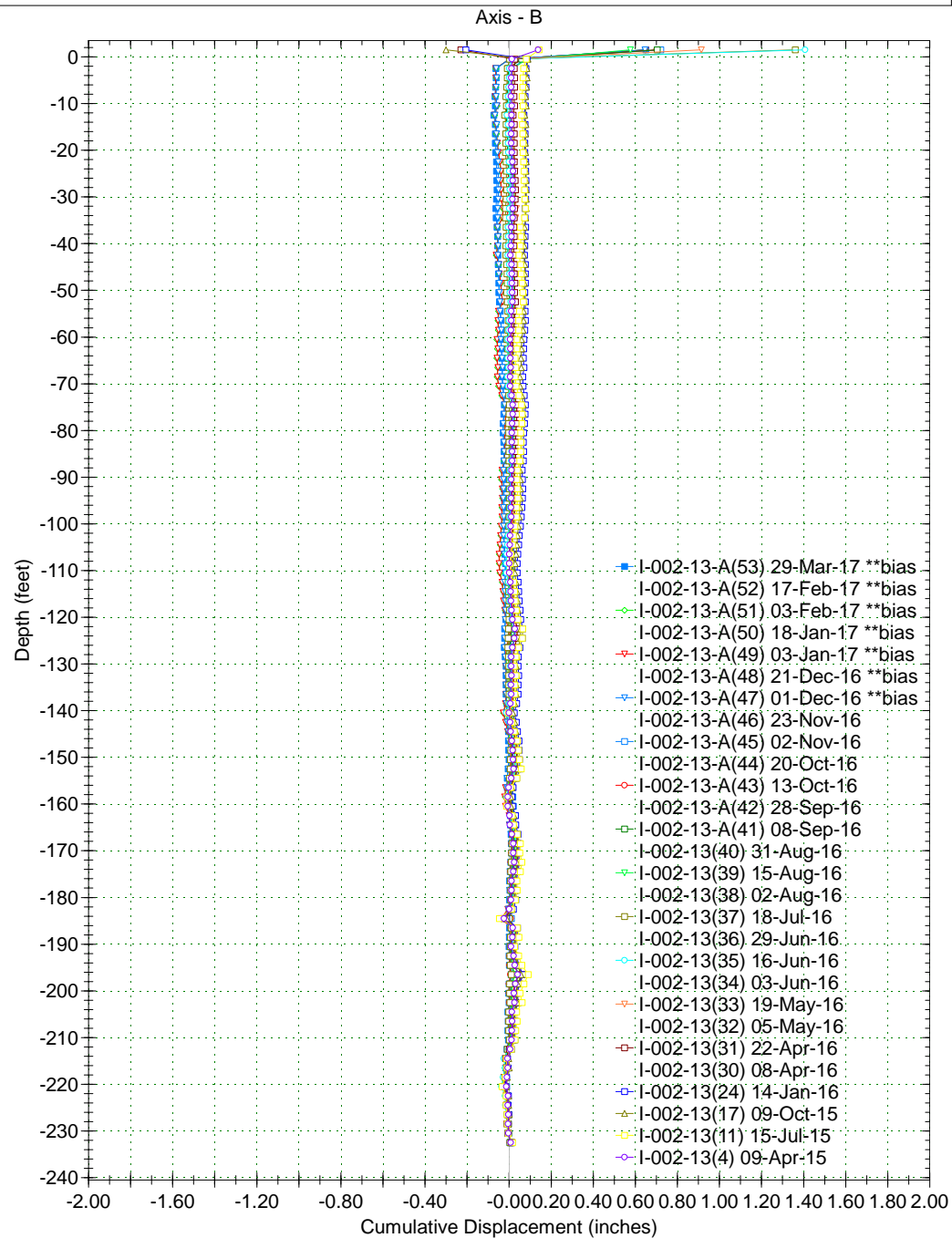
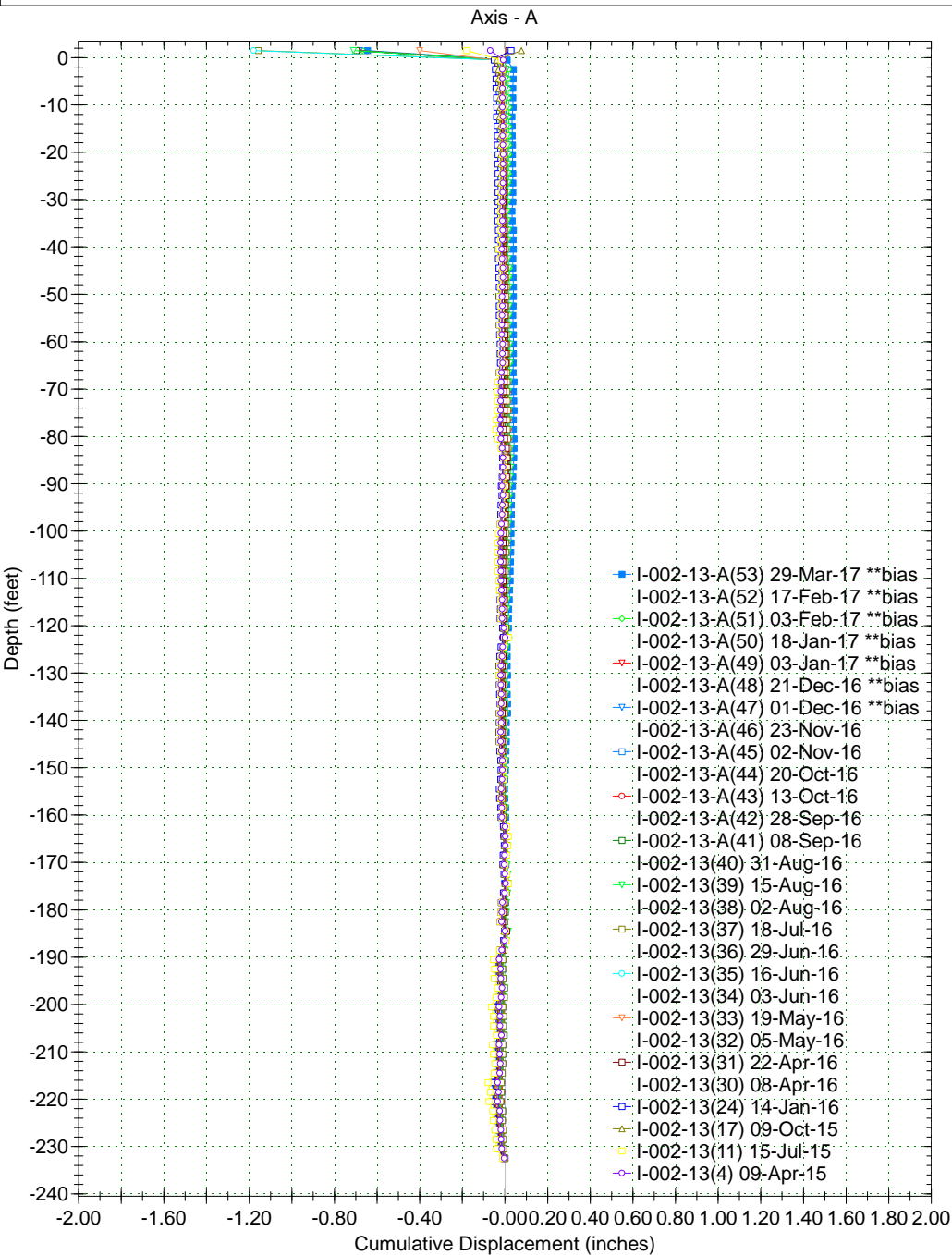
Spiral Correction : N/A
Collar Elevation : 3.7 feet
Borehole Total Depth : 228.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 11:14
Applied Azimuth : 0.0 degrees



Borehole : I-002-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



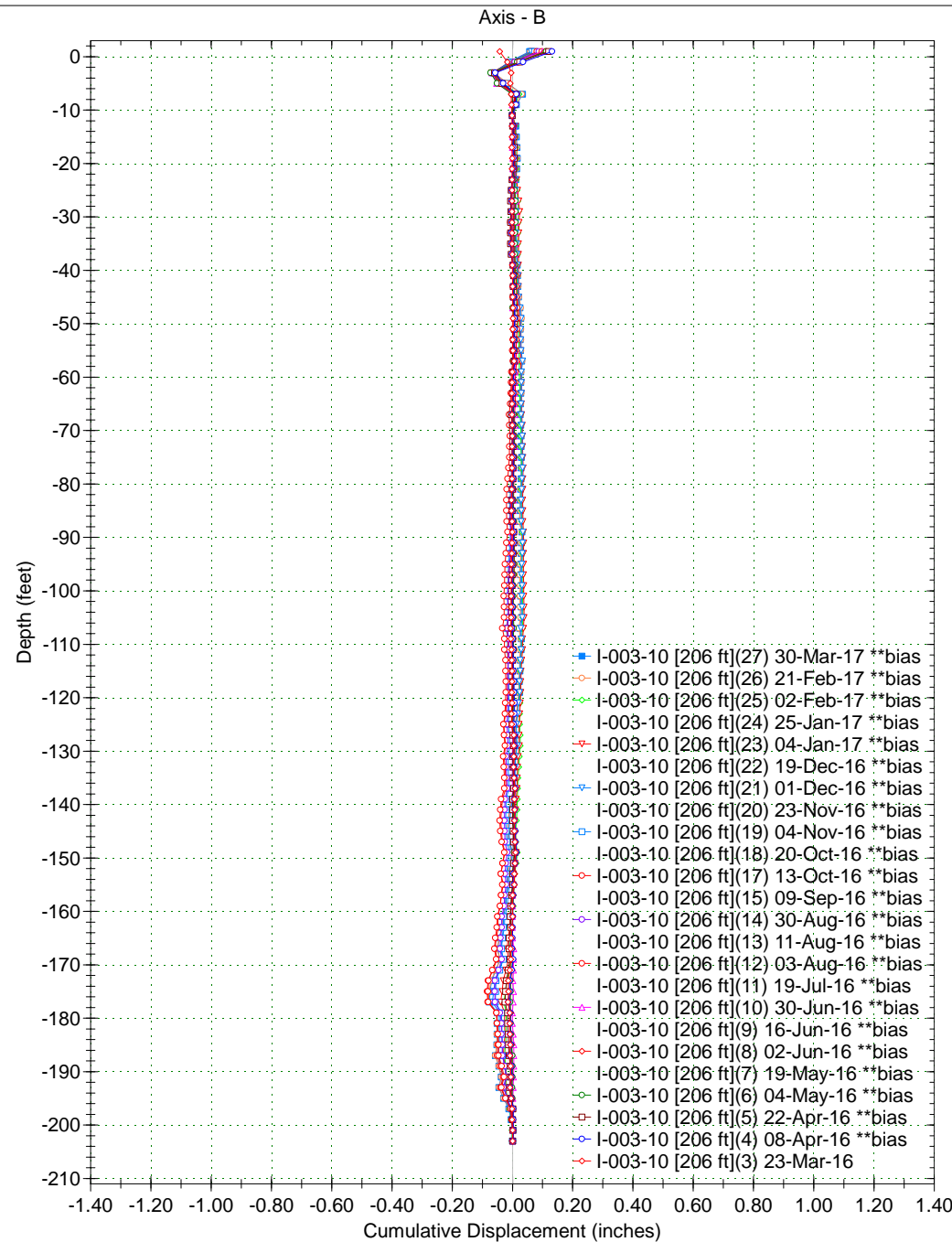
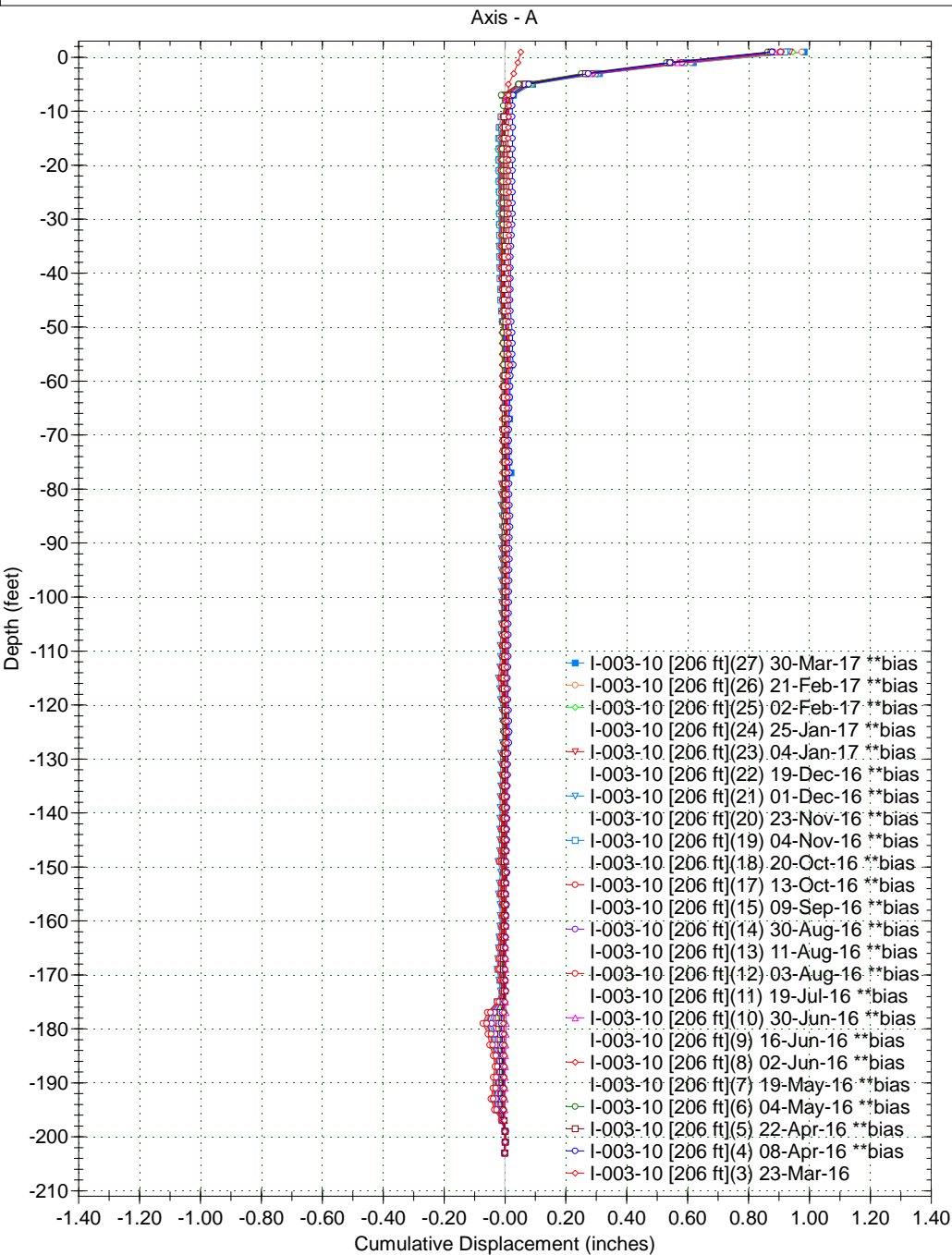
Spiral Correction : N/A
Collar Elevation : 3.5 feet
Borehole Total Depth : 236.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 10:04
Applied Azimuth : 0.0 degrees



Borehole : I-003-10 [206 ft]
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



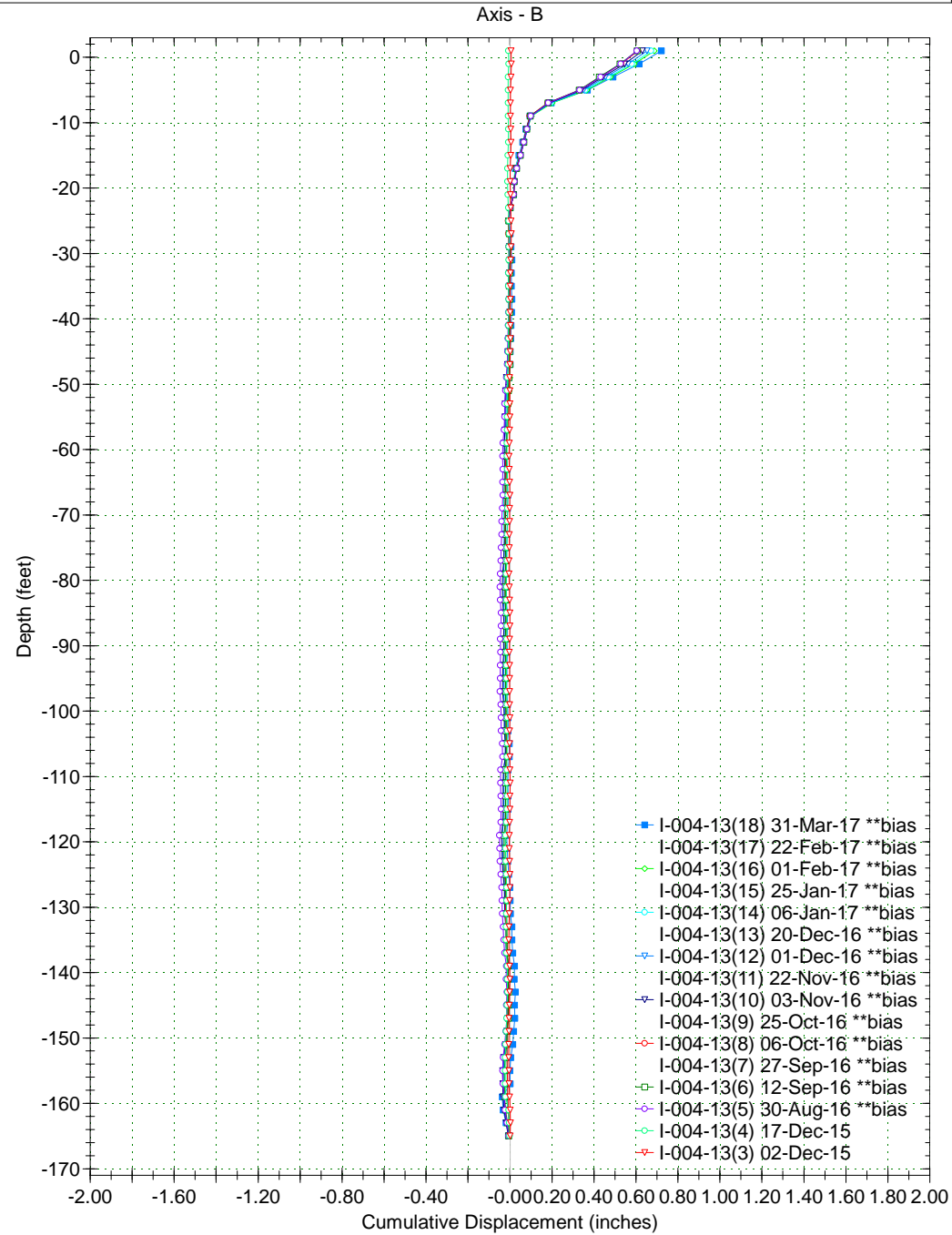
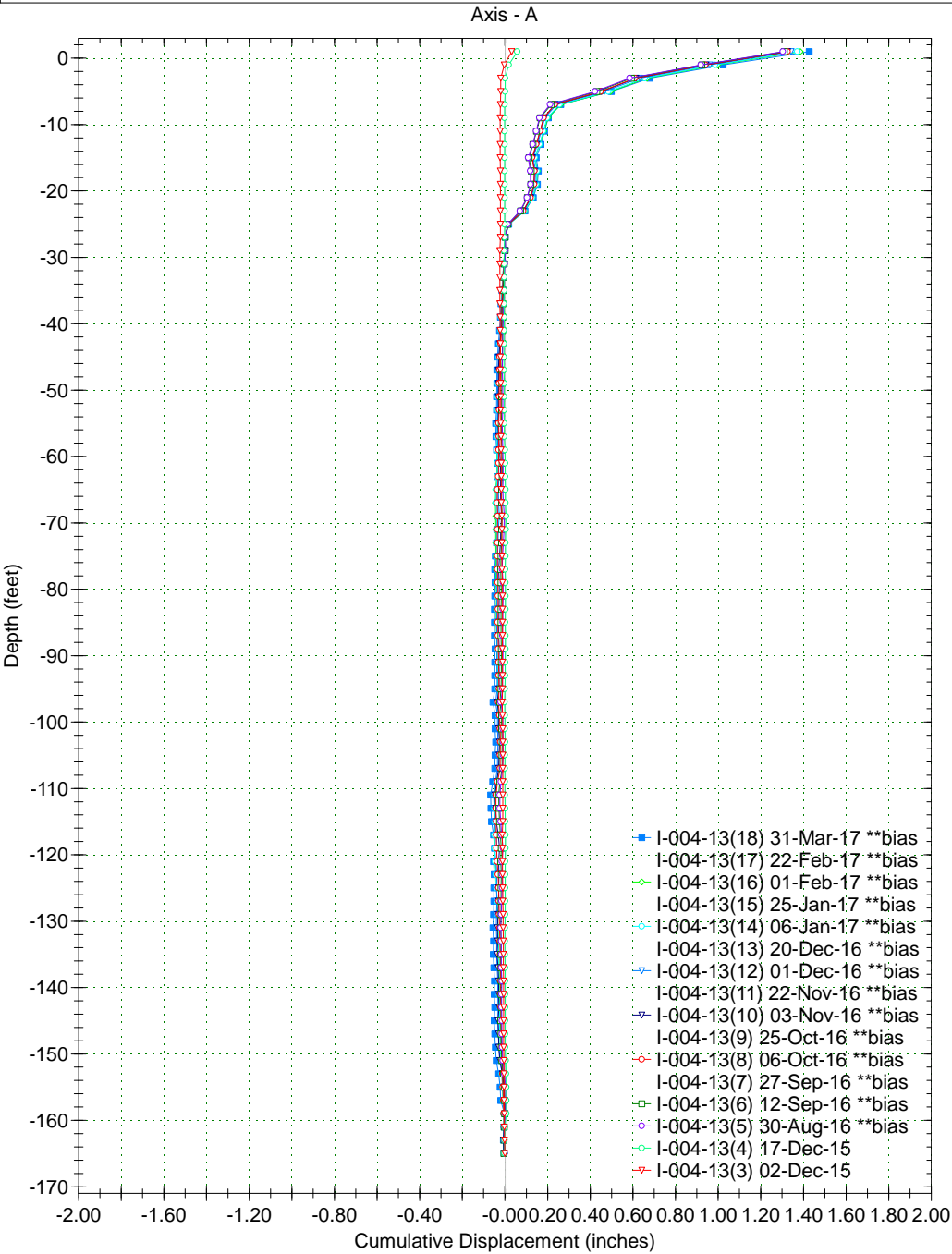
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 206.0 feet
A+ Groove Azimuth :
Base Reading : 2016 Mar 08 15:42
Applied Azimuth : 0.0 degrees



Borehole : I-004-13
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



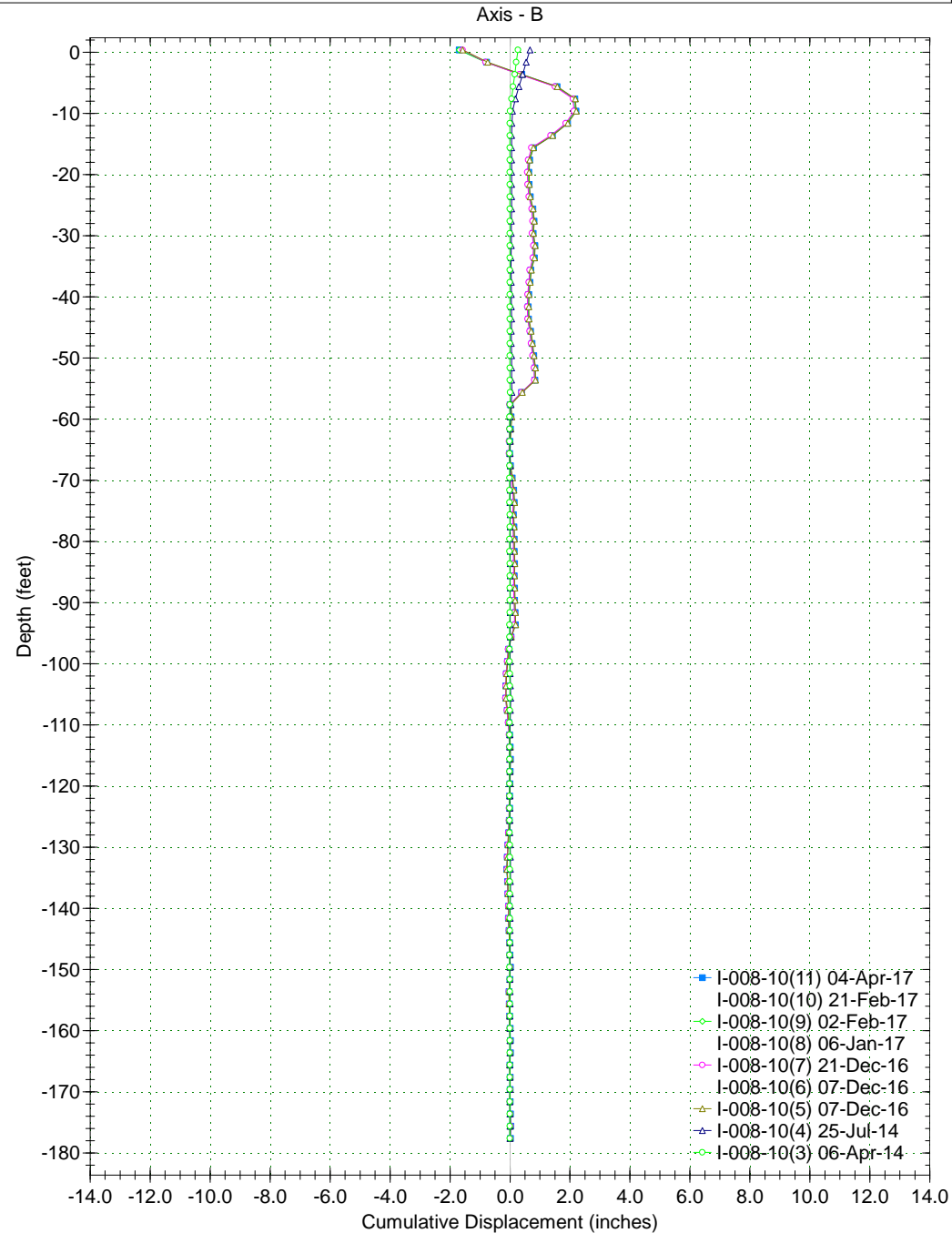
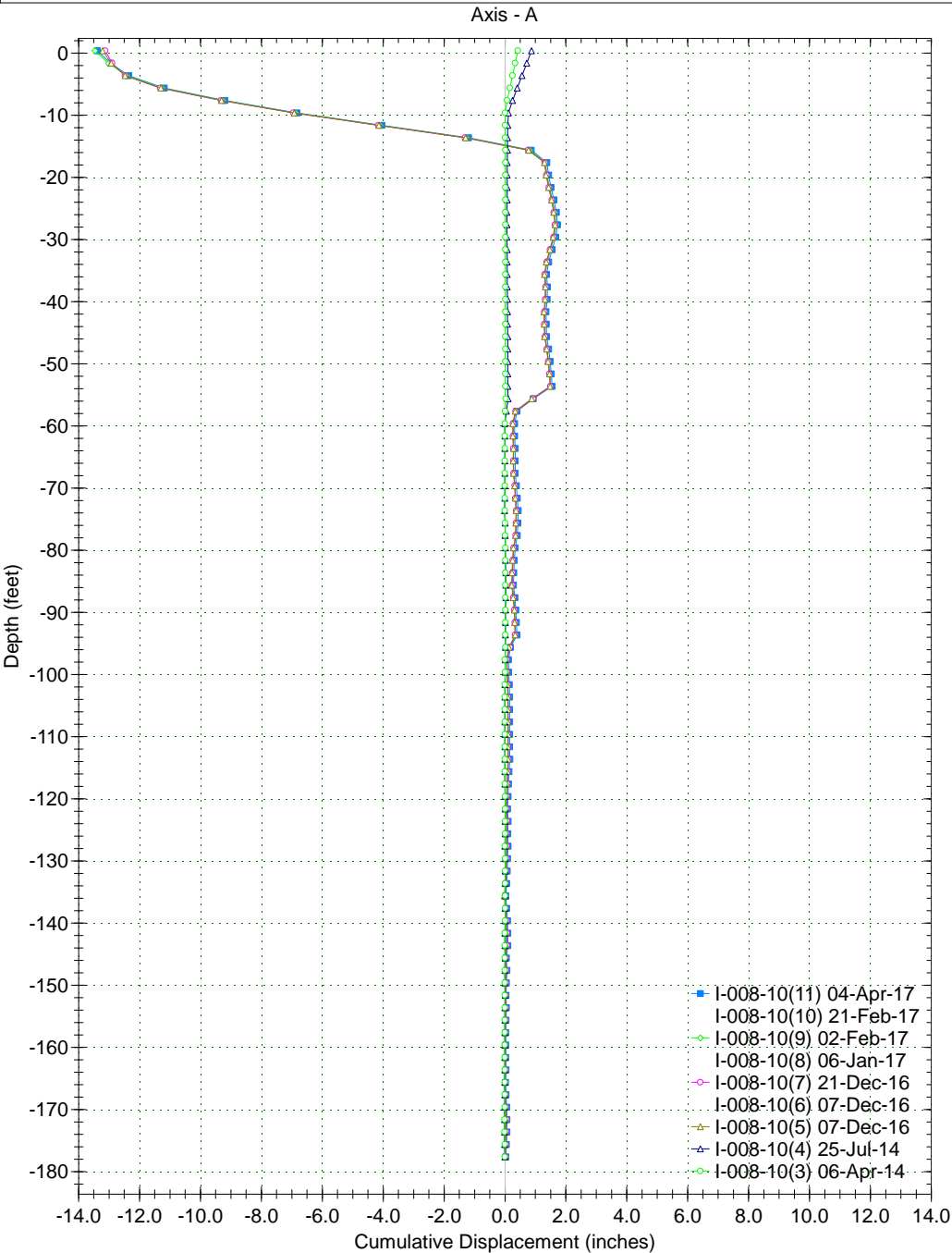
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 168.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Nov 20 09:09
Applied Azimuth : 0.0 degrees



Borehole : I-008-10
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



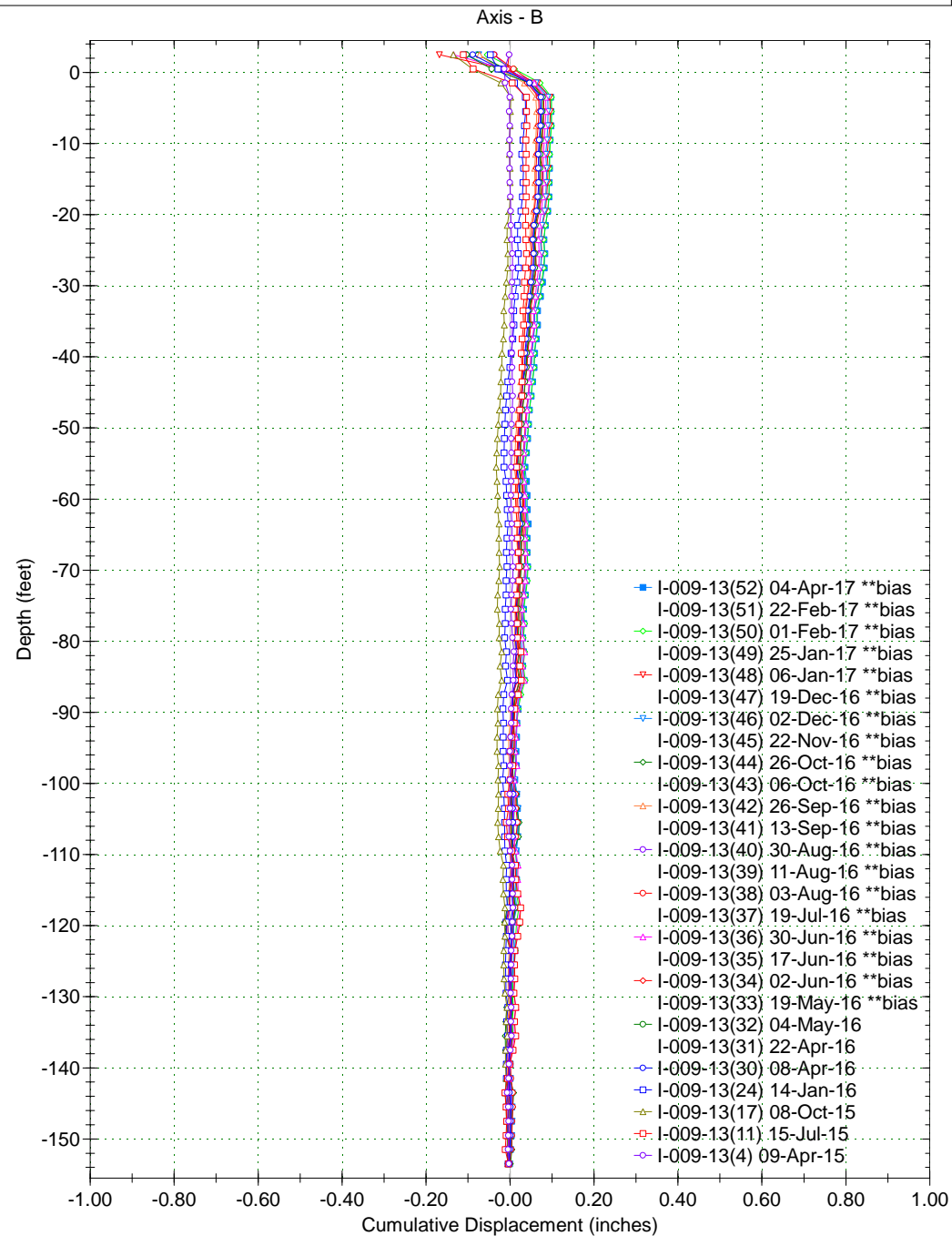
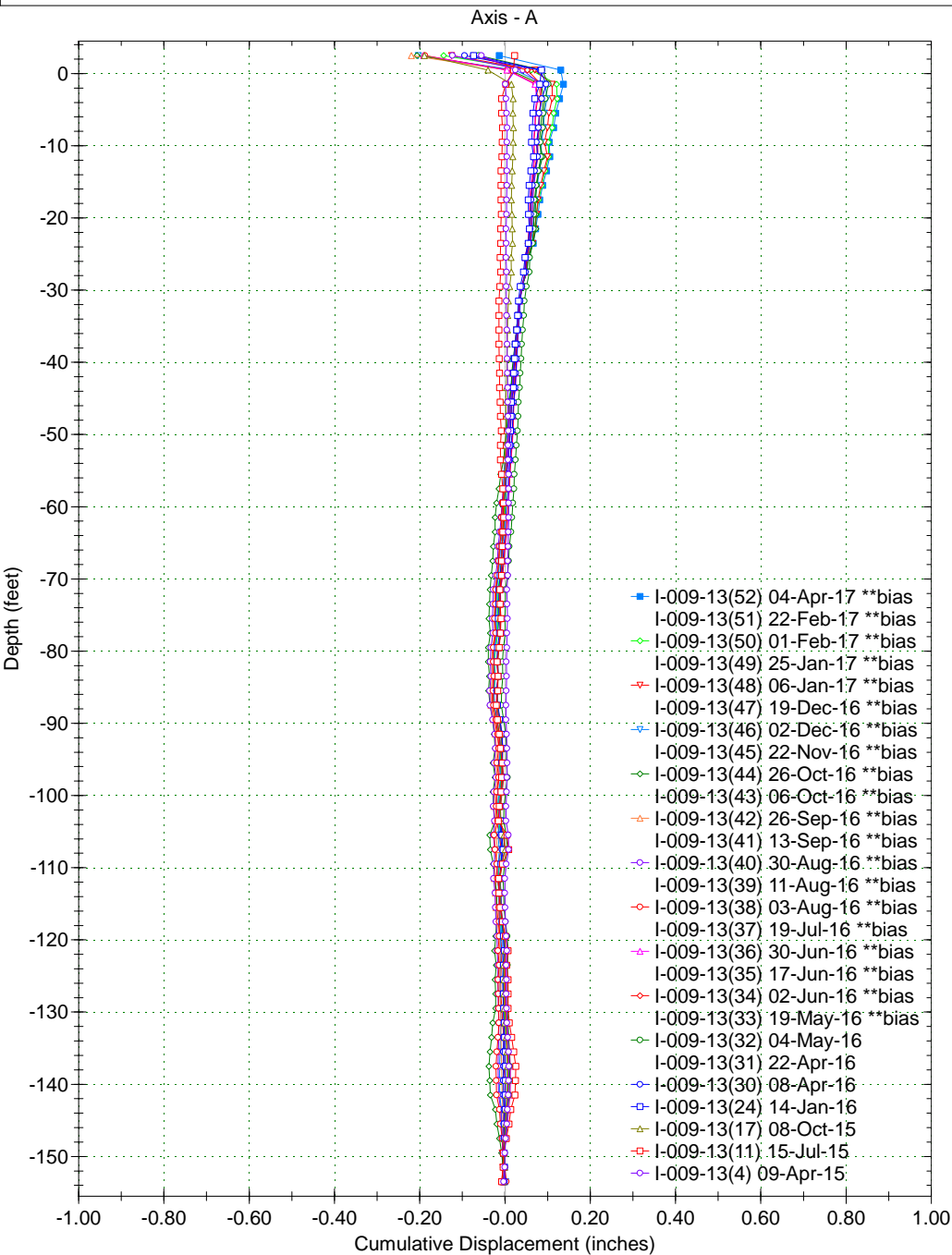
Spiral Correction : N/A
Collar Elevation : 2.4 feet
Borehole Total Depth : 180.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 14 07:26
Applied Azimuth : 0.0 degrees



Borehole : I-009-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



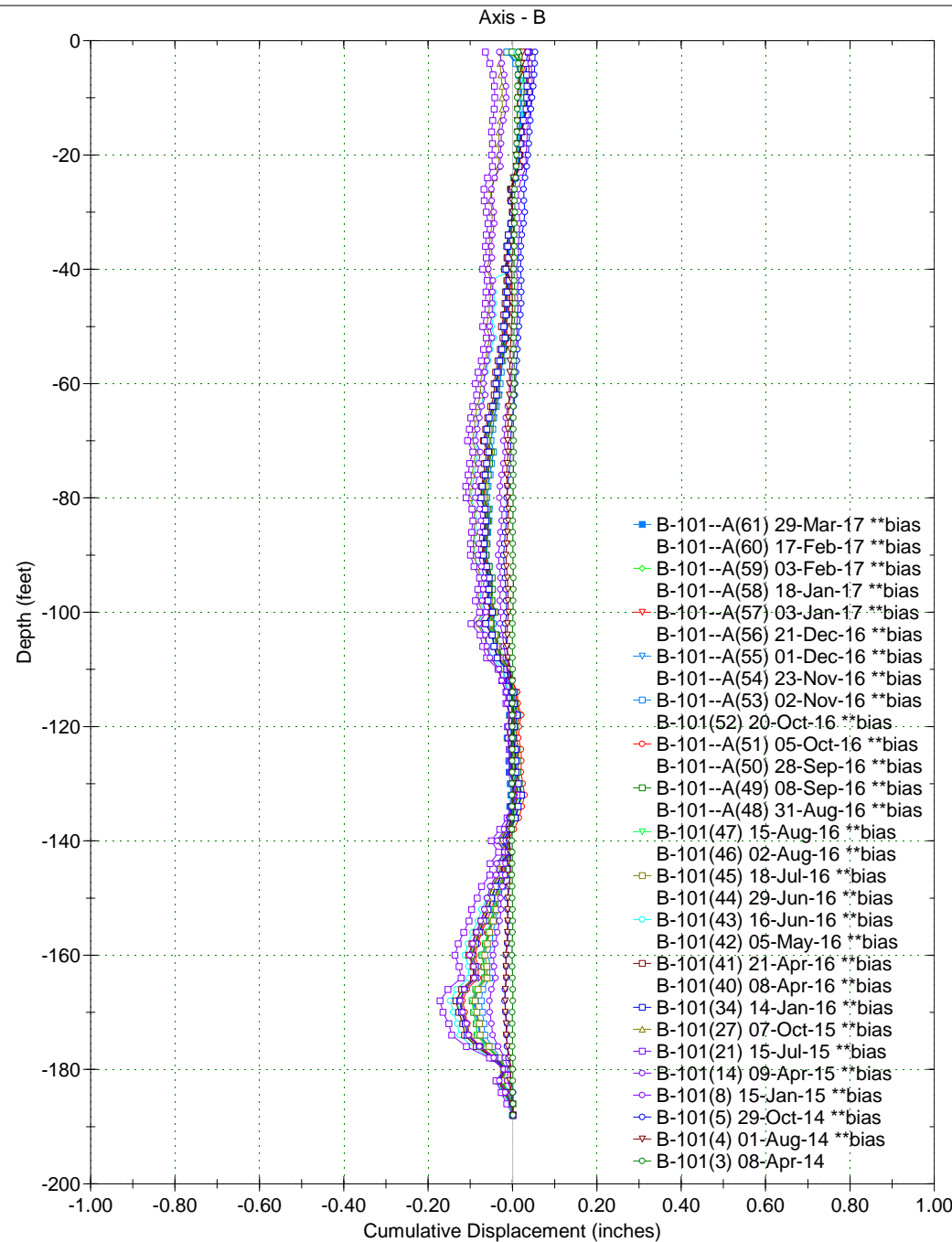
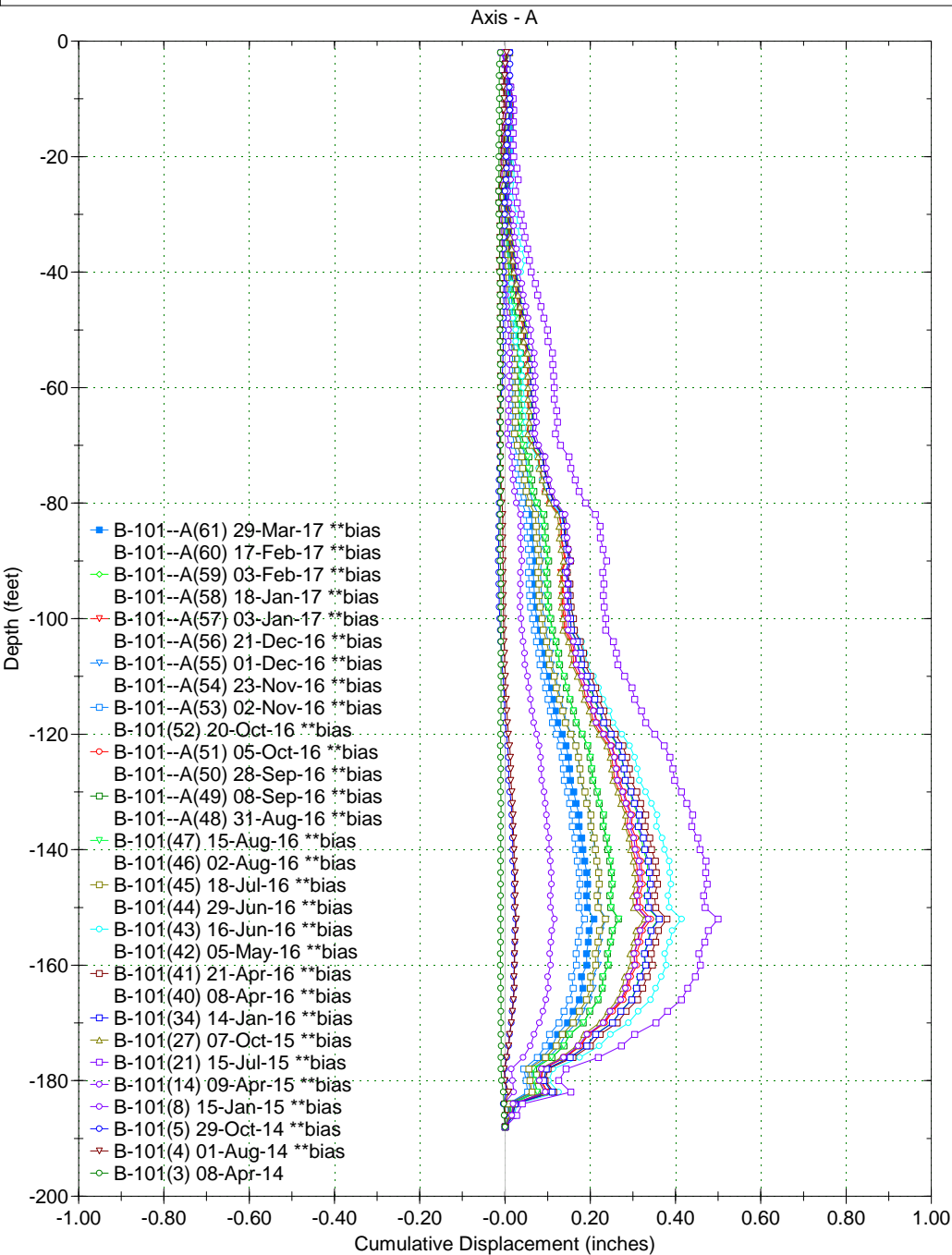
Spiral Correction : N/A
Collar Elevation : 4.5 feet
Borehole Total Depth : 158.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 18 15:56
Applied Azimuth : 0.0 degrees



Borehole : B-101
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : Sta. 15+06.50
 Easting : 120.7' Rt of CL
 Collar :



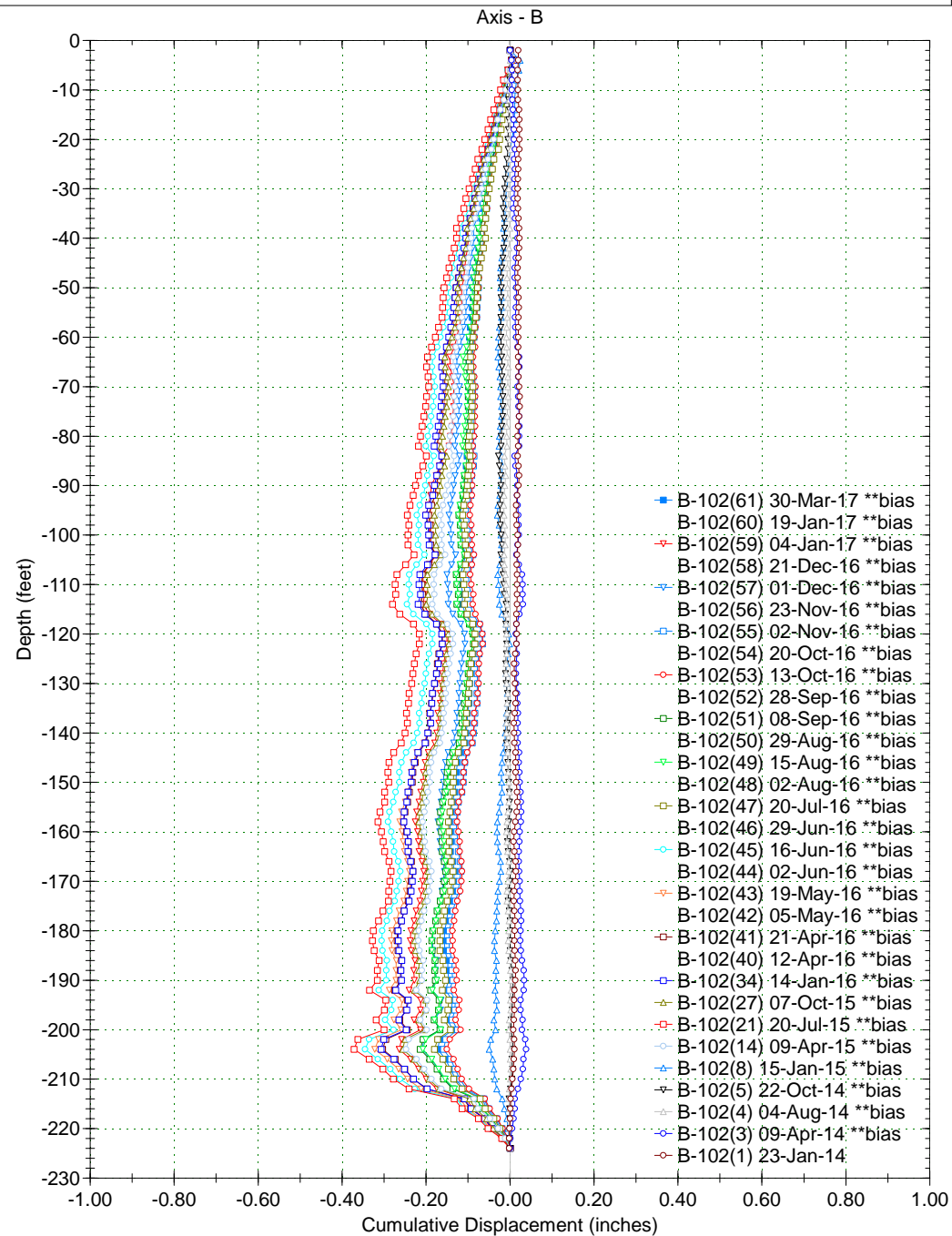
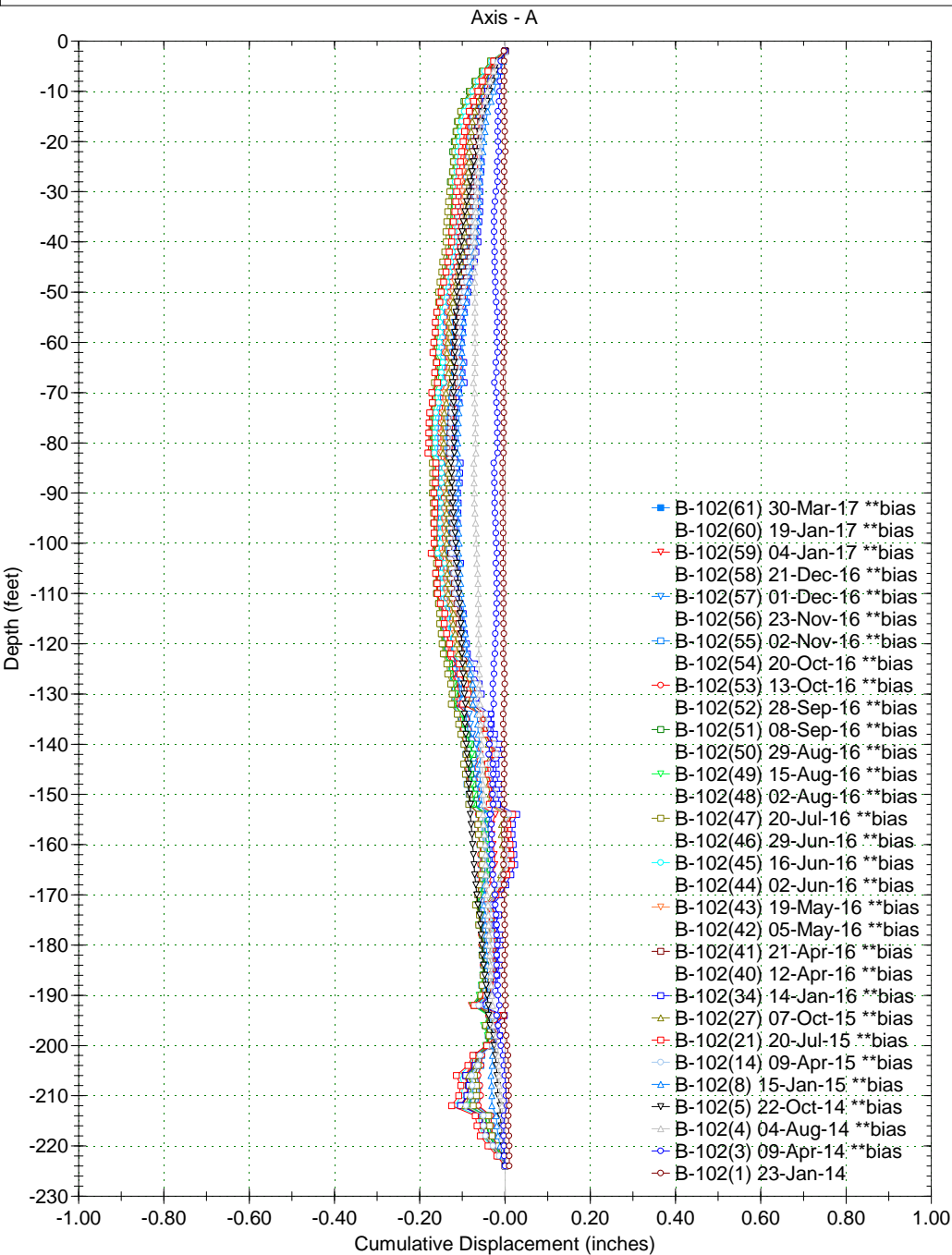
Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 188.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 22 09:01
 Applied Azimuth : 0.0 degrees



Borehole : B-102
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing : Sta. 15+95.34
Easting : 134.7' Rt of CL
Collar :



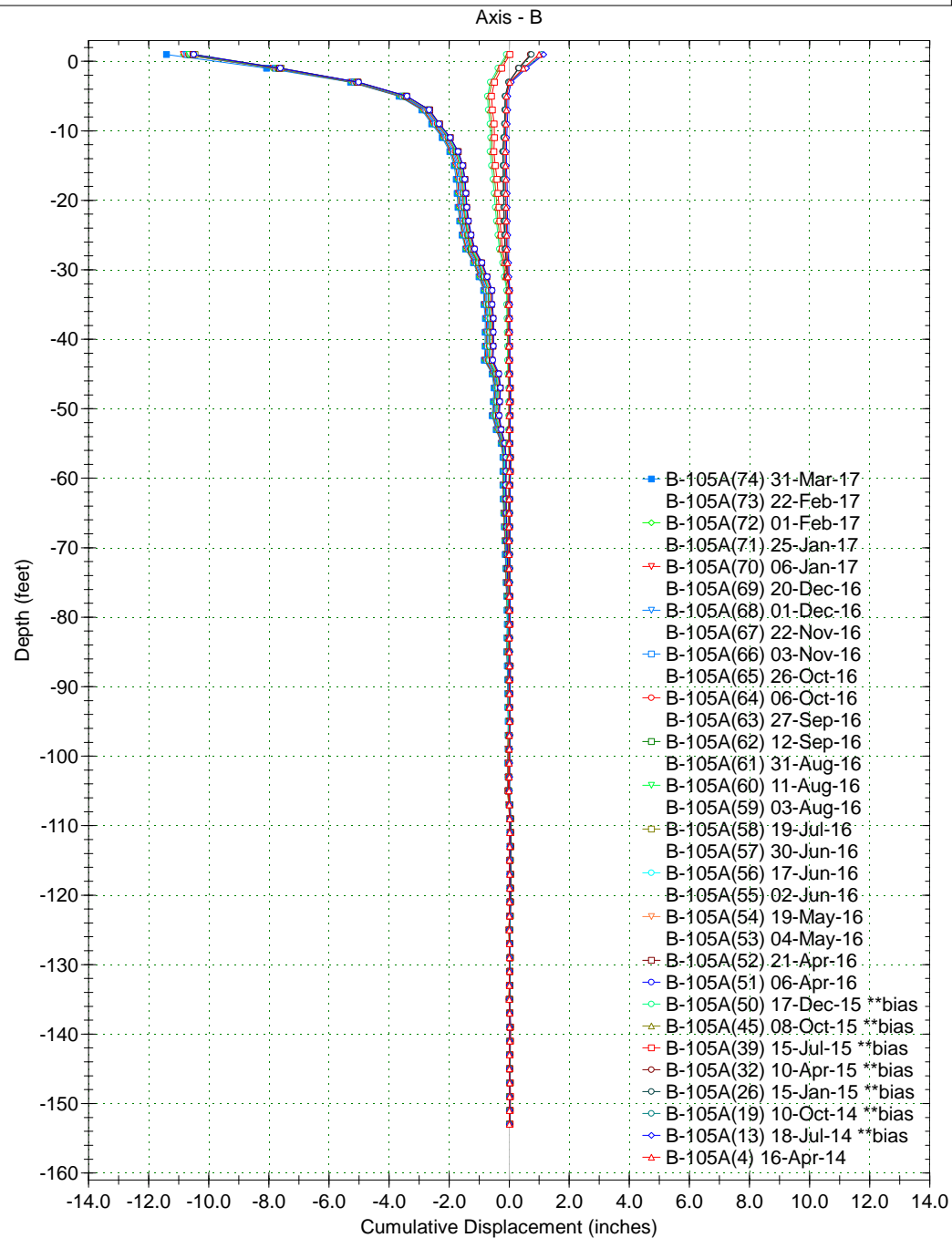
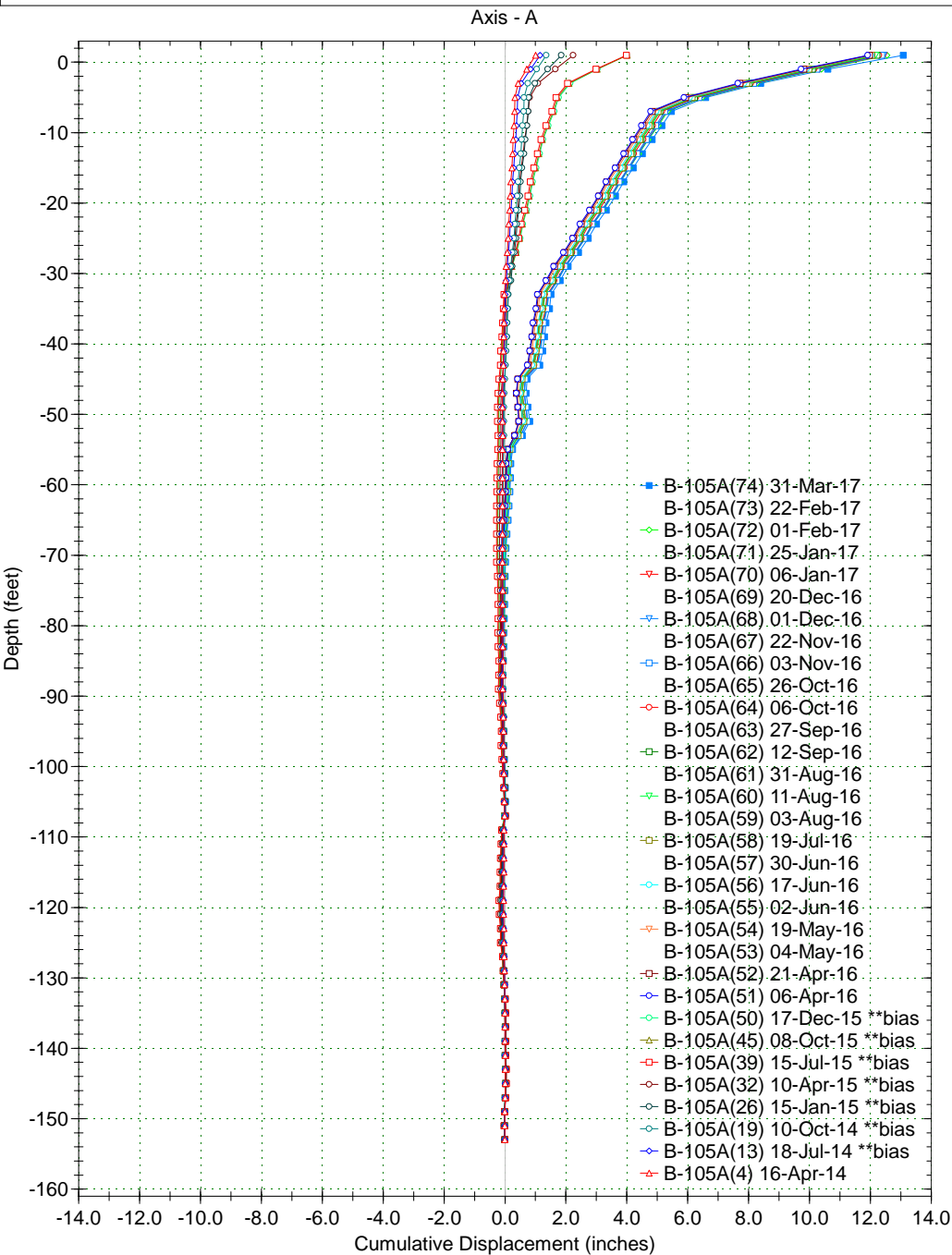
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 224.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 23 08:21
Applied Azimuth : 0.0 degrees



Borehole : B-105A
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing : Sta. 19+11.38
Easting : 90.9' Rt of CL
Collar :

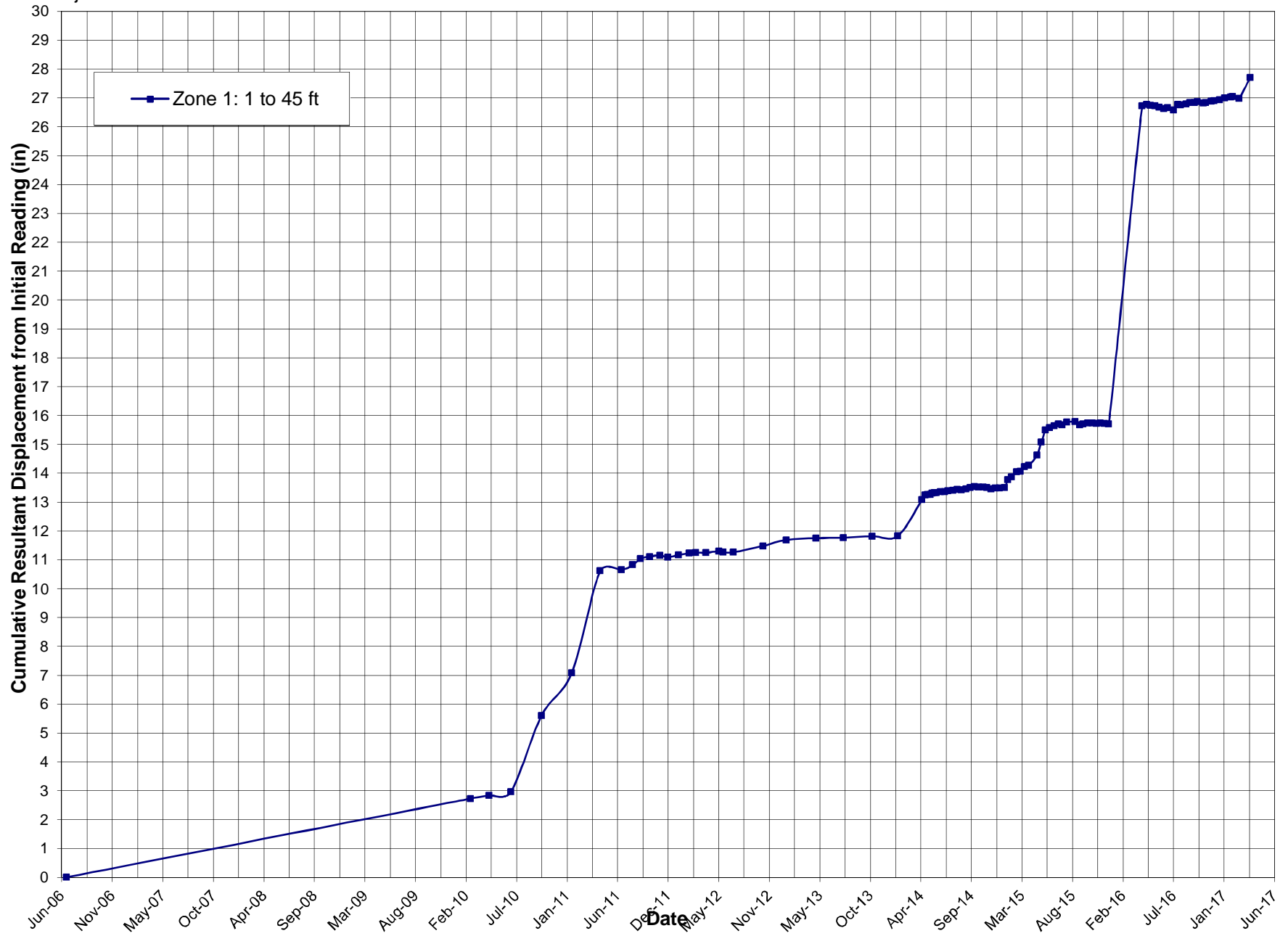


Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 156.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 15 09:19
Applied Azimuth : 0.0 degrees



CUY-90-15.24
PID 96504
SME Project#: 069032.00

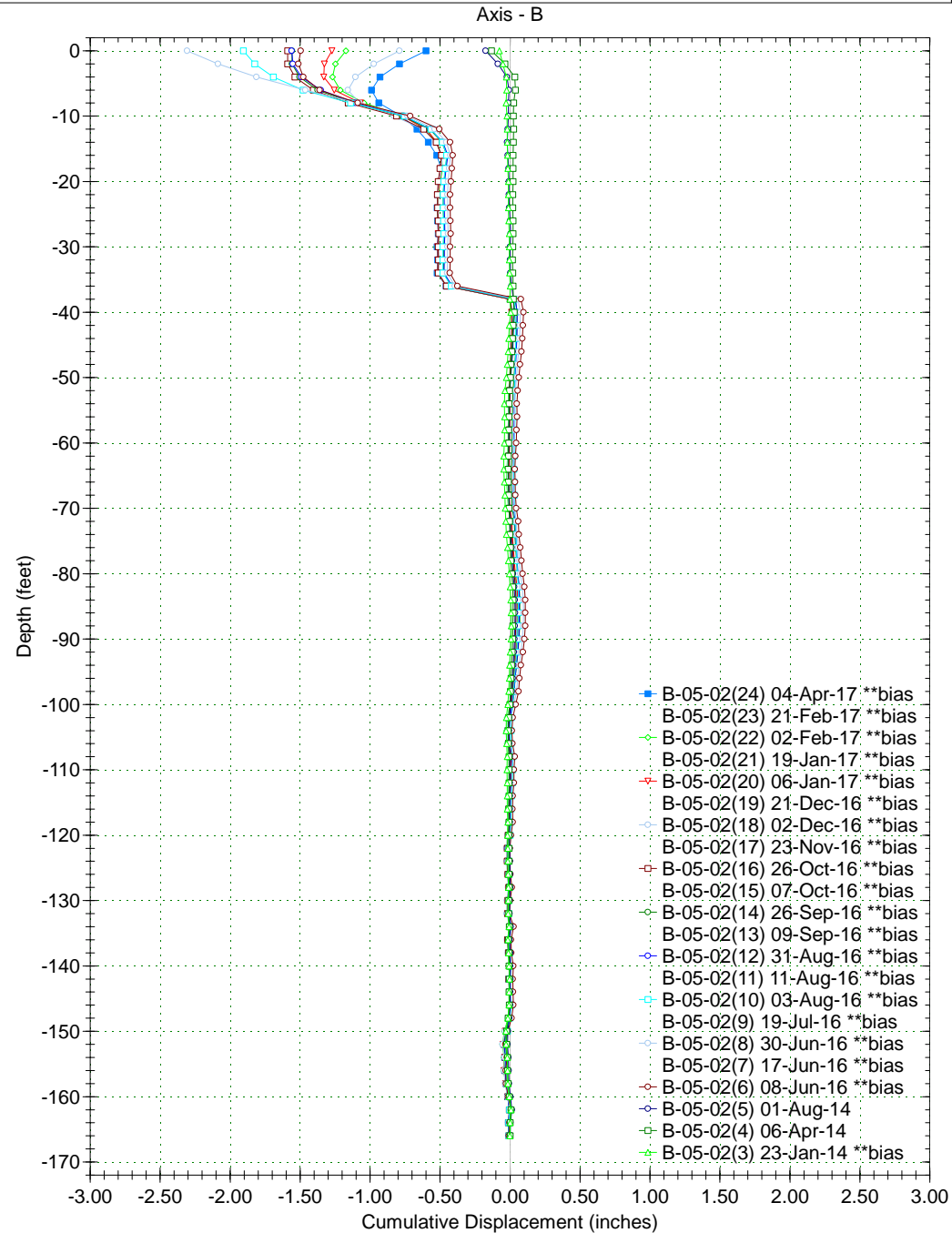
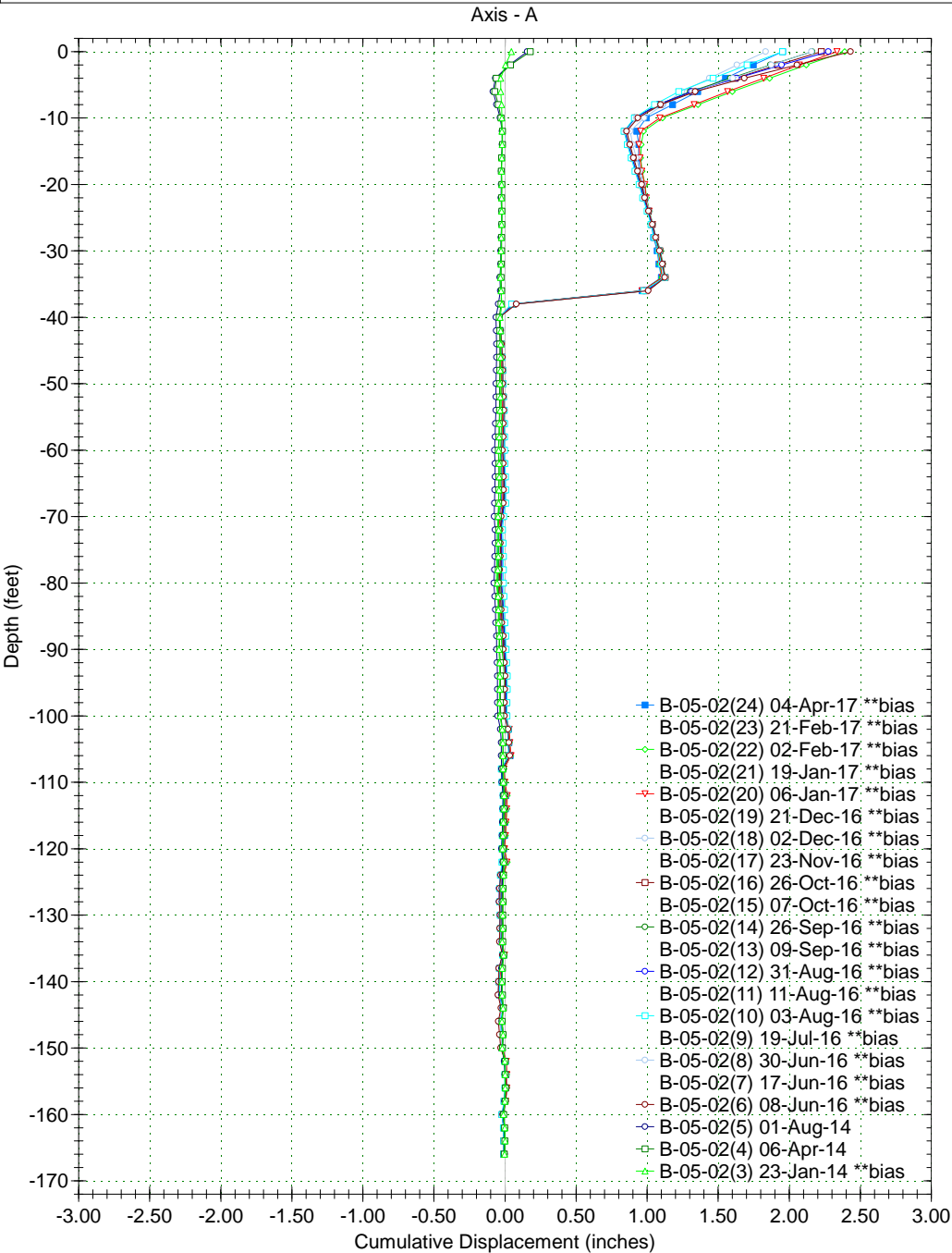
B-105A



Borehole : B-05-02
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing : 663737.939
Easting : 2190289.081
Collar :

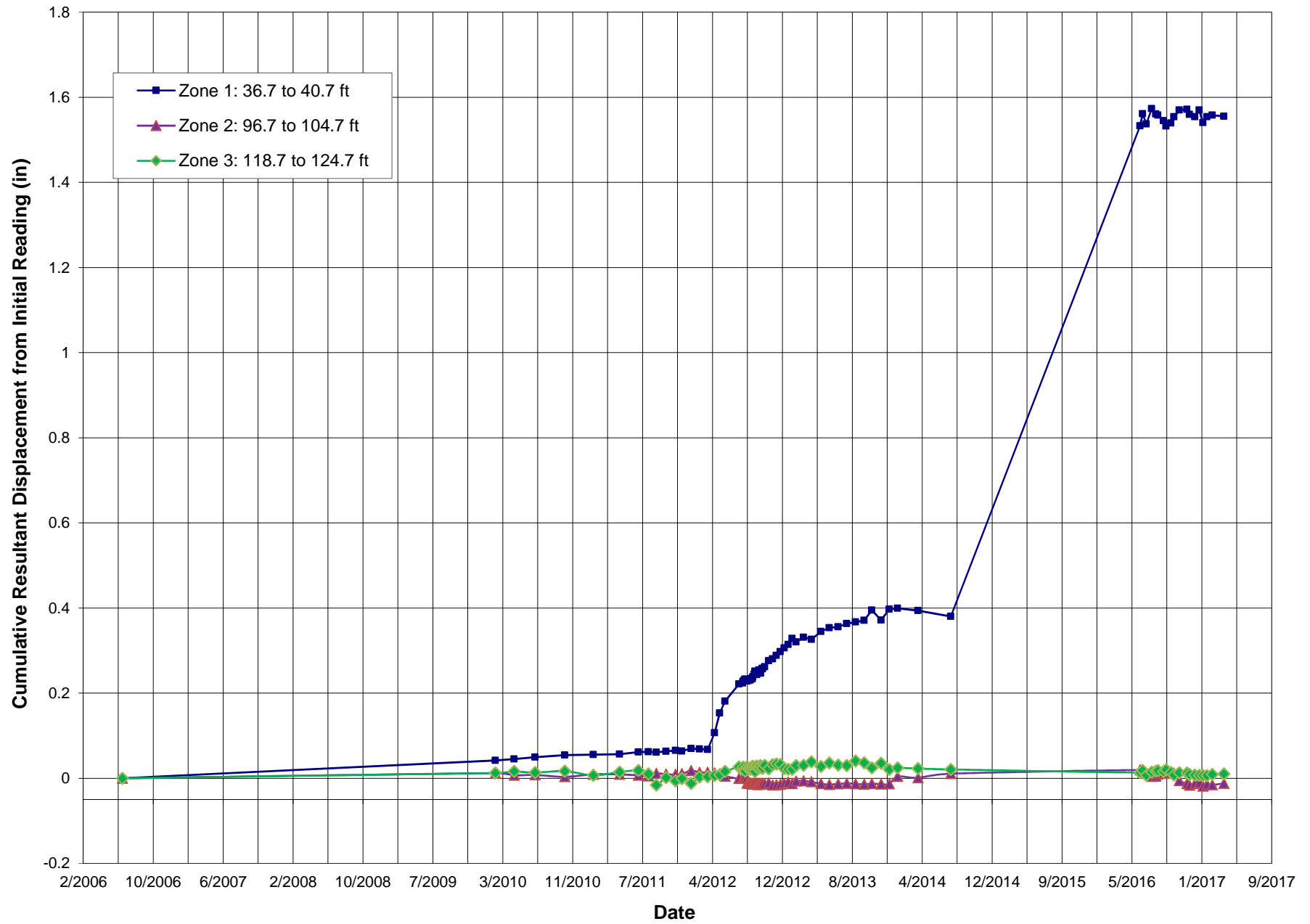


Spiral Correction : N/A
Collar Elevation : 2.0 feet
Borehole Total Depth : 168.0 feet
A+ Groove Azimuth :
Base Reading : 2013 Dec 24 11:12
Applied Azimuth : 0.0 degrees



CUY-90-15.24
PID 63504
SME Project#: 069032.00

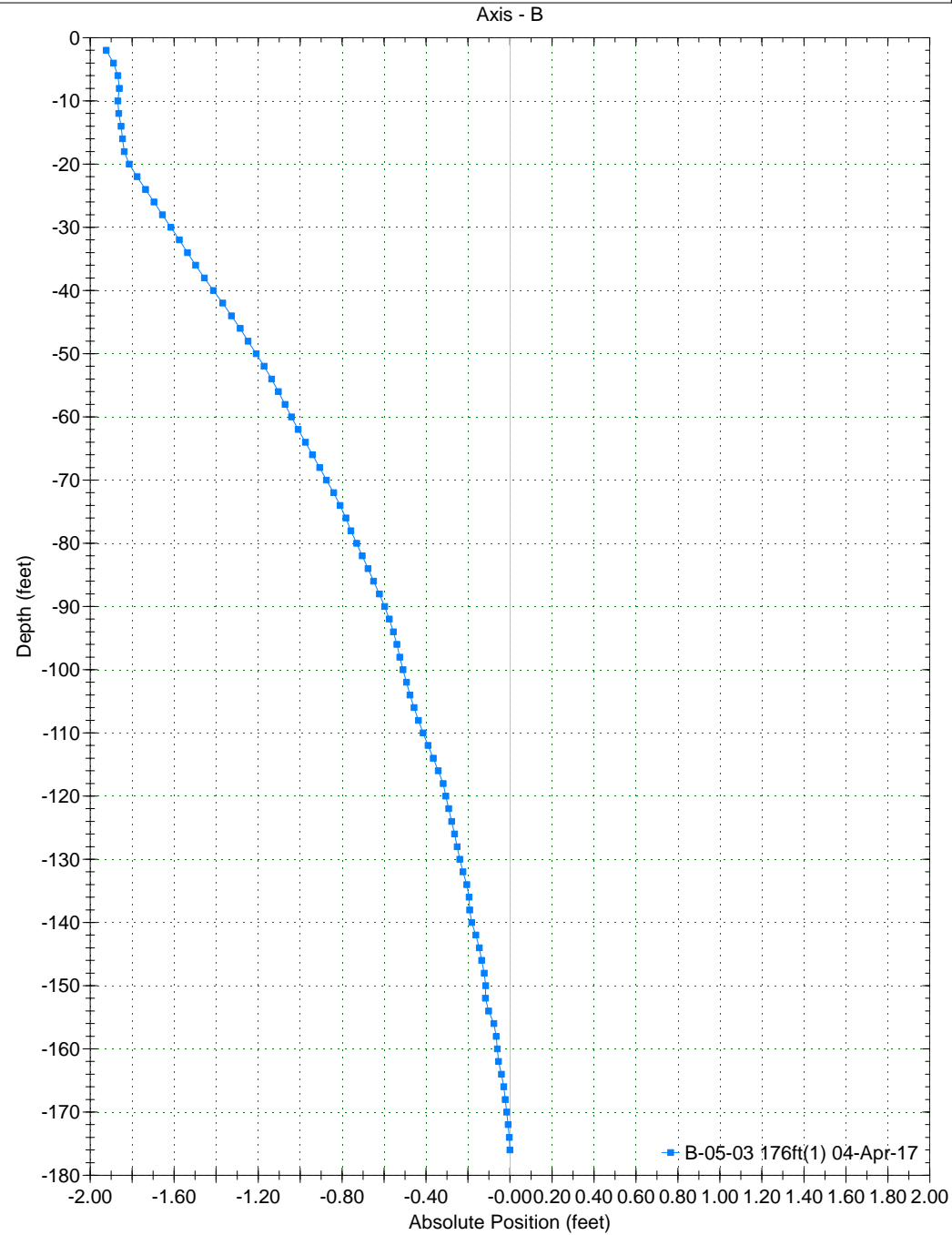
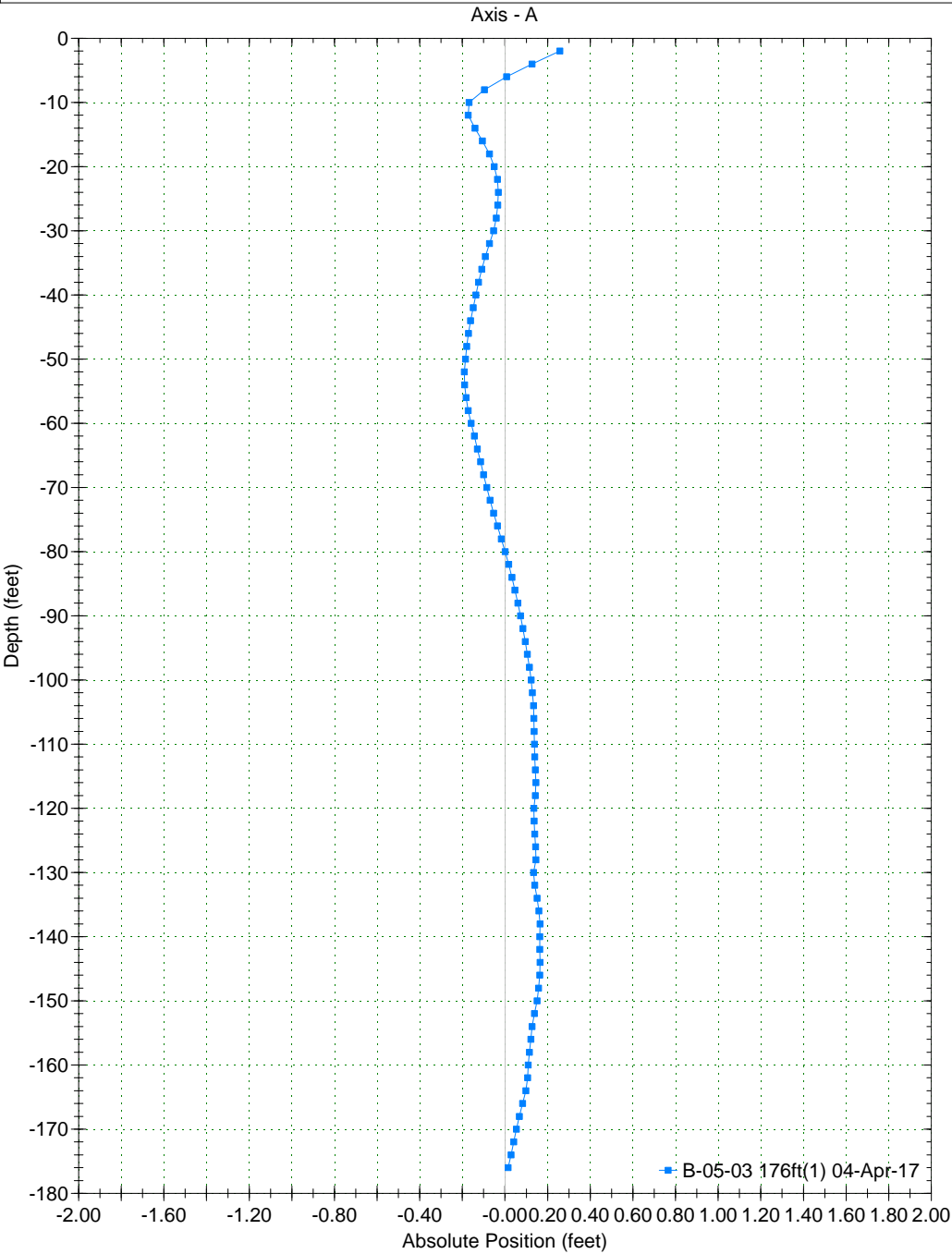
B-05-02



Borehole : B-05-03
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



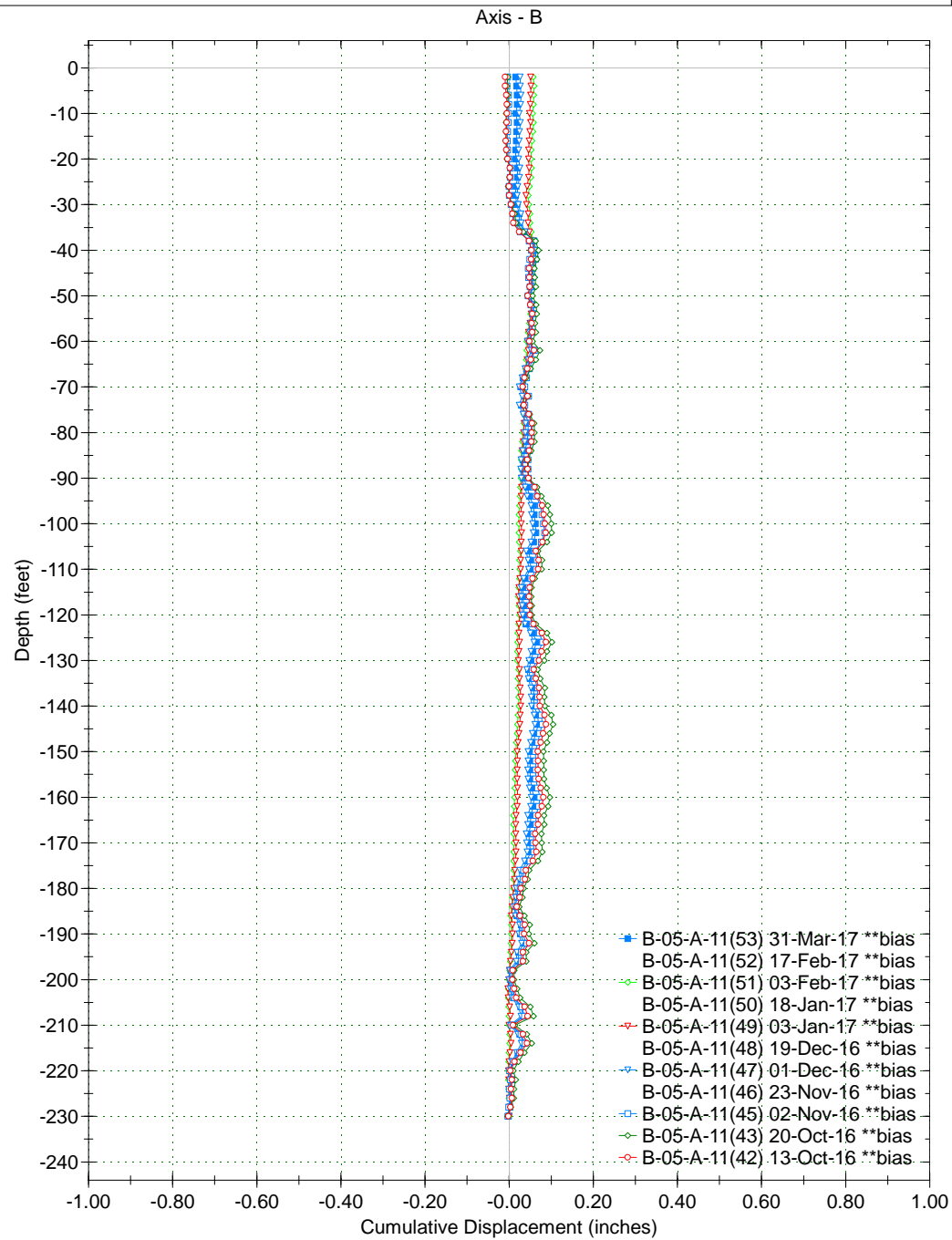
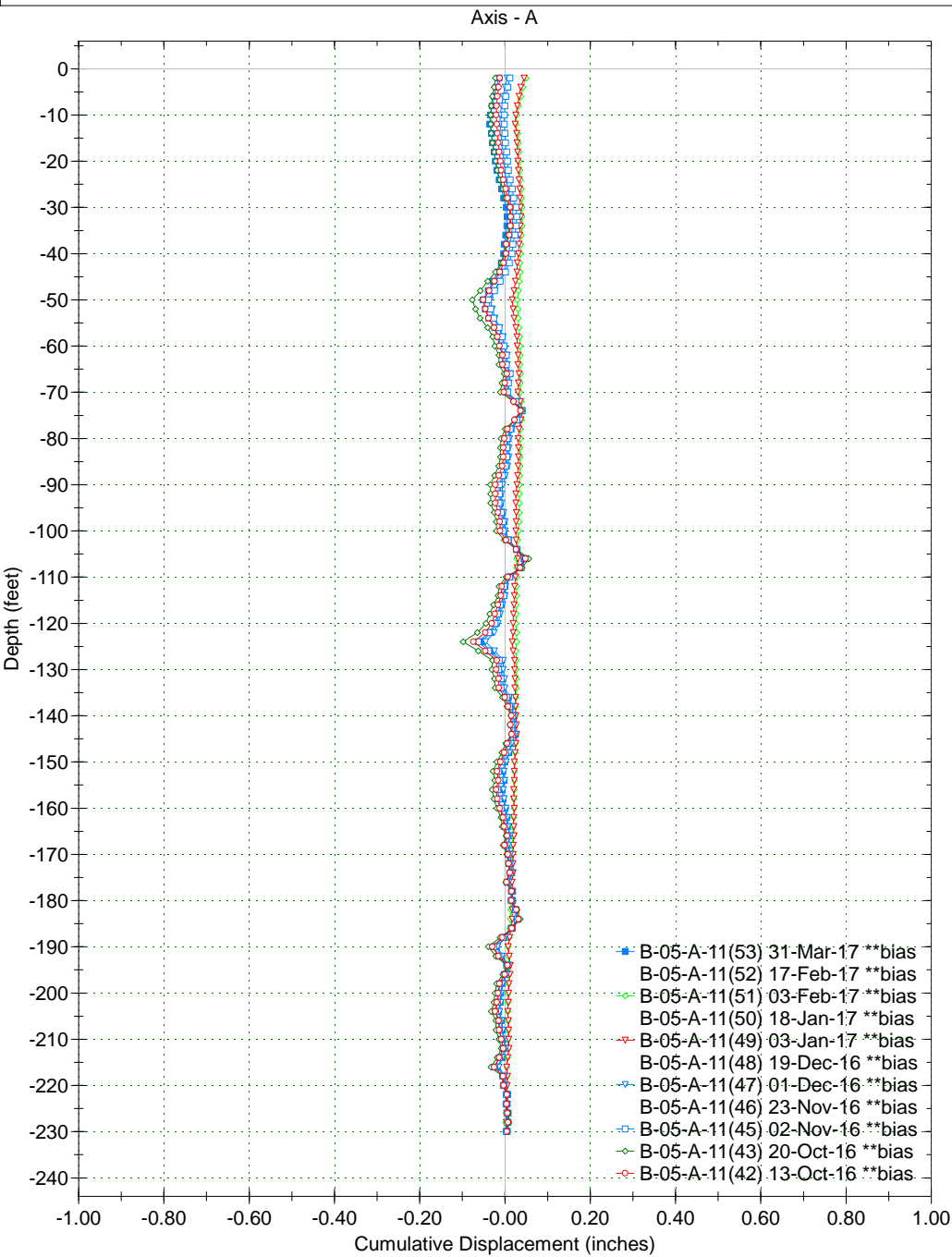
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 176.0 feet
A+ Groove Azimuth :
Base Reading : 2017 Apr 04 08:38
Applied Azimuth : 0.0 degrees



Borehole : B-05-A-11 230 ft
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



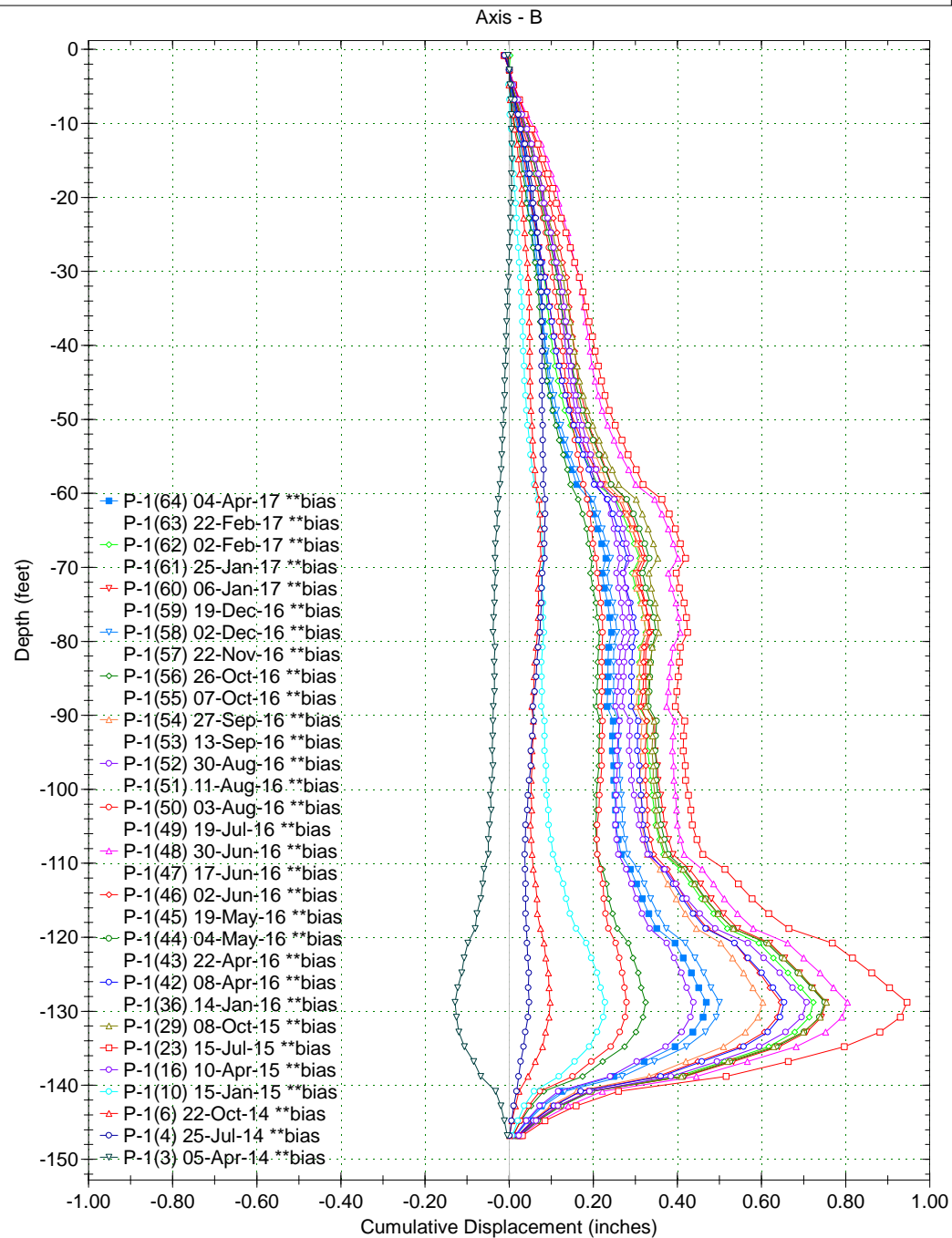
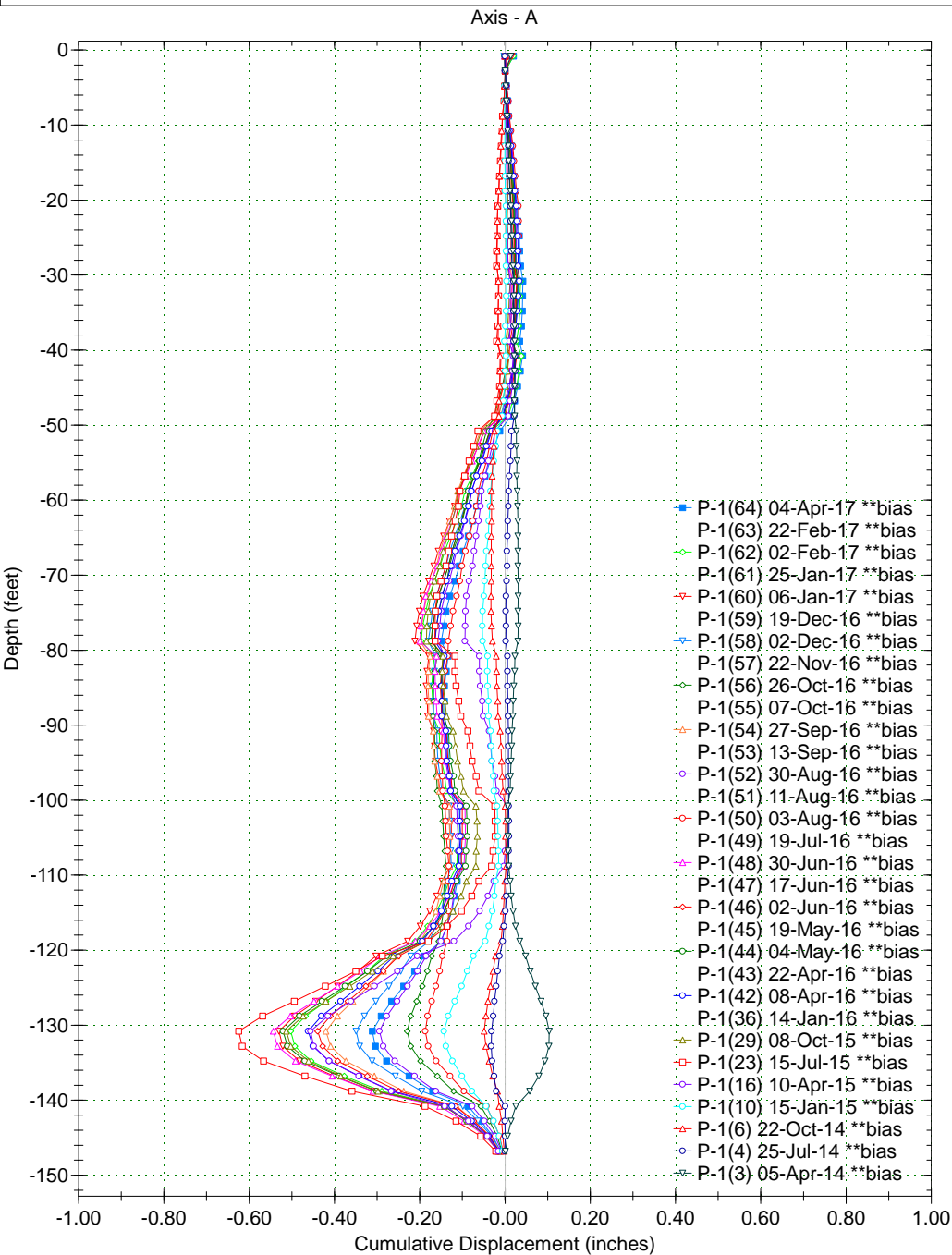
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 230.0 feet
A+ Groove Azimuth :
Base Reading : 2016 Sep 28 08:37
Applied Azimuth : 0.0 degrees

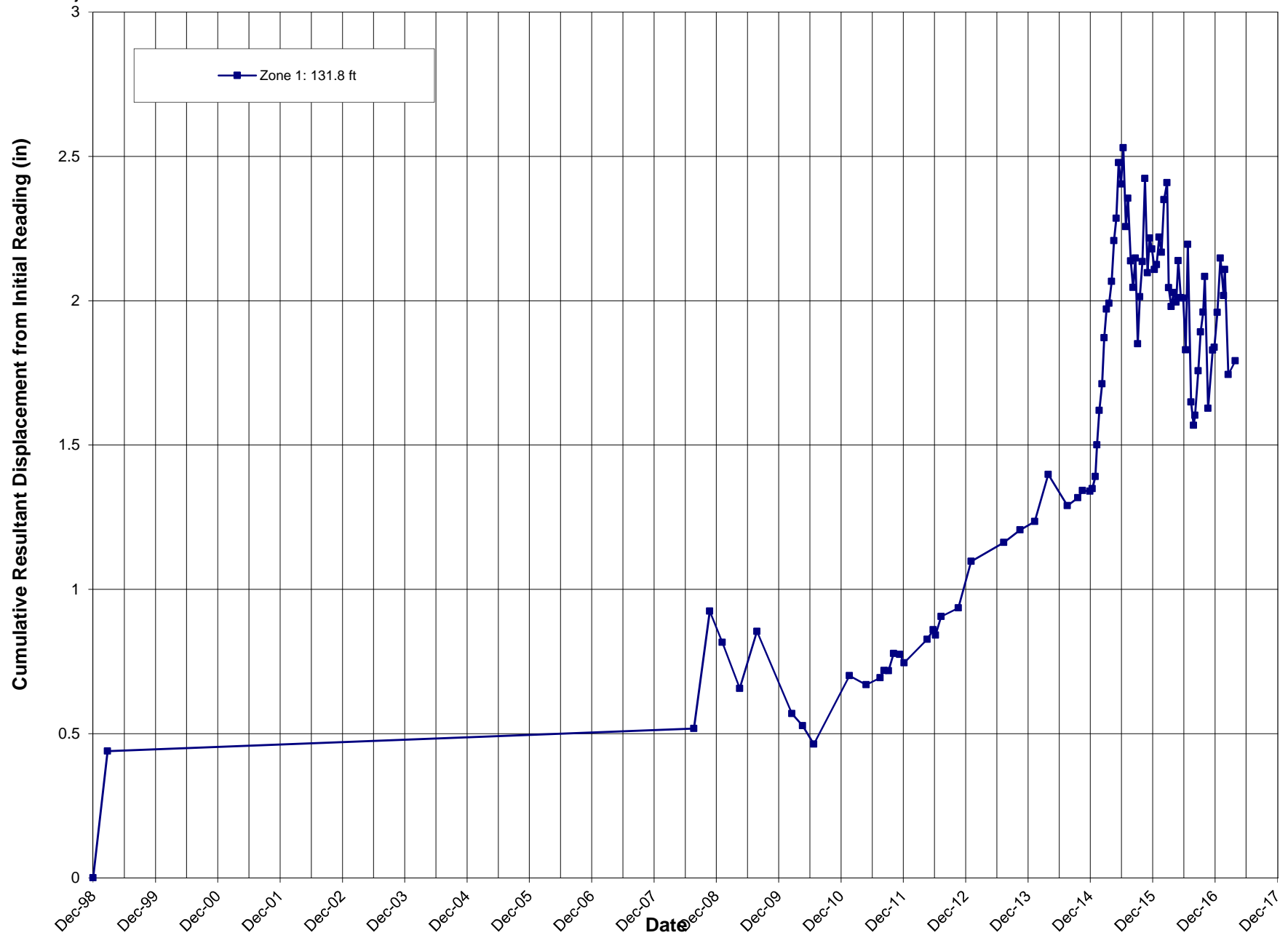


Borehole : P-1
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 10:47
Applied Azimuth : 0.0 degrees





Borehole : P-9N
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 150.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 16 09:28
Applied Azimuth : 0.0 degrees

