



9375 Chillicothe Road
Kirtland, OH 44094-8501

T (440) 256-6500

www.sme-usa.com

May 31, 2016

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: May 19, 2016 Bi-Weekly Readings
CUY-90-15.24 Slope Monitoring
PID 96504
SME Project No. 069032.00

Dear Mr. Lastovka:

Bi-weekly instrument readings for the I-90 west slope taken on May 19, 2016, are presented in this report. Bi-weekly readings currently include instruments at I/P-001-13, I/P-002-13, I/P-003-10, I/P-004-13, I/P-009-13, B-101, B-102, B-105A, B-05-A-03, B-05-04, B-05-A-11, P-1, P-9N, TGR I-2, and TGR I-4.

Piezometer Readings

P-003-10, P-009-13, B-105-A, B-05-A-03 – Pore pressure readings at these locations indicate total head increases of 0.5 feet or less in all piezometers this two-week period.

P-001-13 – At this location, pore pressure readings indicate an increase in total head of about 1 foot in the four shallowest piezometers over the past two weeks. The three deep piezometers showed virtually no change.

P-002-13 – Data for this location shows no change this past two weeks.

P-004-13 – Piezometers at this location are still inaccessible.

B-05-04 – Pore pressure readings at this location indicate an increase of about 0.5 feet in the shallow piezometer and virtually no change in the deep piezometer.

B-05-A-11 – Data recorded for this location indicates an increase in total head of about 1.1 feet in the shallow piezometer and 0.5 feet in the deep piezometer for this two-week period.

Inclinometer Readings

Inclinometer readings at I-001-13, I-003-10, I-009-13, B-102, B-105A, B-05-04, B-05-A-11, P-1, P-9N and TGR I-4 showed virtually no movement this two-week period. Displacement at the top of some slope tubes is due to construction disturbance or flexing of the inclinometer tube as readings are taken where the protective covers have not been concreted in place because of the ongoing construction activity.

I-002-13 – Inclinometer readings at this location show large displacements in the top 4 feet of the casing. This is due to the grading work in the surrounding area.

I-004-13 – The inclinometer casing at this location is still inaccessible.

B-101 – We were not able to locate the inclinometer casing at this location. The area has been graded in preparation for concrete placement, which could mean that the casing has been buried.

B-05-03A – Our drill crew purged water from the casing and we lowered a camera down the casing to investigate the large check sums obtained in our initial readings. We found a misalignment of the joint at 100 feet. The large check sums are due to the inclinometer wheels jumping out of the grooves at the misalignment. We checked with the manufacturer who stated that this could not have been a manufacturing defect. The misalignment cannot be corrected so this casing will be abandoned and replaced. The area around this instrument is currently being used to store catwalks for the bridge. This is preventing us from installing a new casing at this time. Until we can install a new casing, we will take readings on the top 98 feet of the current casing. The absolute position plots from the baseline readings are attached.

P-9N – The protective cover for this slope tube was bent and interfered with the inclinometer probe. We were able to bend the steel cover enough to take readings at this location again. Readings this week show virtually no movement.

TGR I-2 – This location is still inaccessible.

This concludes our report of bi-weekly instrument readings. Please call or email with any questions.

Very truly yours,

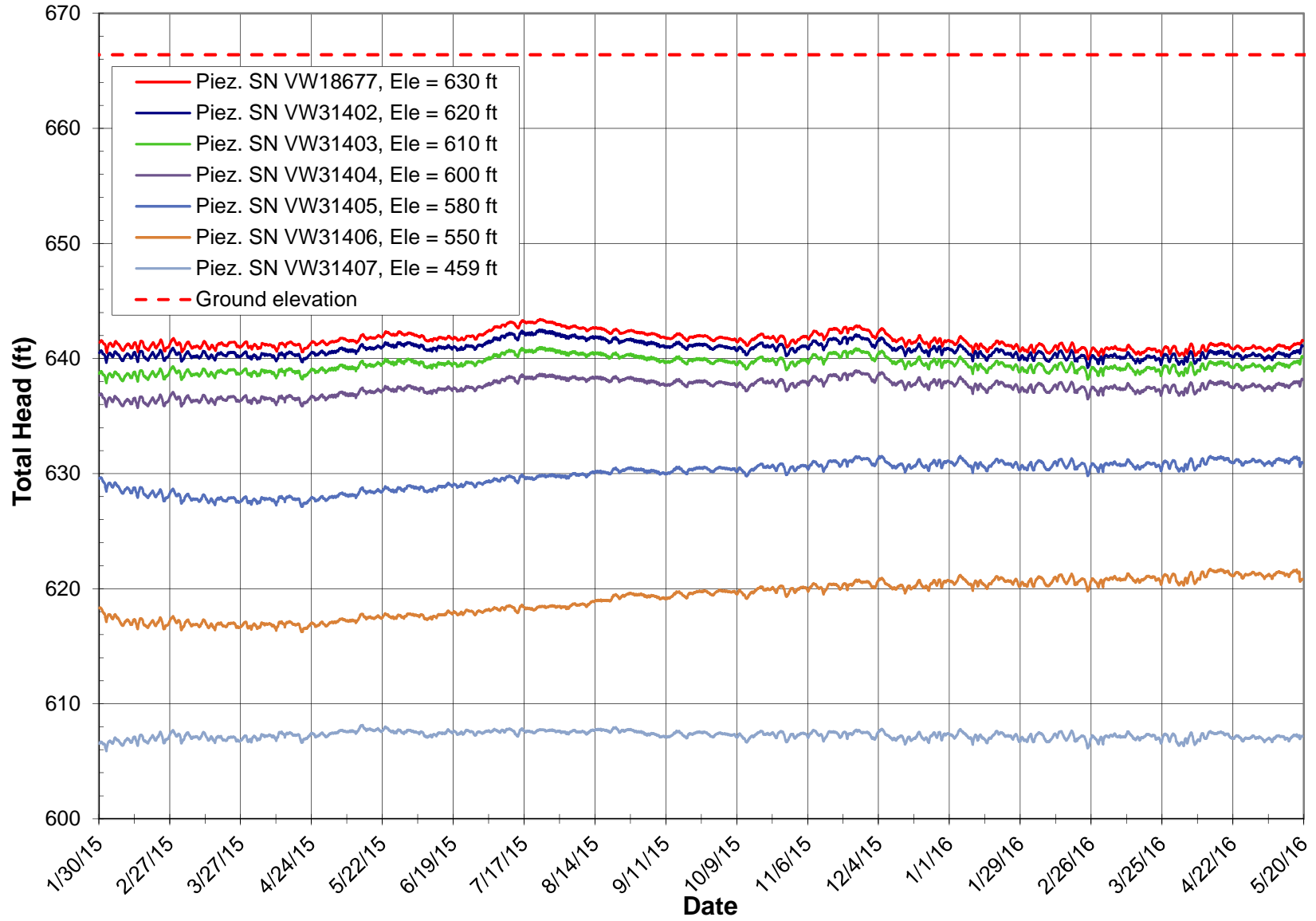
SME

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

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

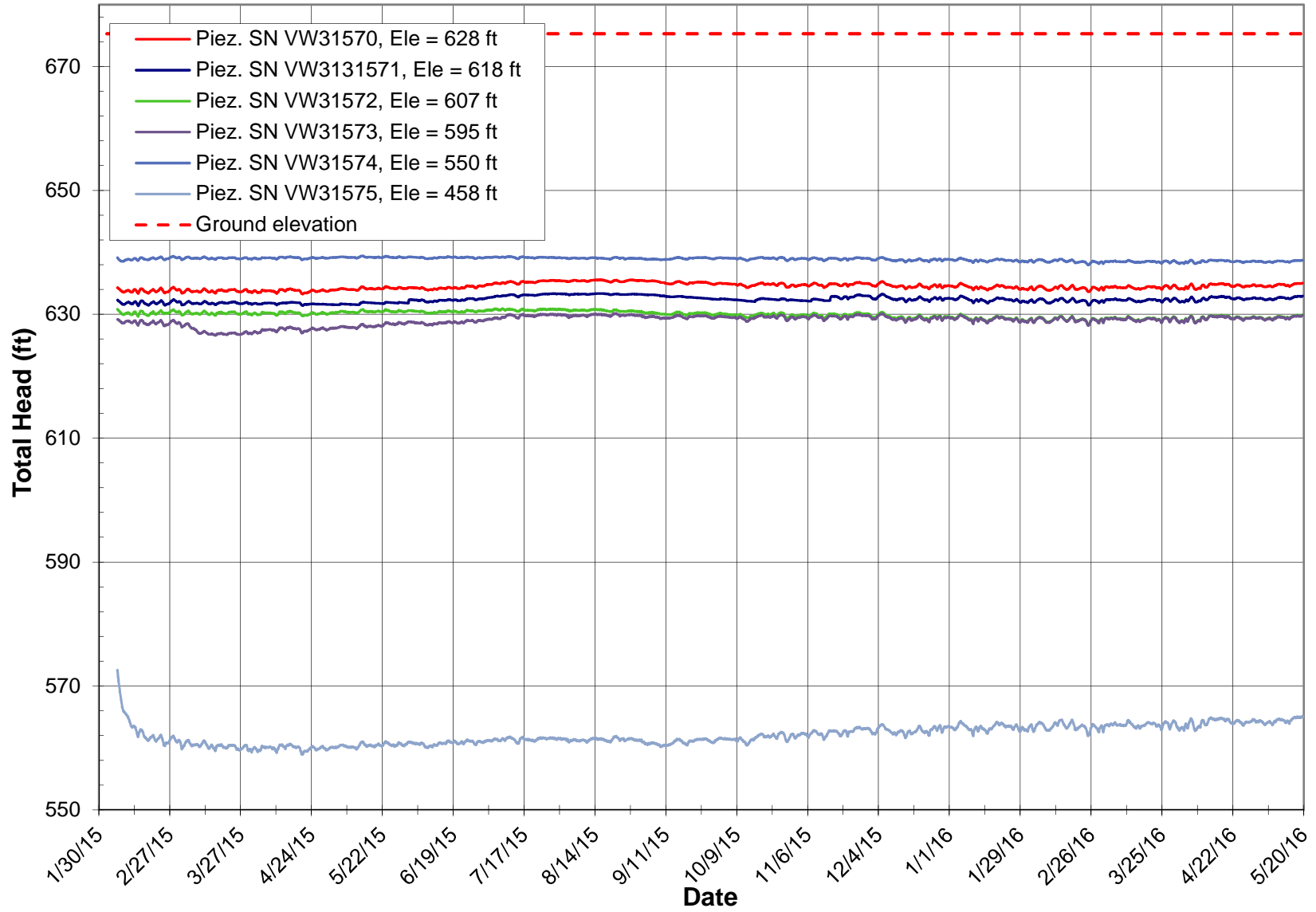
P-001-13 VW Piezometer Readings

Ground surface elevation = 666.4 ft



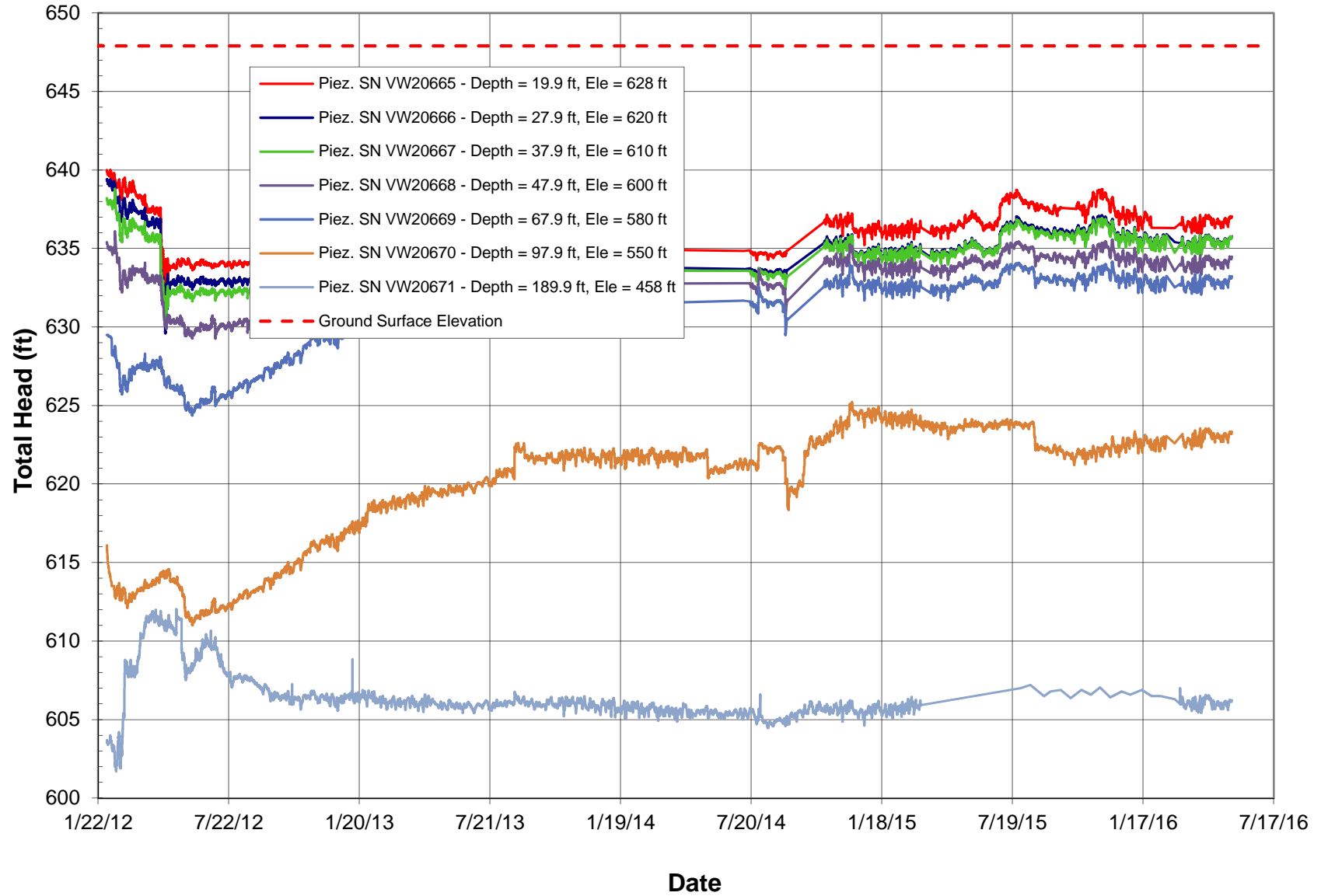
P-002-13 VW Piezometer Readings

Ground surface elevation = 675.29 ft



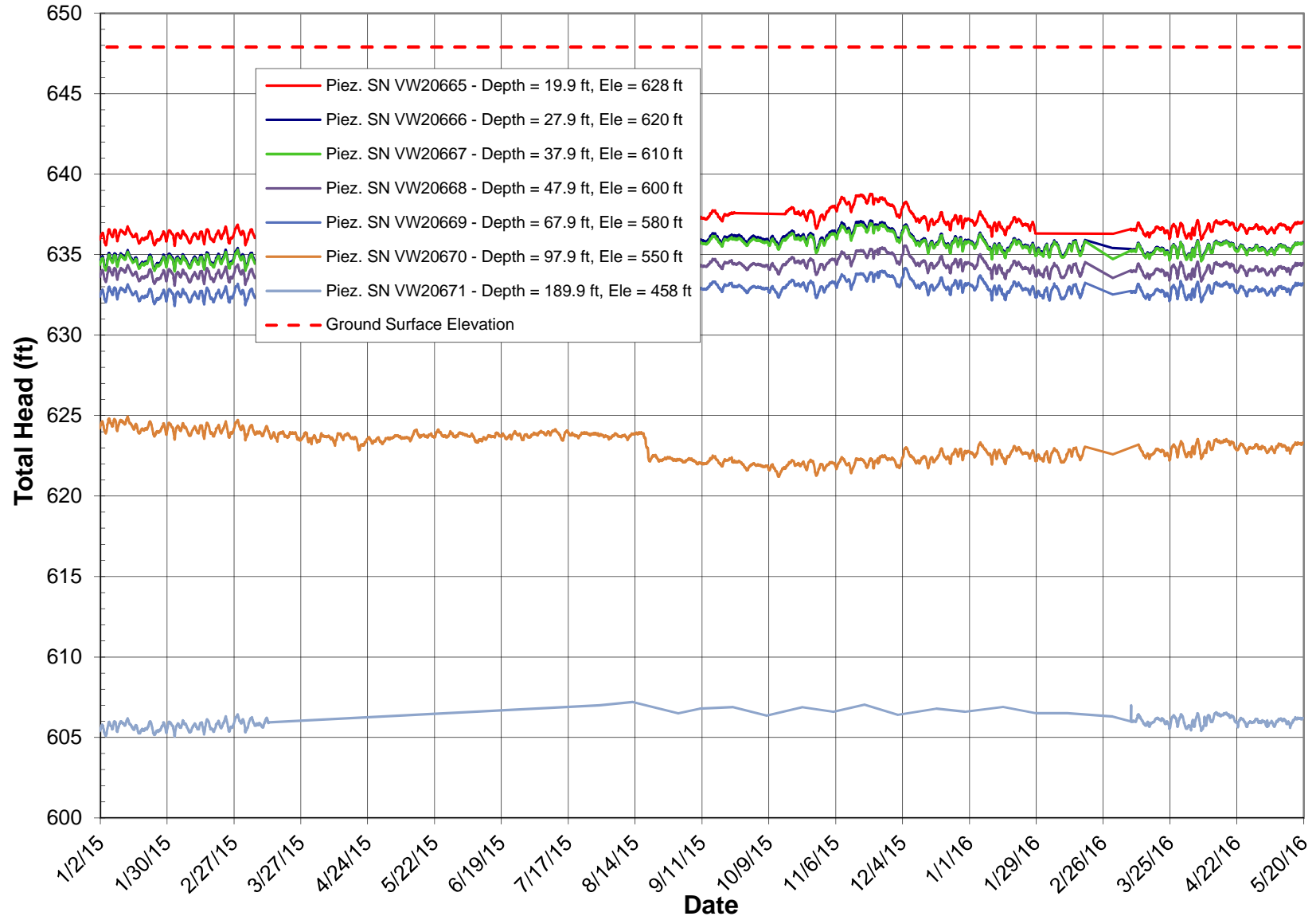
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



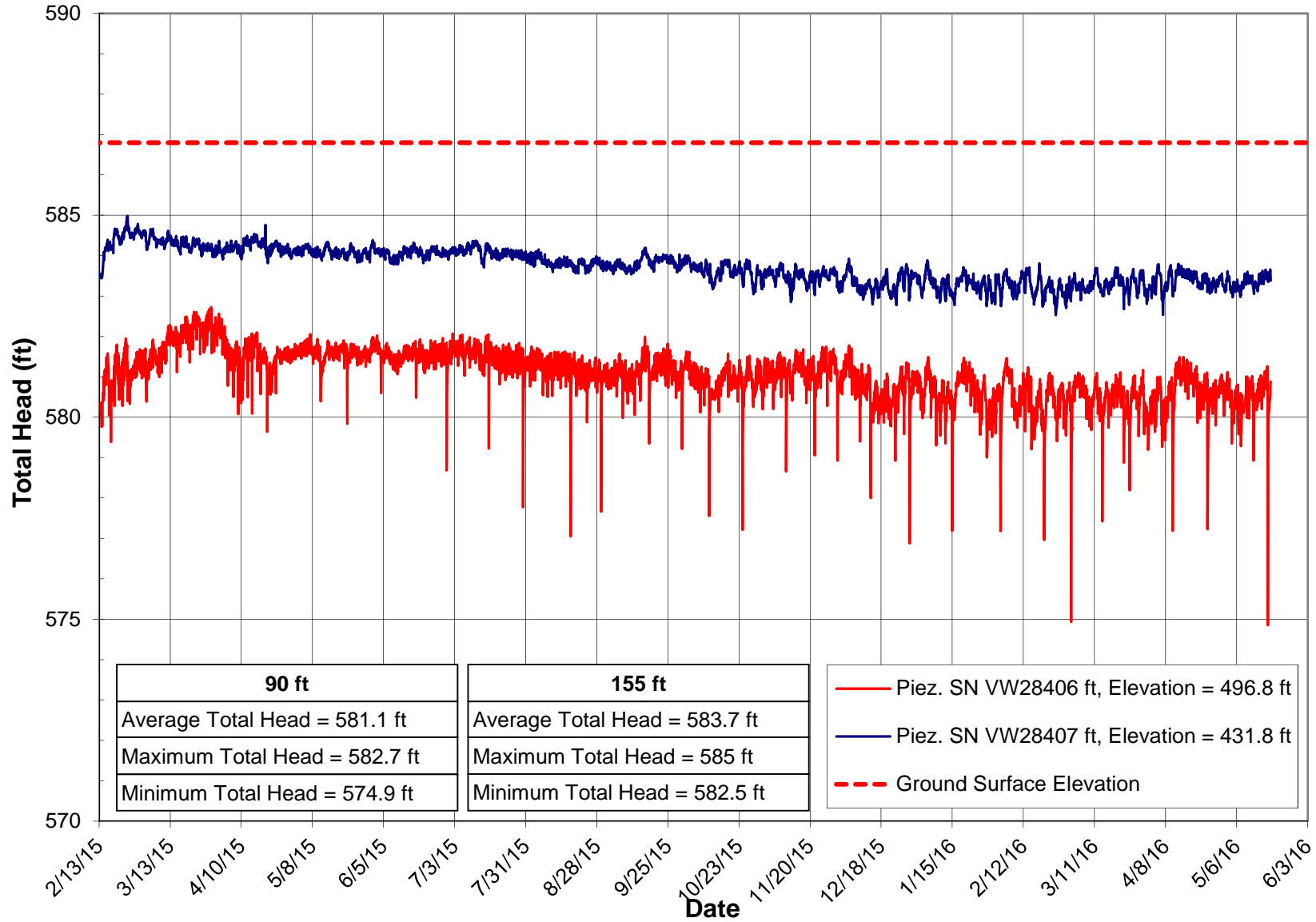
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



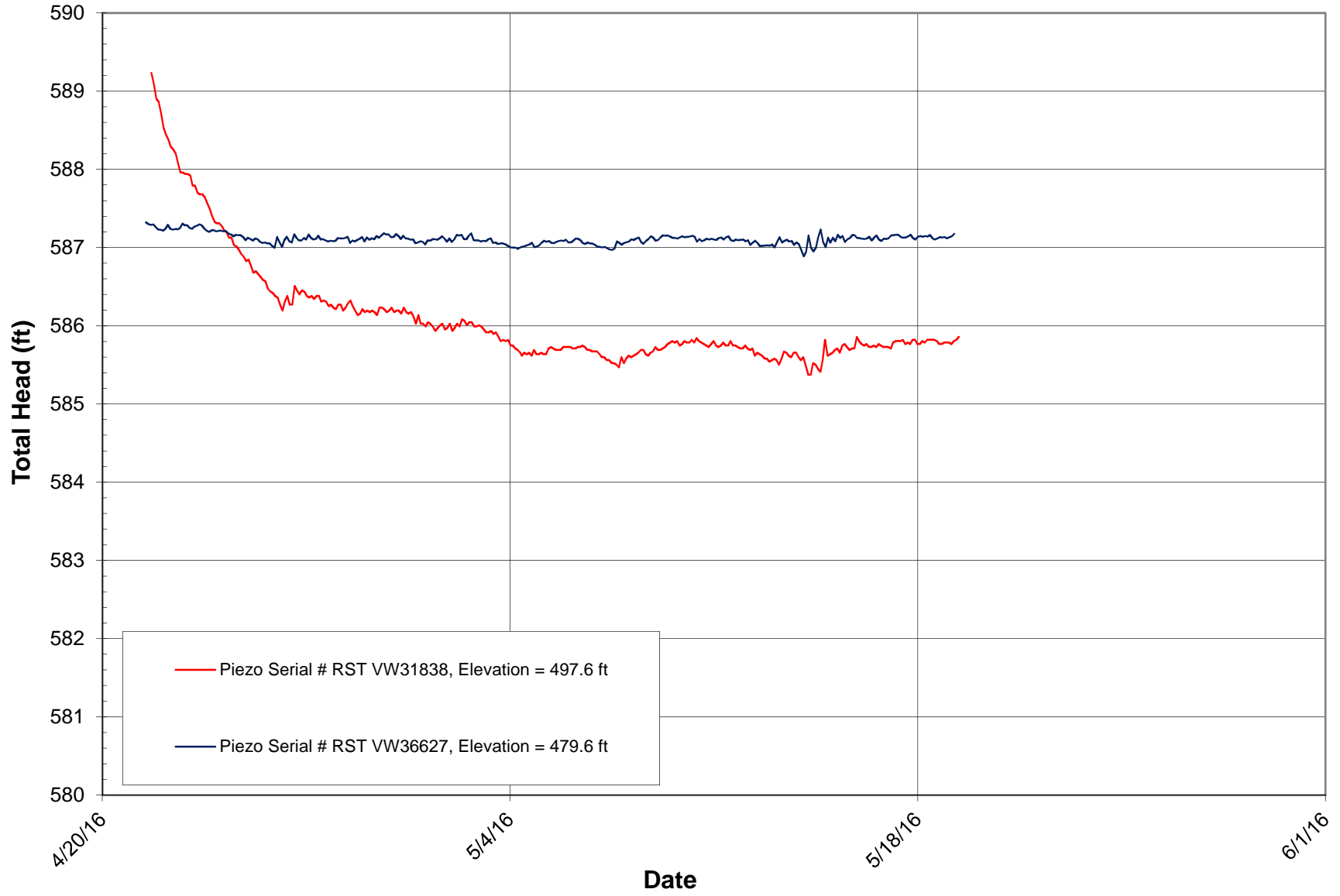
P-009-13 VW Piezometer Readings

Ground surface elevation = 586.6 ft



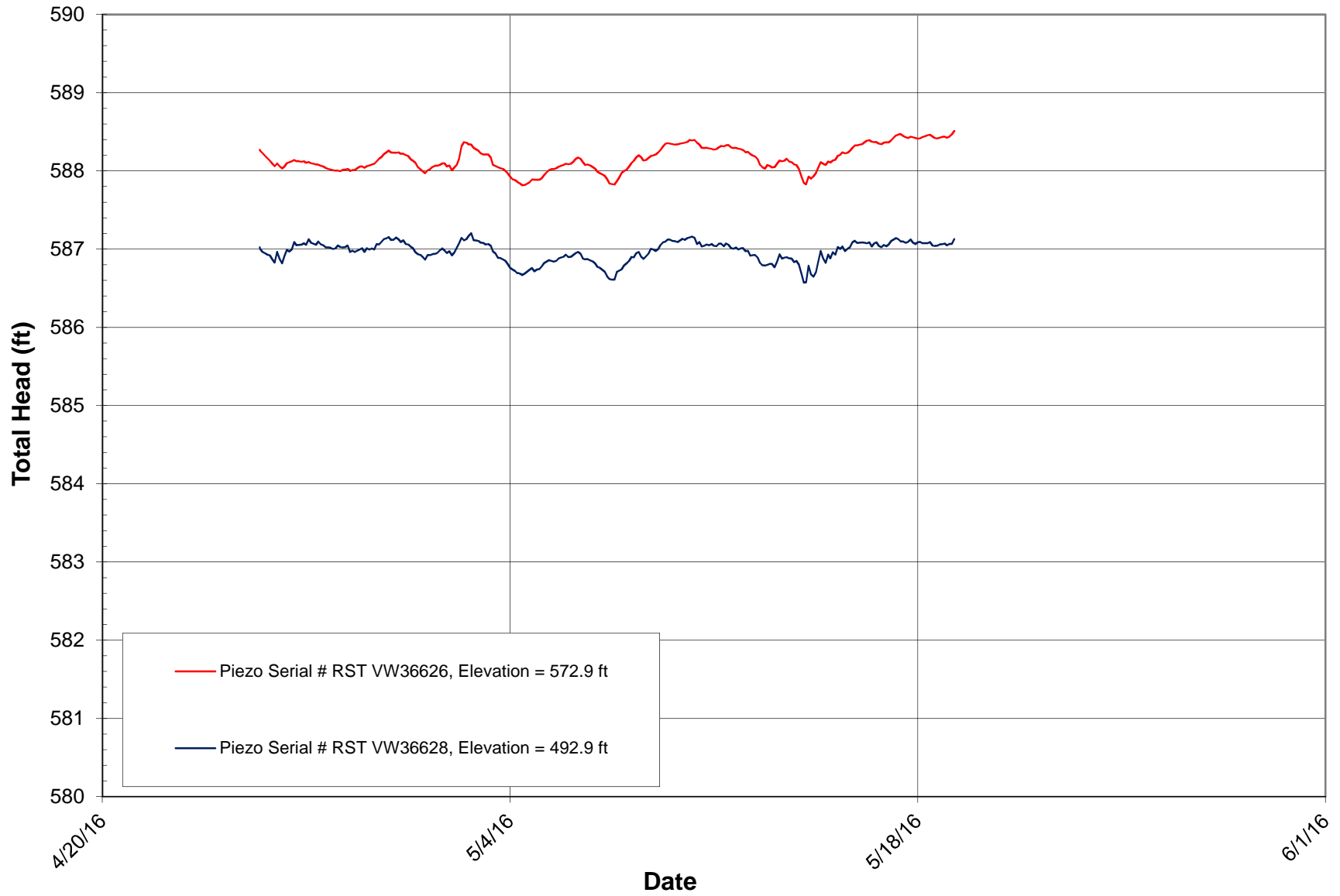
B-105A VW Piezometer Readings

Ground surface elevation = 585.6 ft



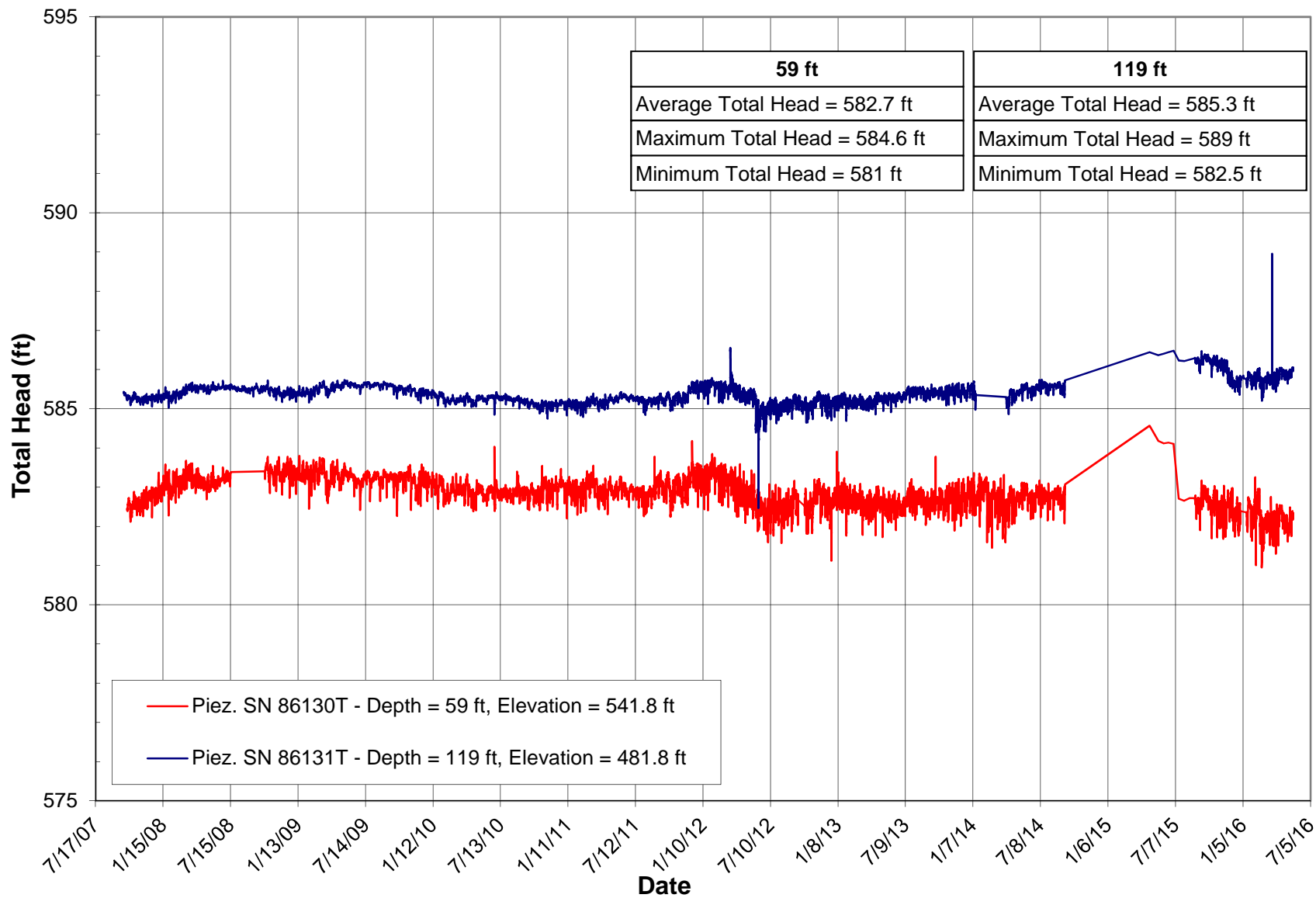
B-05-A-03 VW Piezometer Readings

Ground surface elevation = 599.9 ft



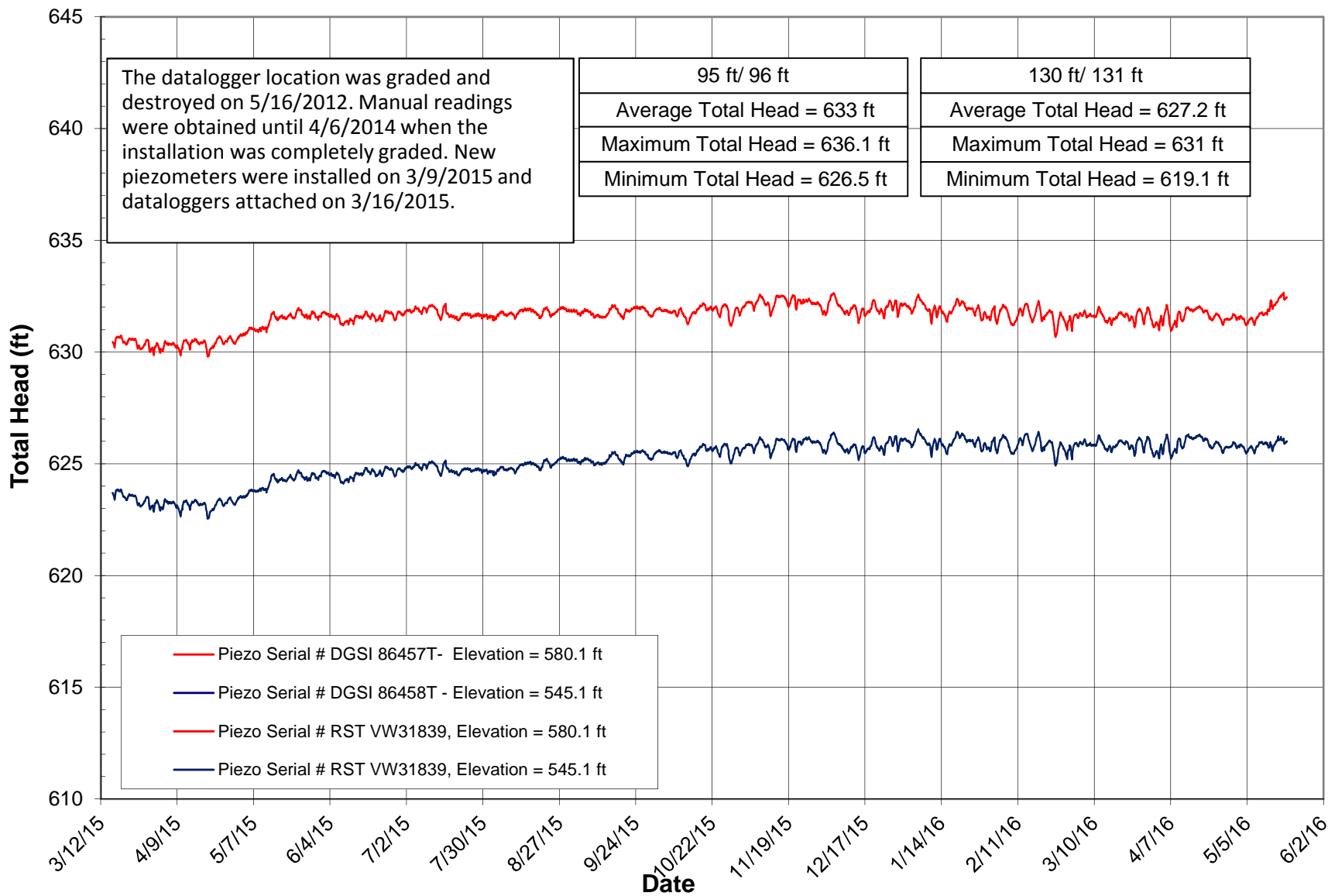
B-05-04 VW Piezometer Readings

Ground surface elevation = 600.8 ft



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

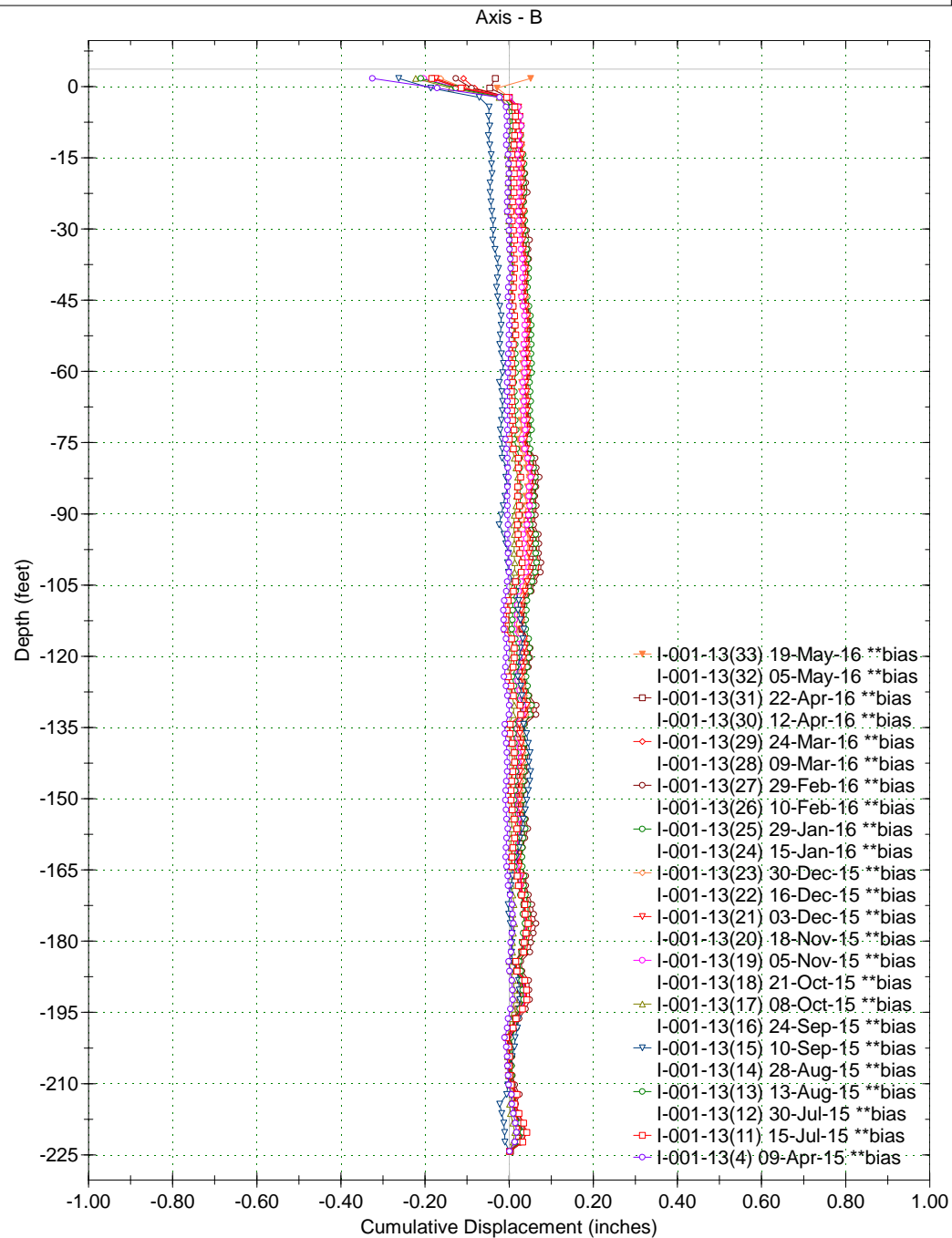
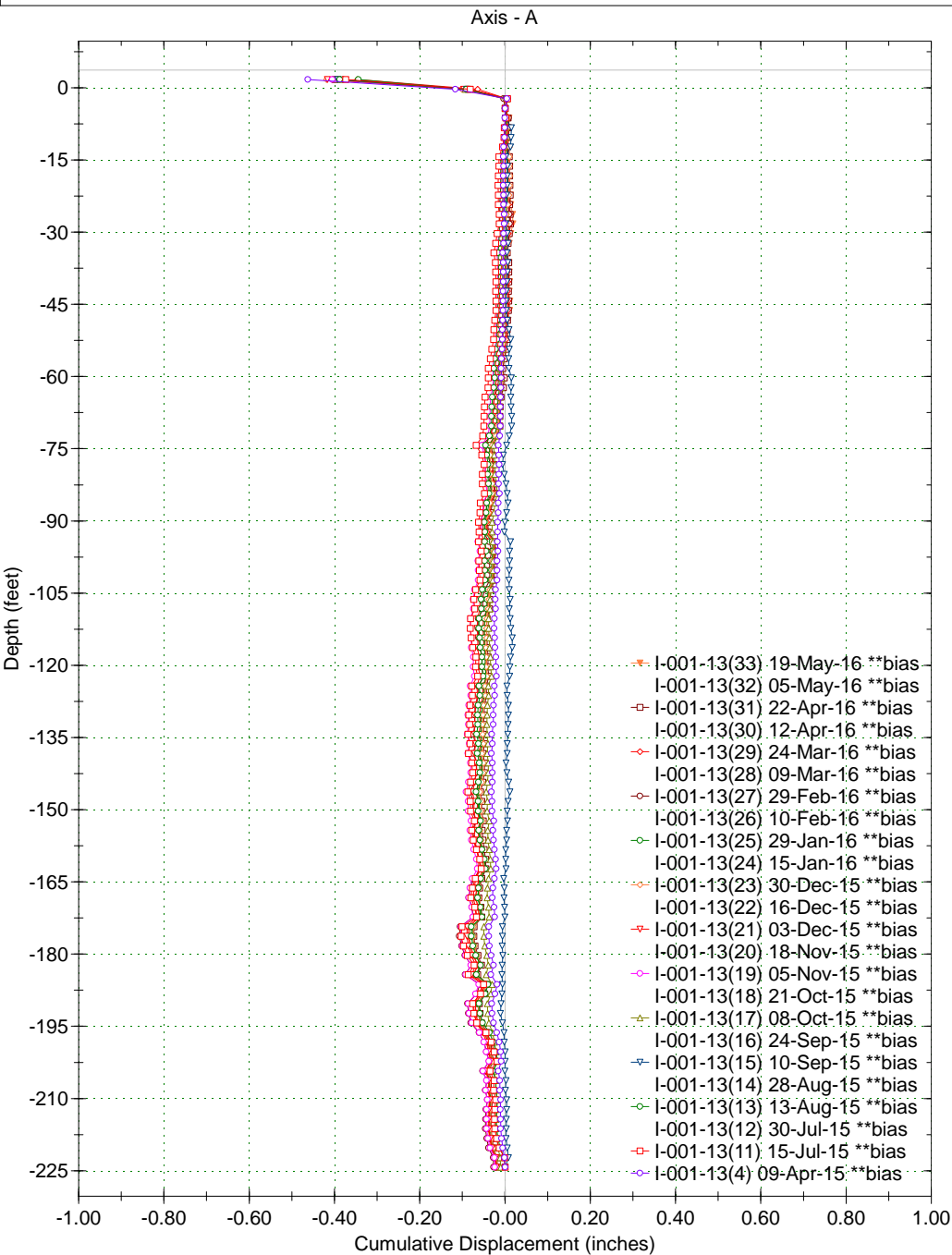
Ground surface elevation = 675.1 ft (B-05-11) / 676.1 ft (B-05-A-11)



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



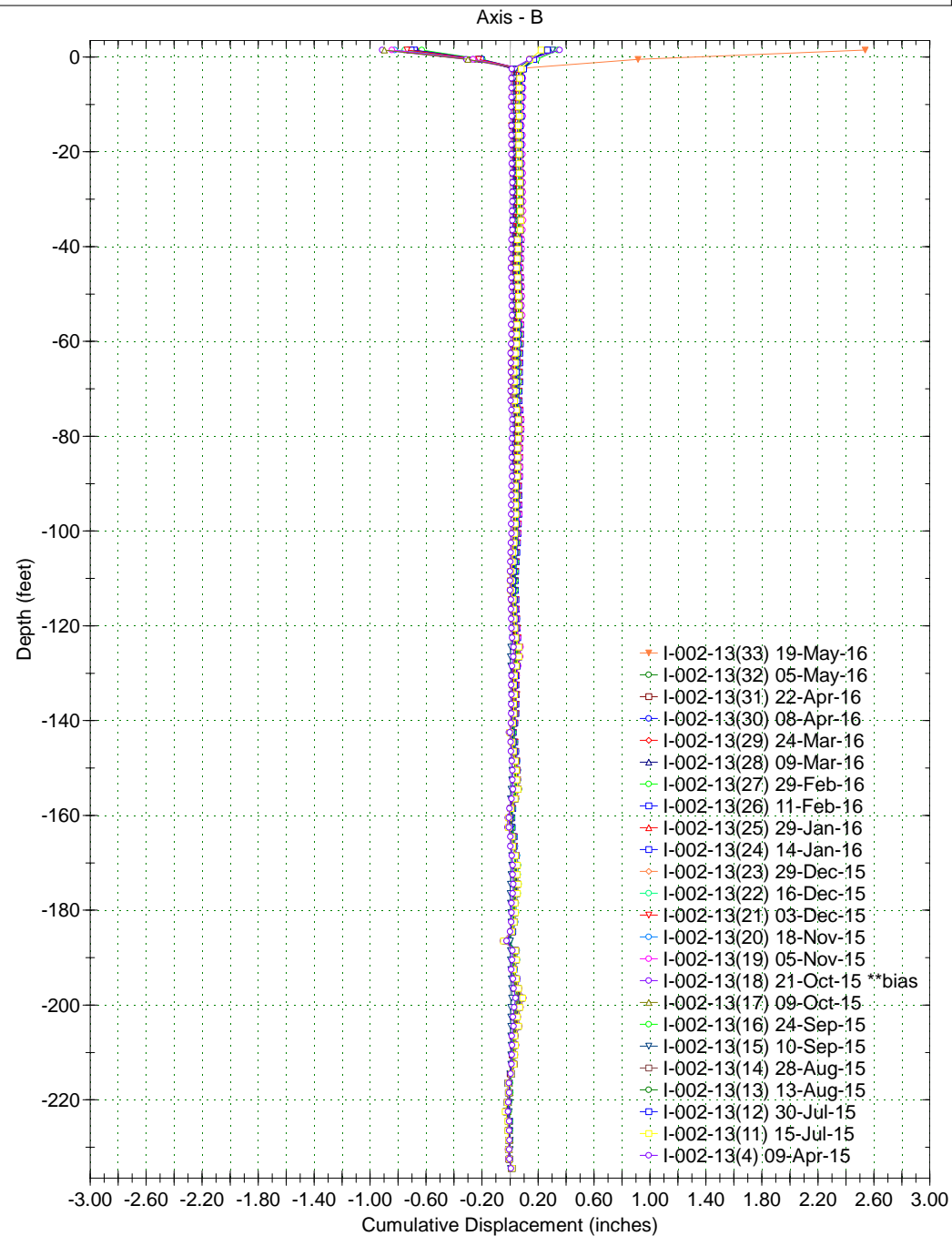
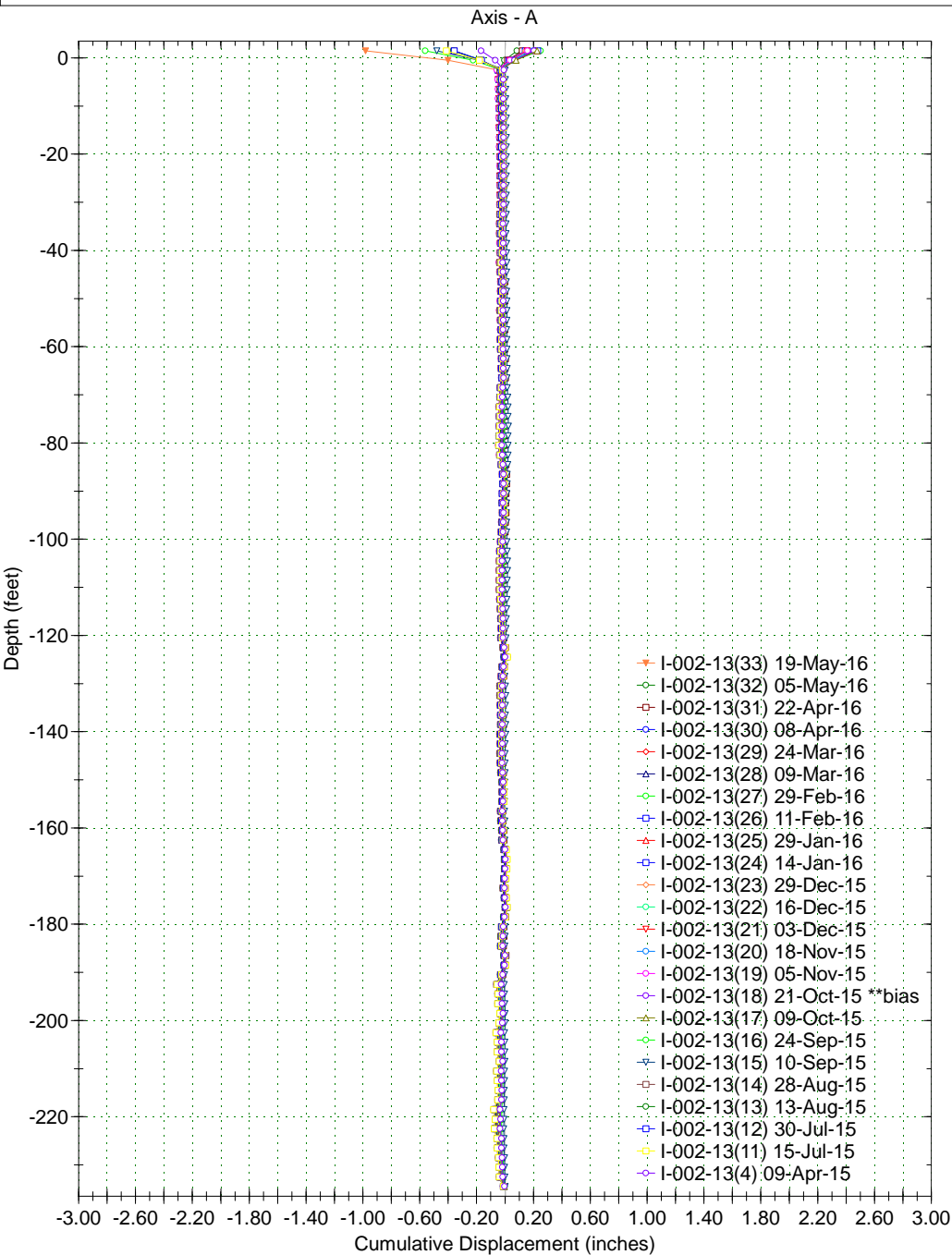
Spiral Correction : N/A
Collar Elevation : 3.7 feet
Borehole Total Depth : 228.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 11:14
Applied Azimuth : 0.0 degrees



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



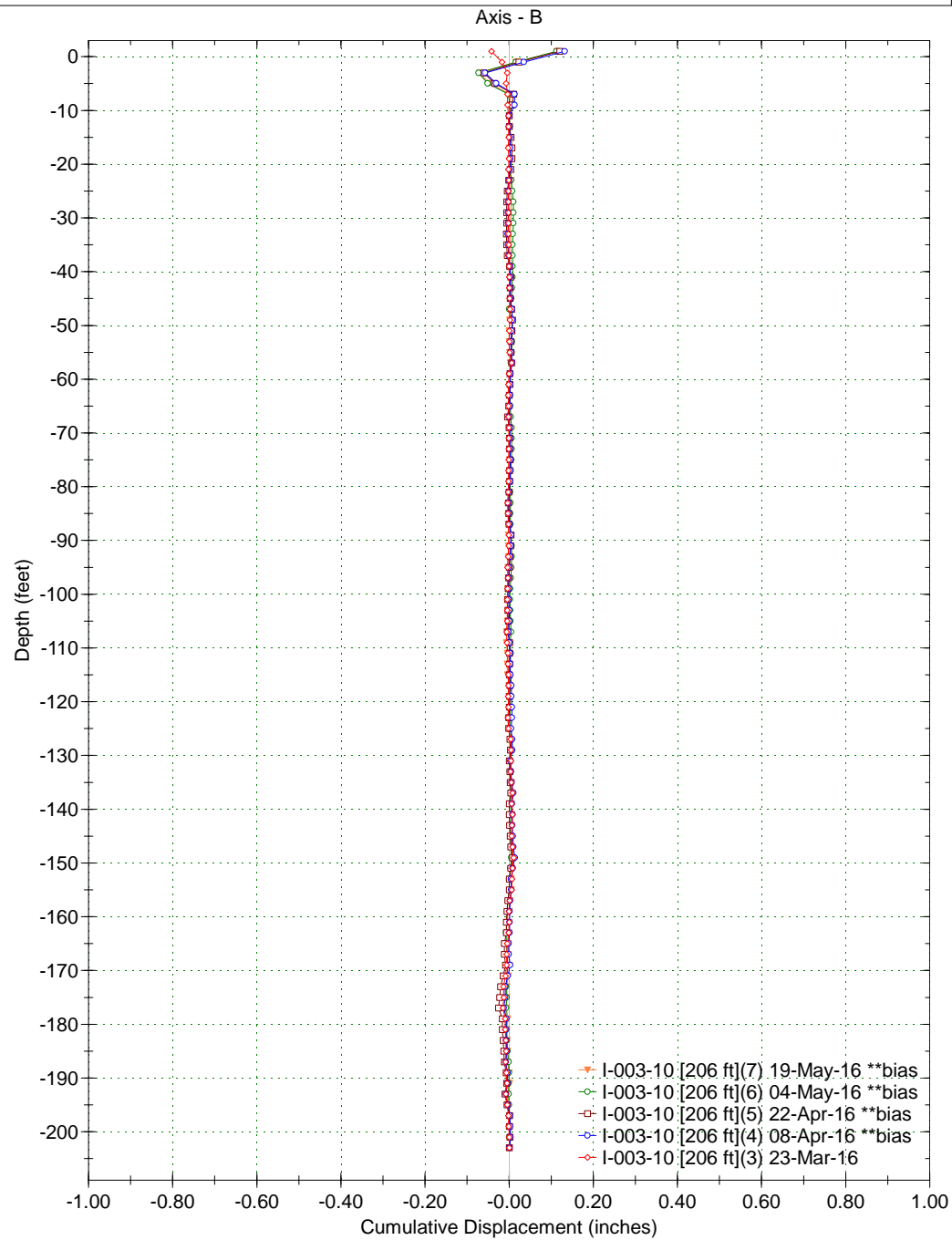
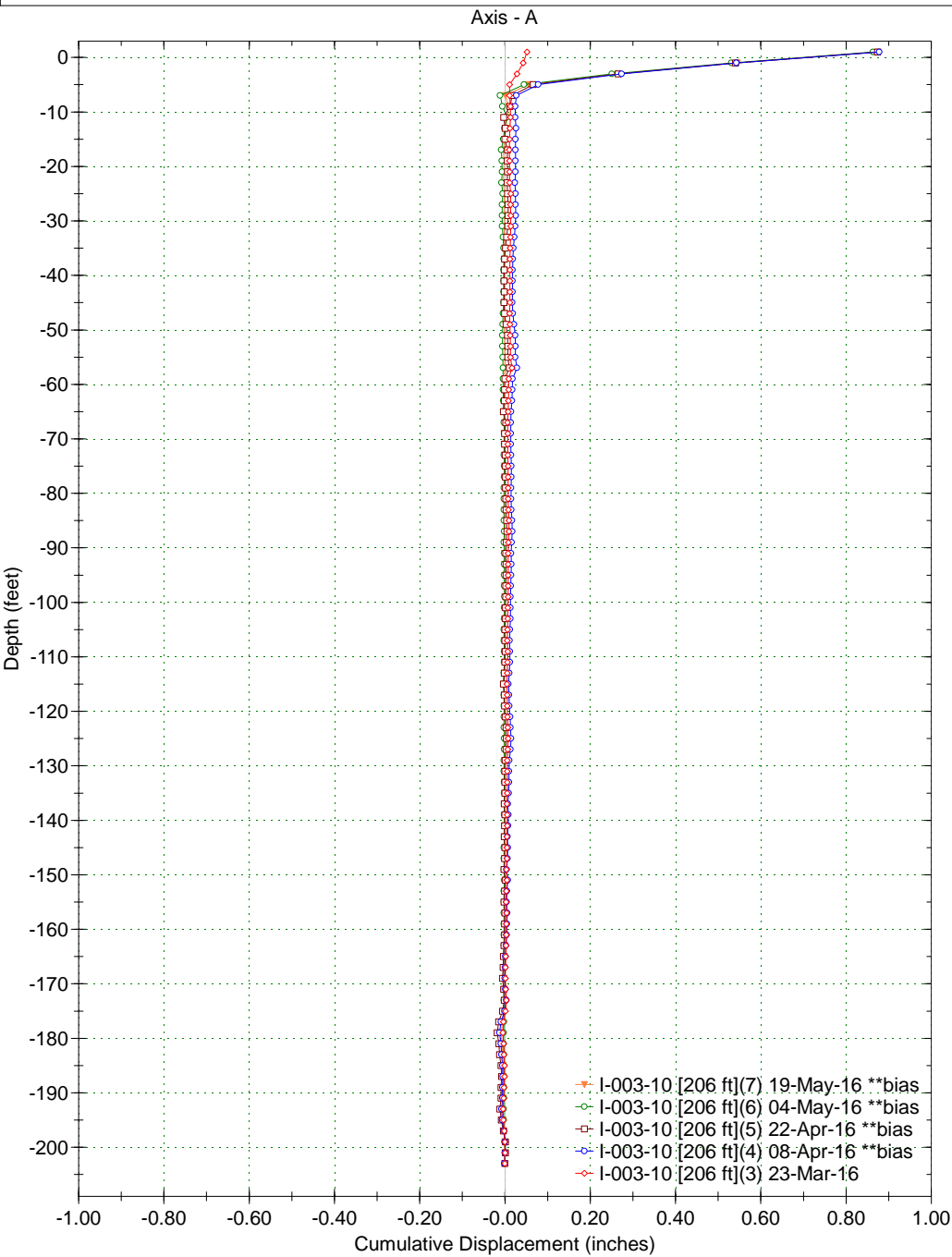
Spiral Correction : N/A
Collar Elevation : 3.5 feet
Borehole Total Depth : 238.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 10:04
Applied Azimuth : 0.0 degrees



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



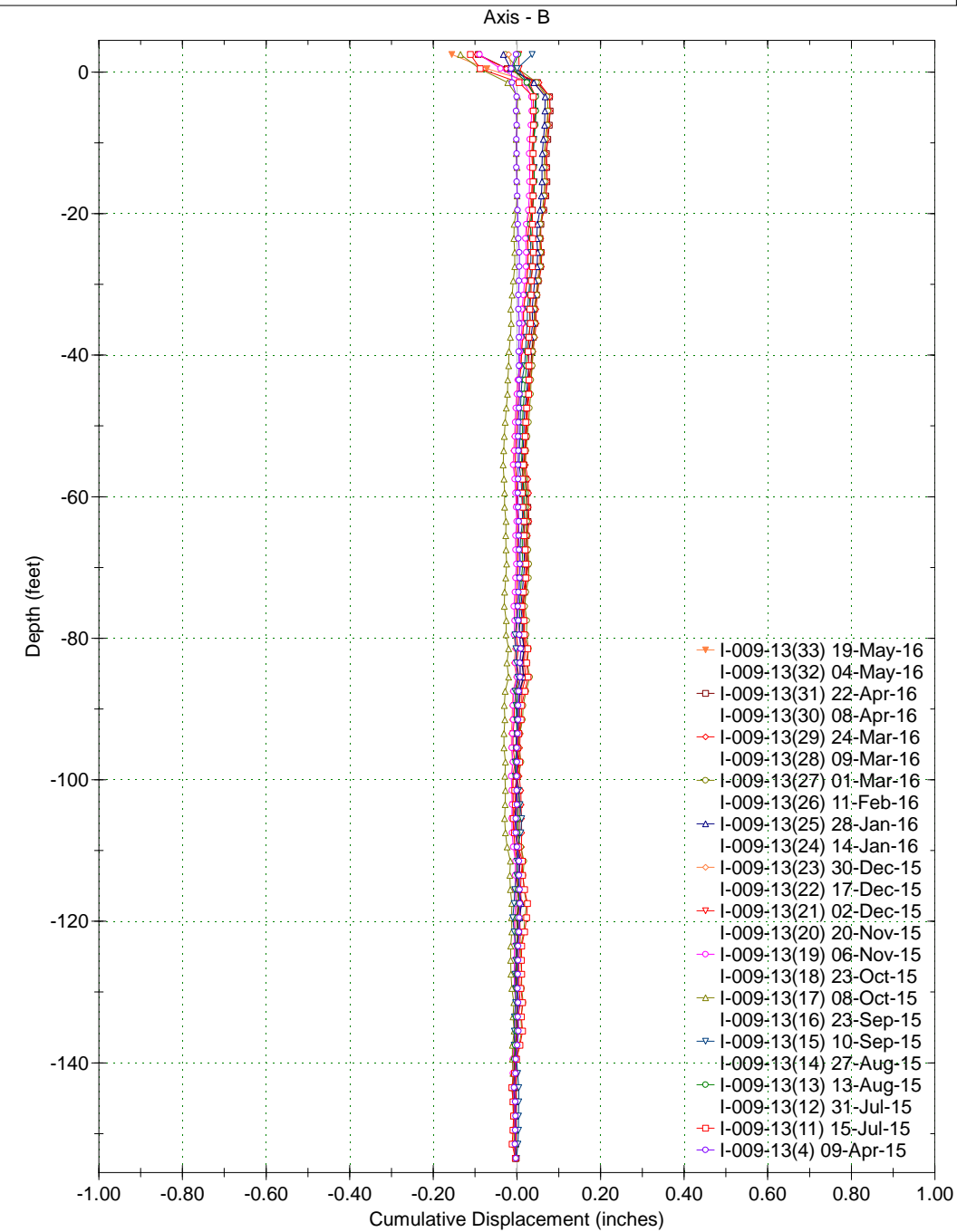
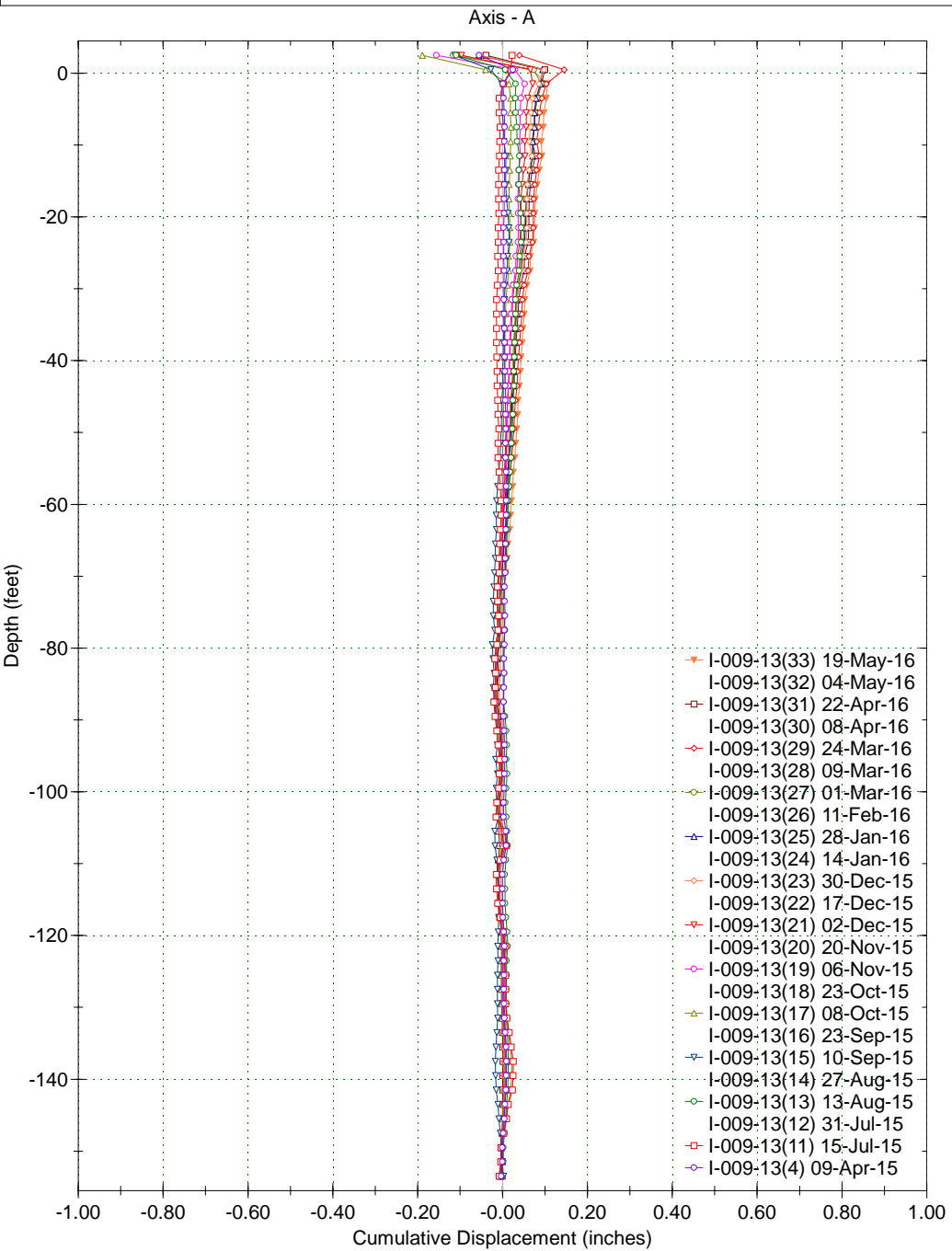
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 206.0 feet
A+ Groove Azimuth :
Base Reading : 2016 Mar 08 15:42
Applied Azimuth : 0.0 degrees



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



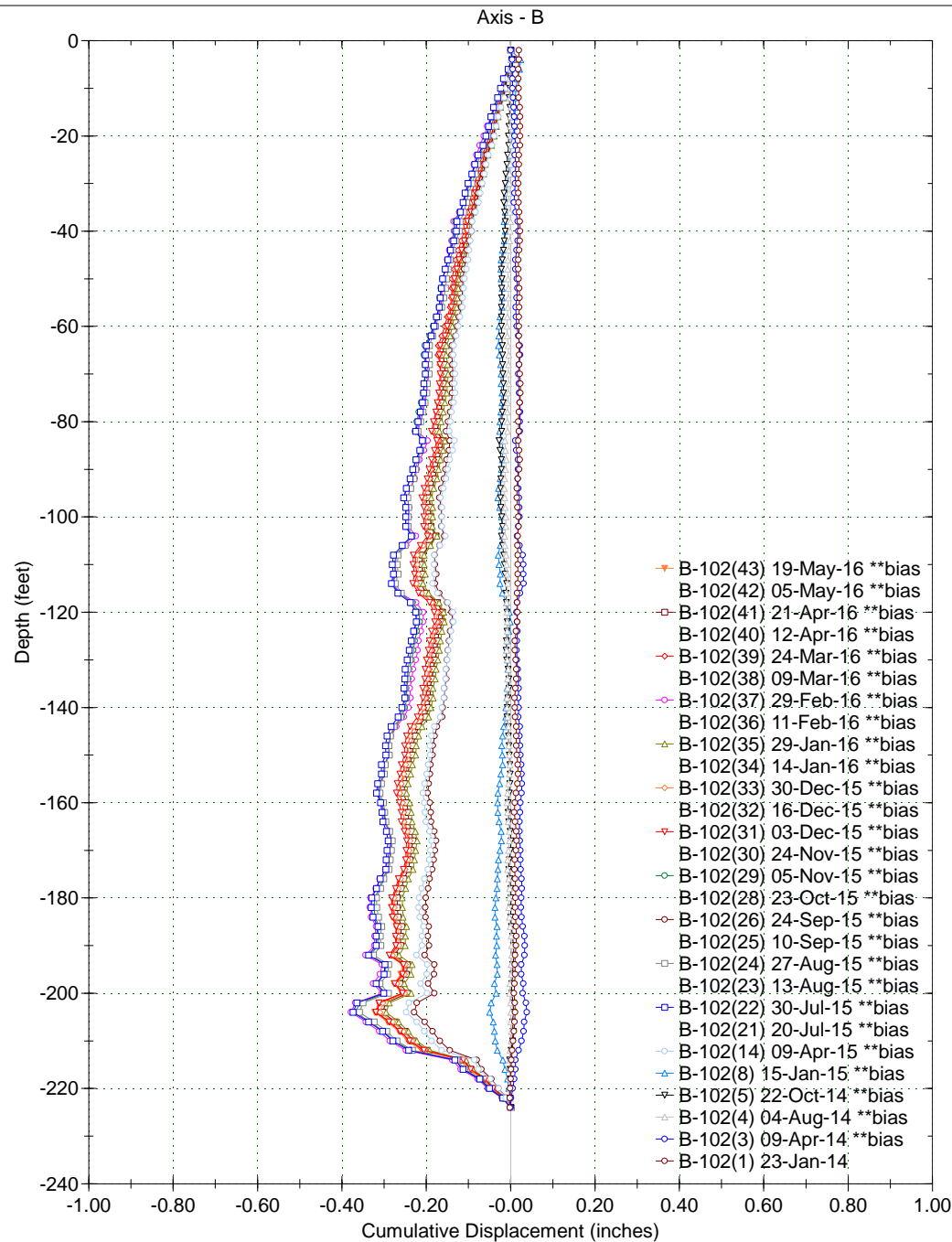
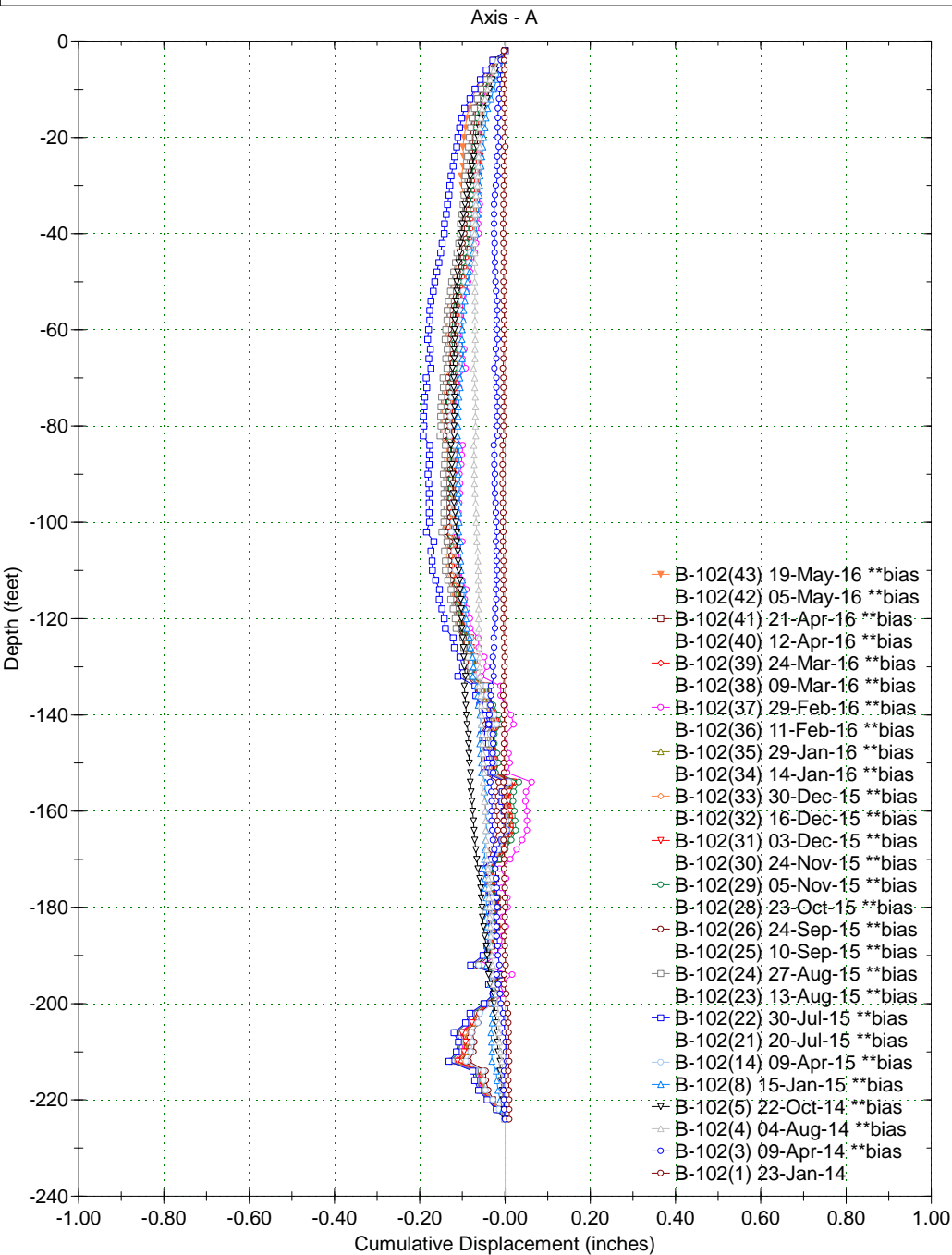
Spiral Correction : N/A
Collar Elevation : 4.5 feet
Borehole Total Depth : 158.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 18 15:56
Applied Azimuth : 0.0 degrees



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



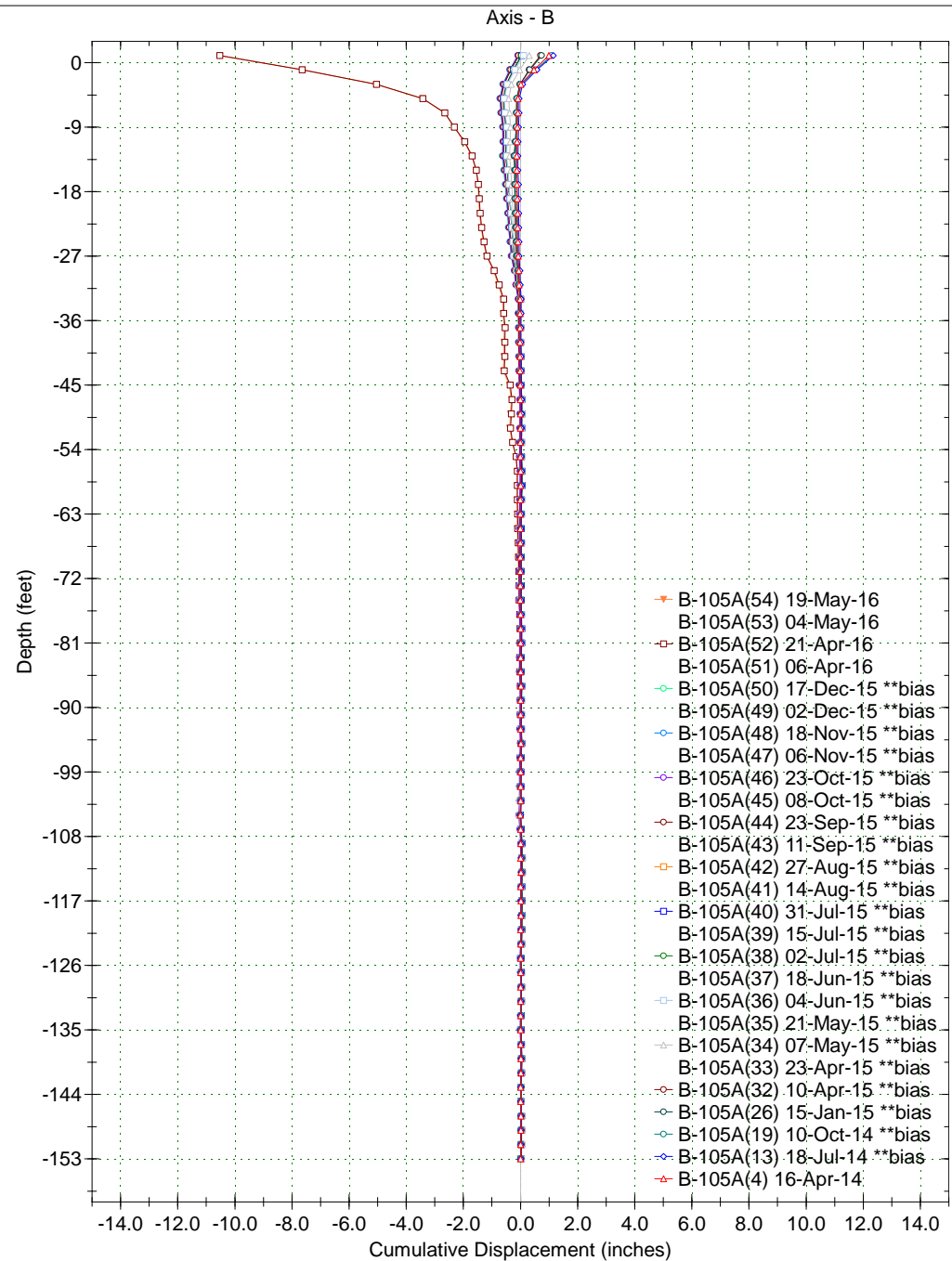
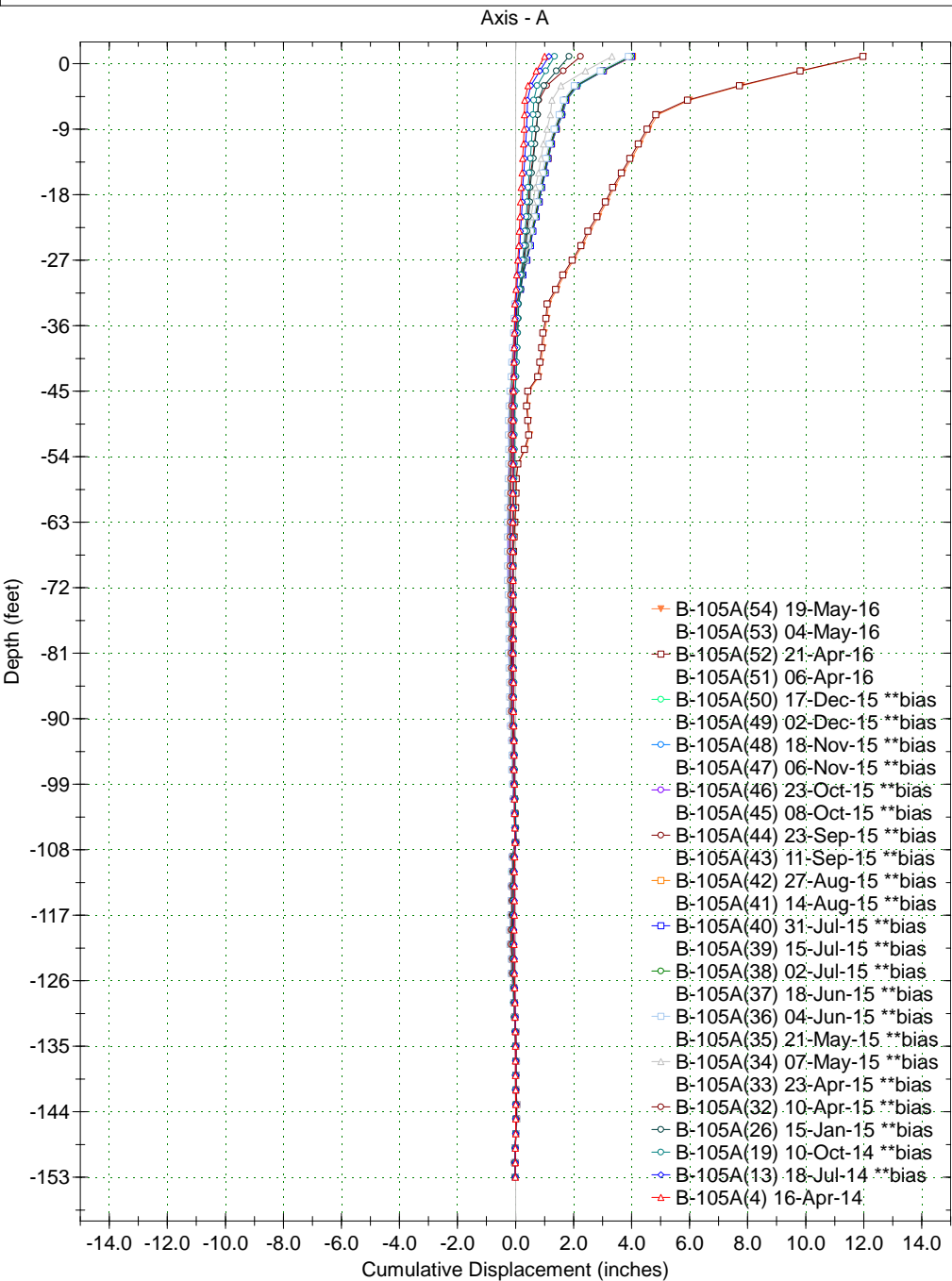
Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 224.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 23 08:21
 Applied Azimuth : 0.0 degrees



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

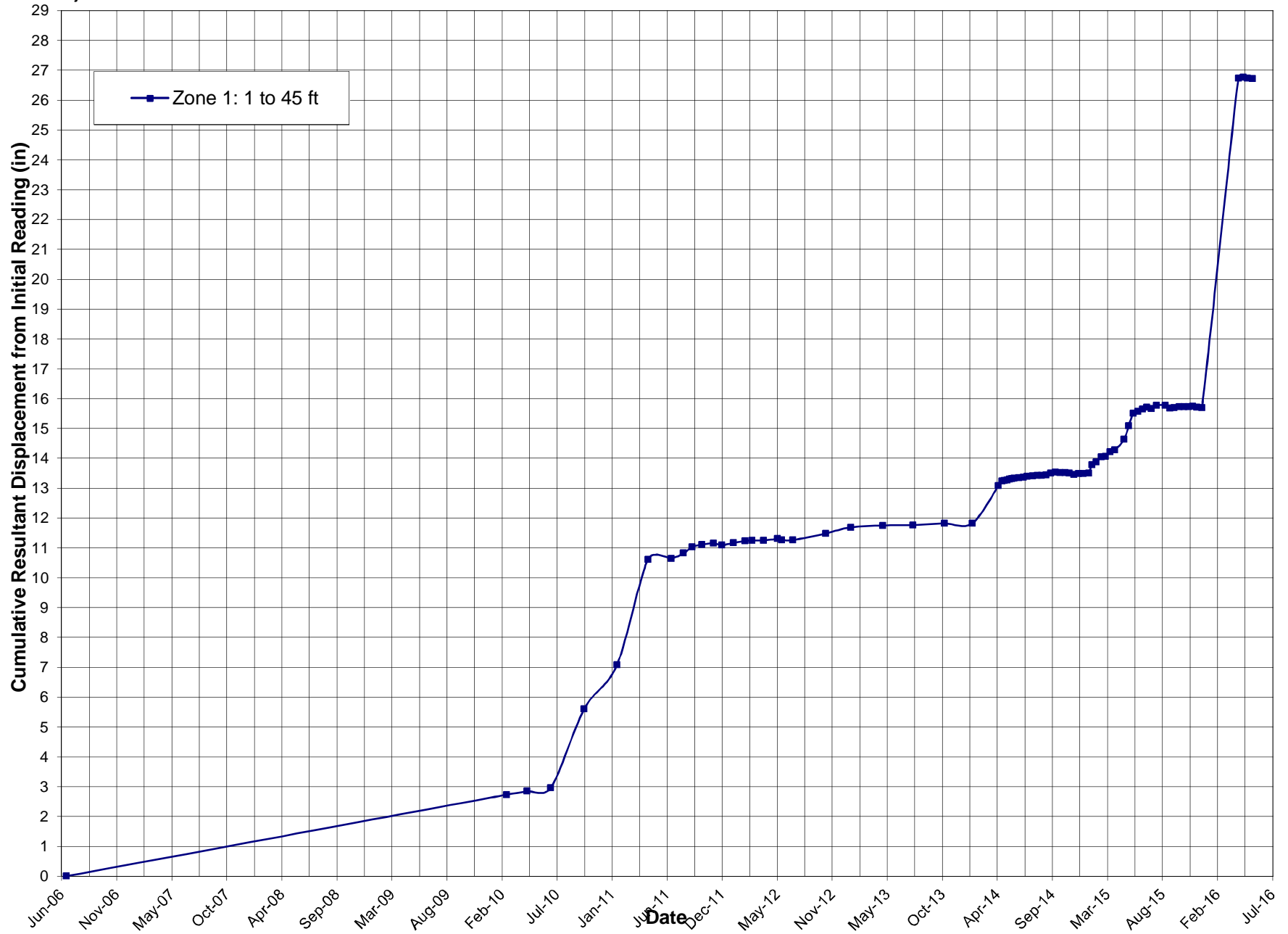


Spiral Correction : N/A
 Collar Elevation : 3.0 feet
 Borehole Total Depth : 156.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 15 09:19
 Applied Azimuth : 0.0 degrees



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

B-105A

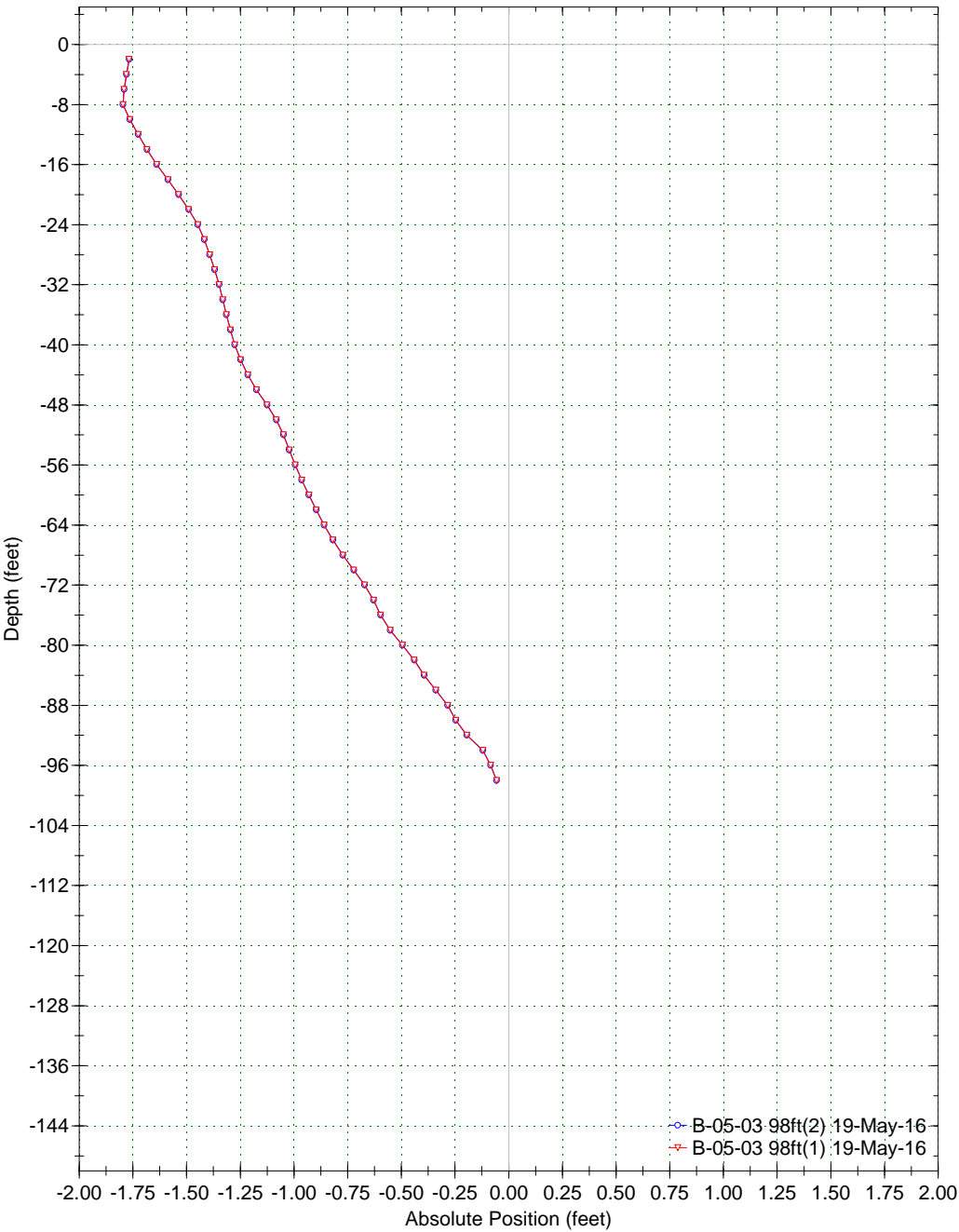


Borehole : B-05-A-03 [98 ft]
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :

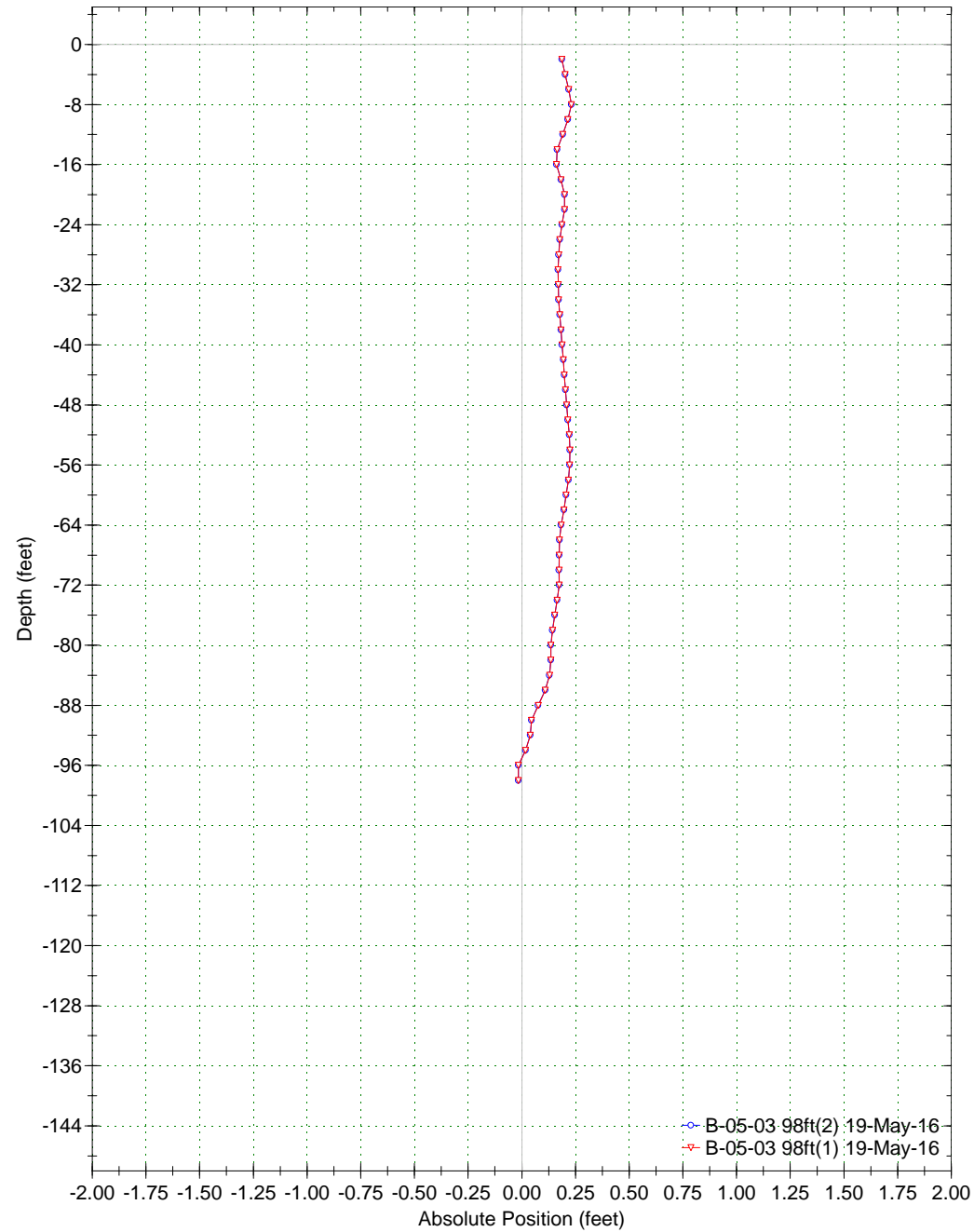


Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 98.0 feet
A+ Groove Azimuth :
Base Reading : 2016 May 19 17:14
Applied Azimuth : 0.0 degrees

Axis - A



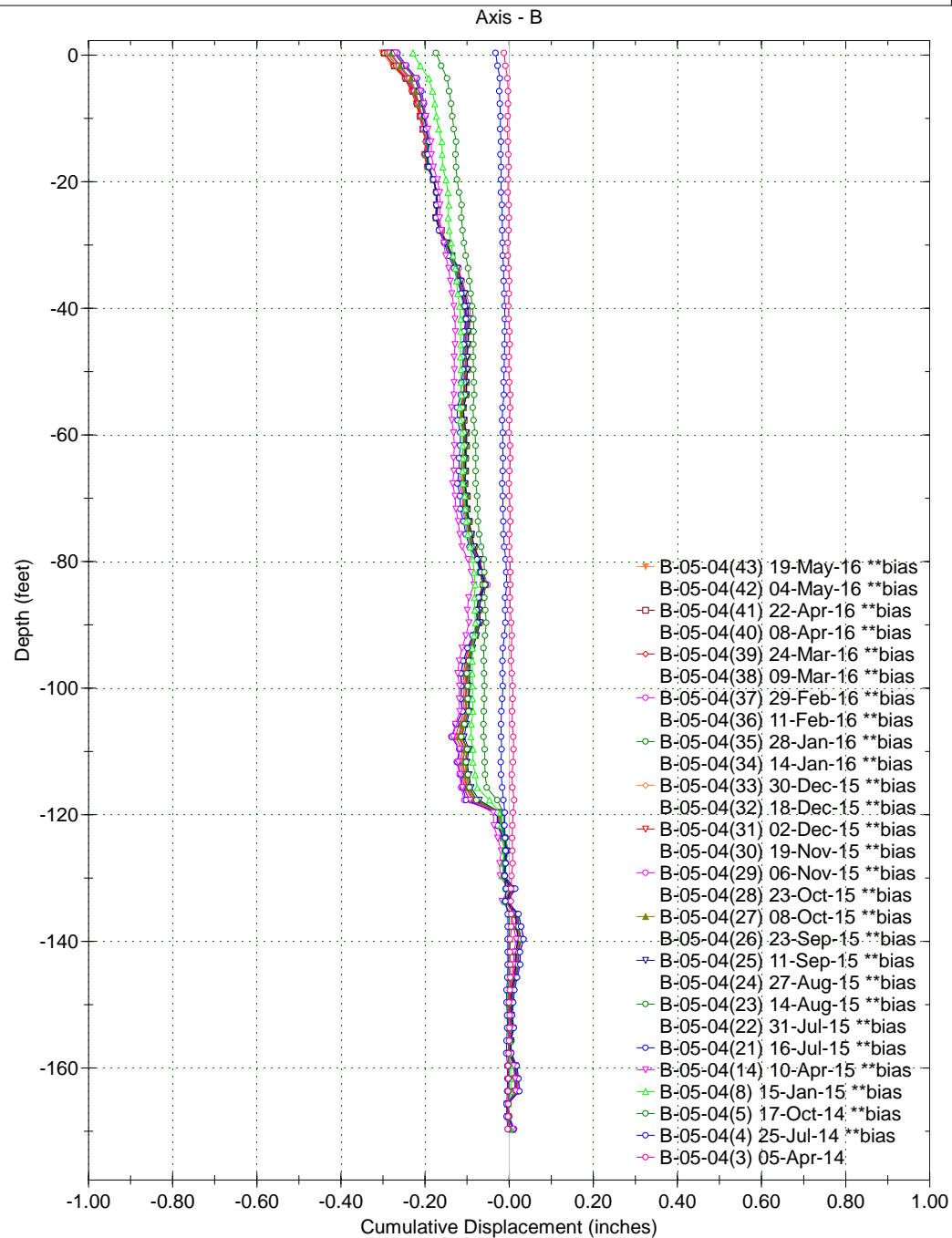
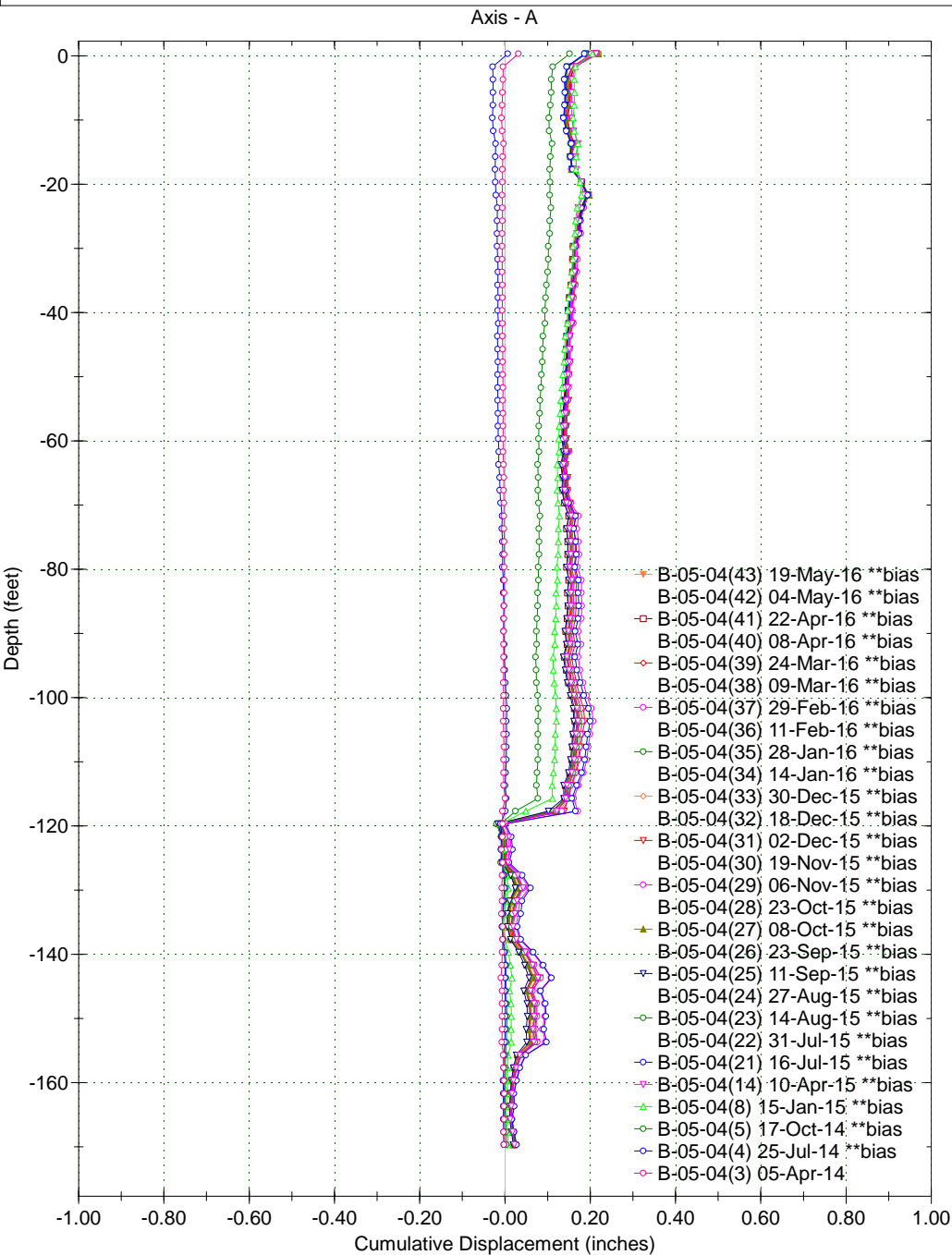
Axis - B



Borehole : B-05-04
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : Sta. 133+51.67
 Easting : 242.09' Rt of CL
 Collar :

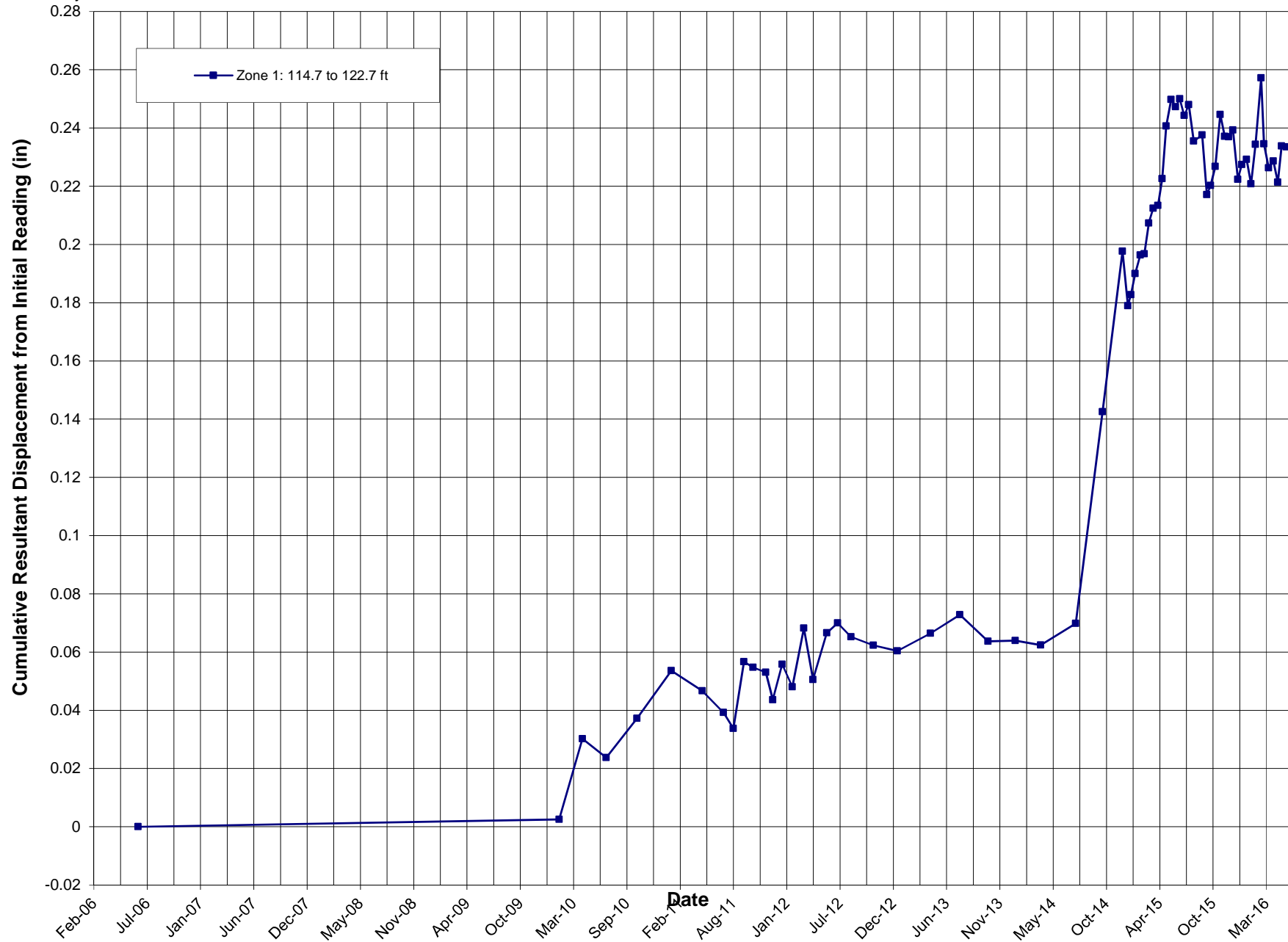


Spiral Correction : N/A
 Collar Elevation : 2.3 feet
 Borehole Total Depth : 172.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 22 12:30
 Applied Azimuth : 0.0 degrees



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

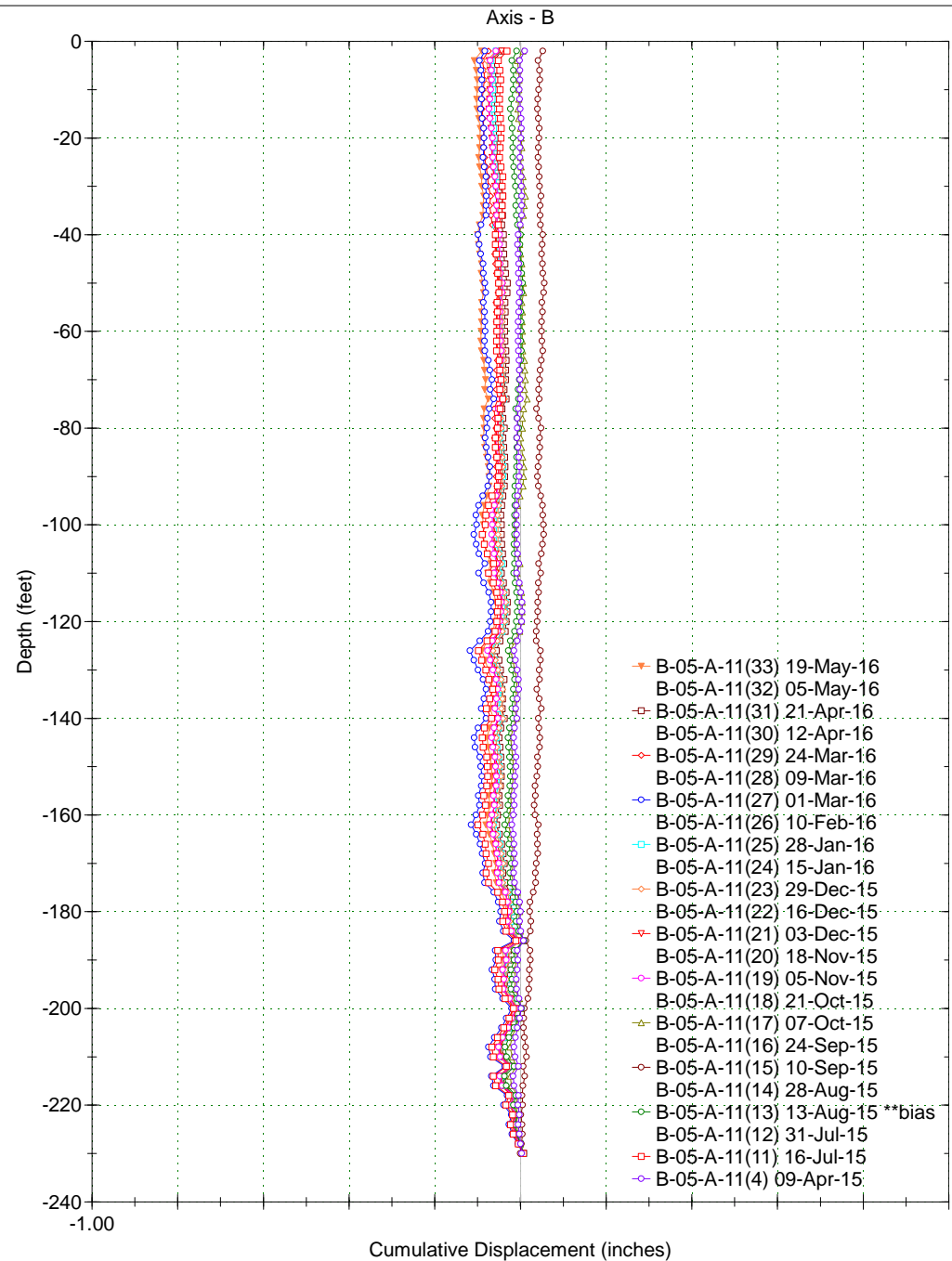
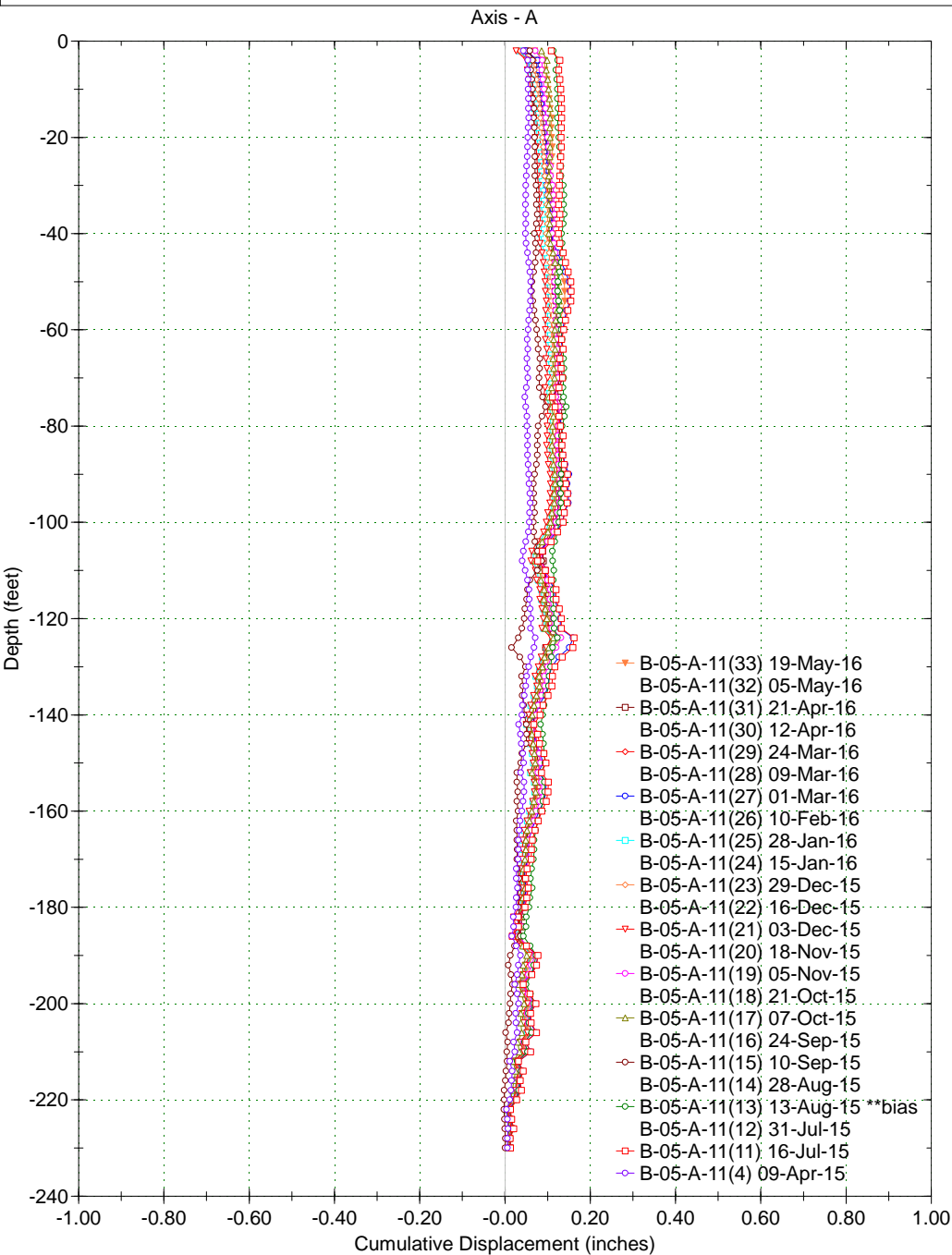
B-05-04



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



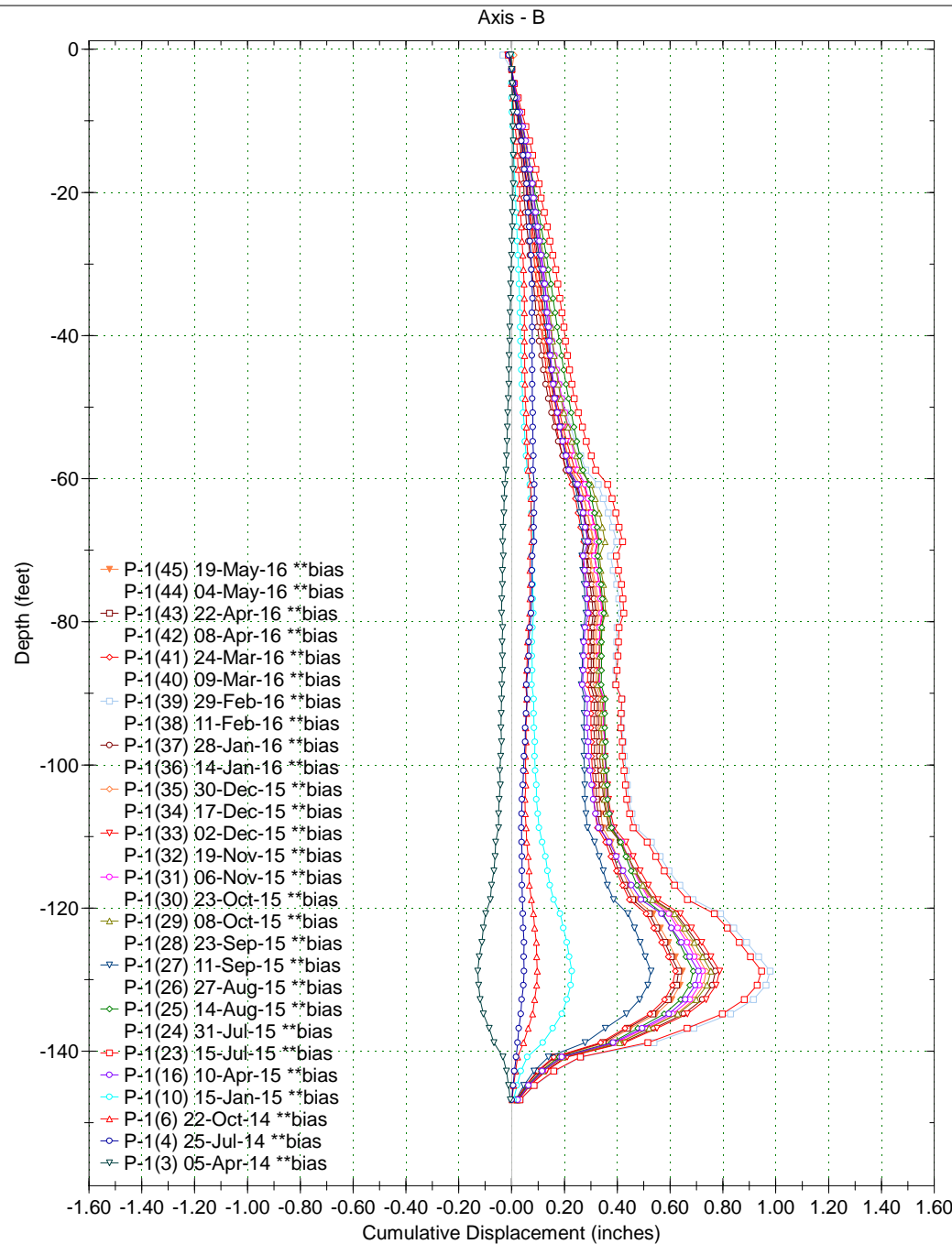
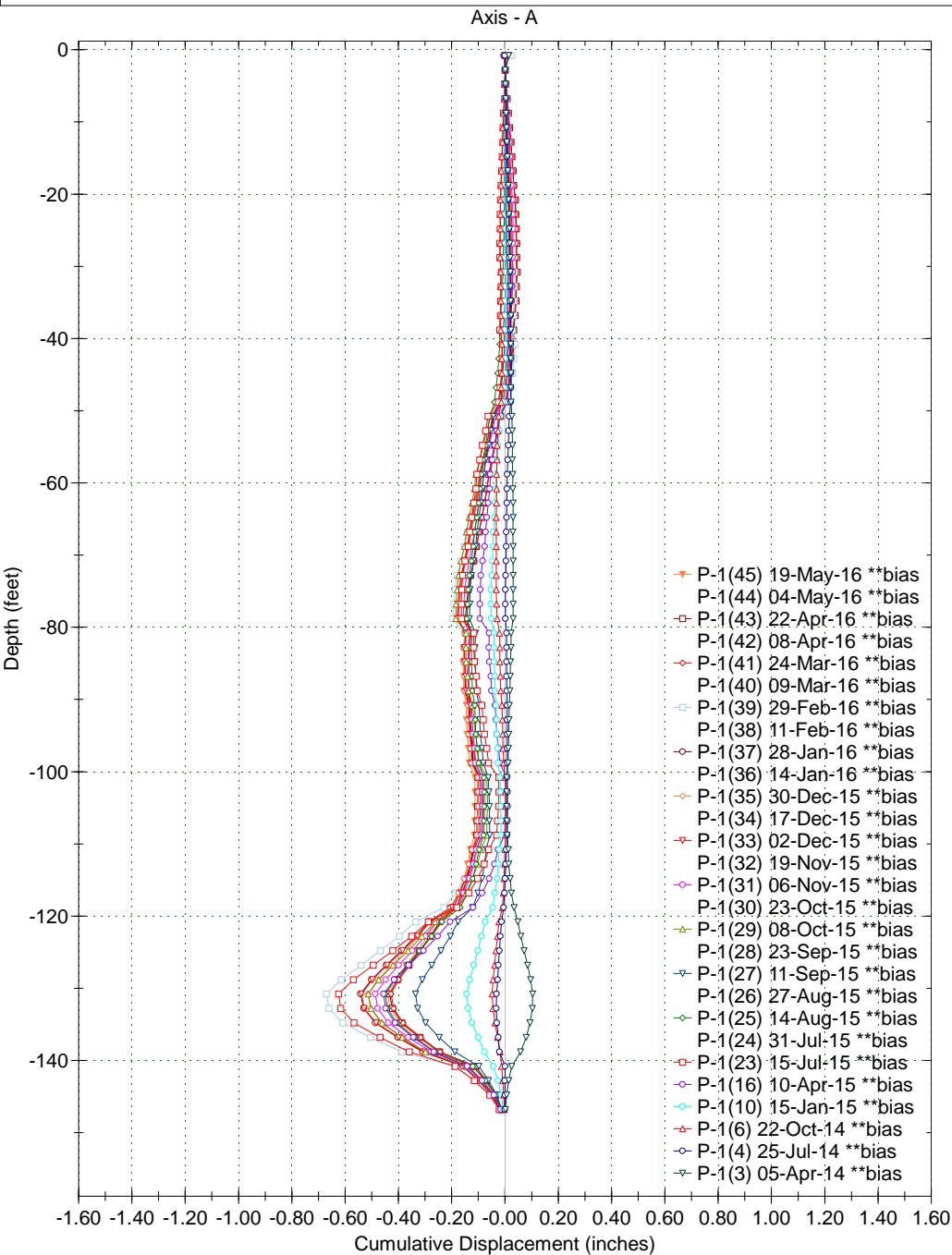
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 230.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 19 09:08
Applied Azimuth : 0.0 degrees



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

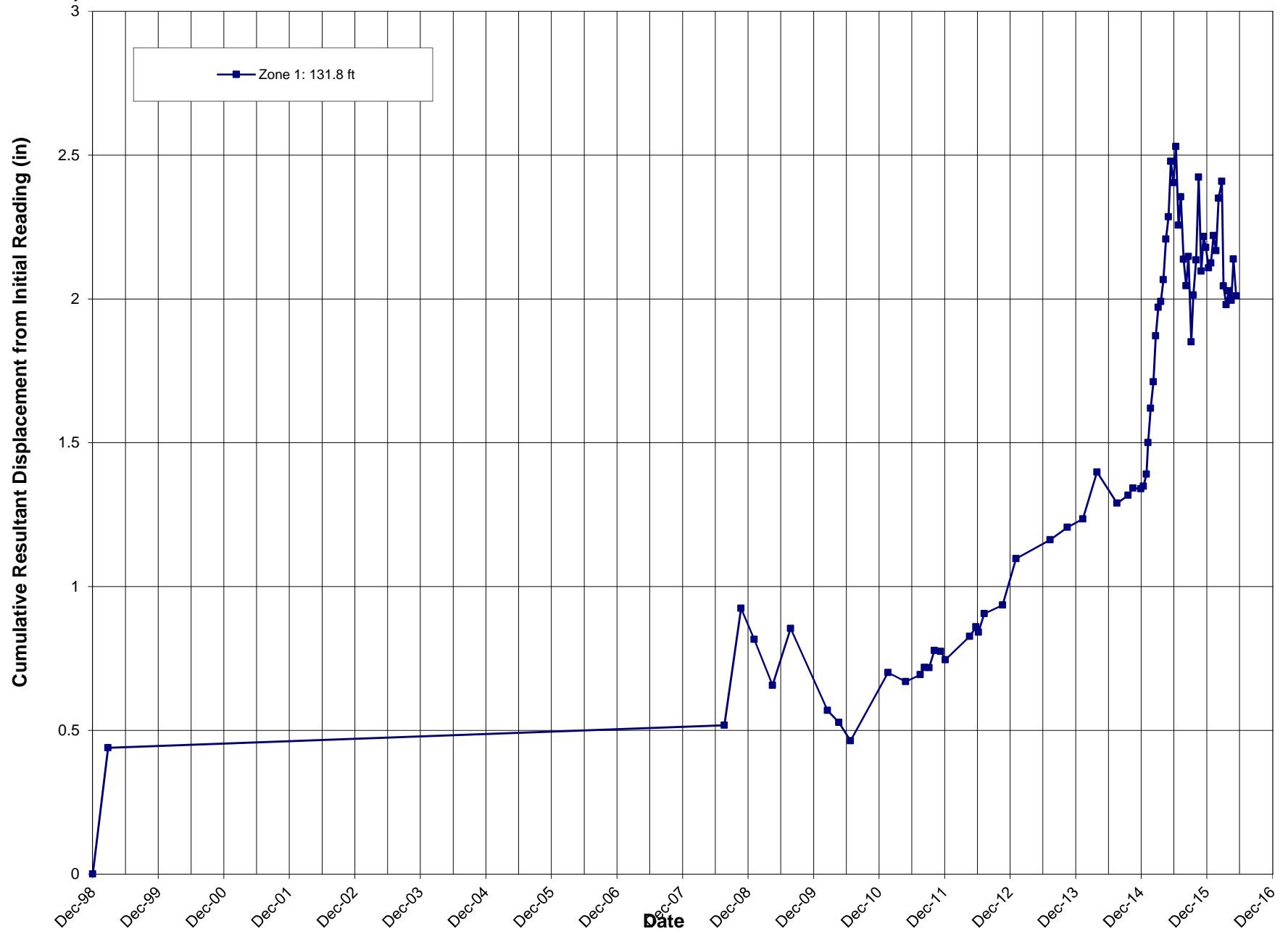


Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 10:47
Applied Azimuth : 0.0 degrees



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

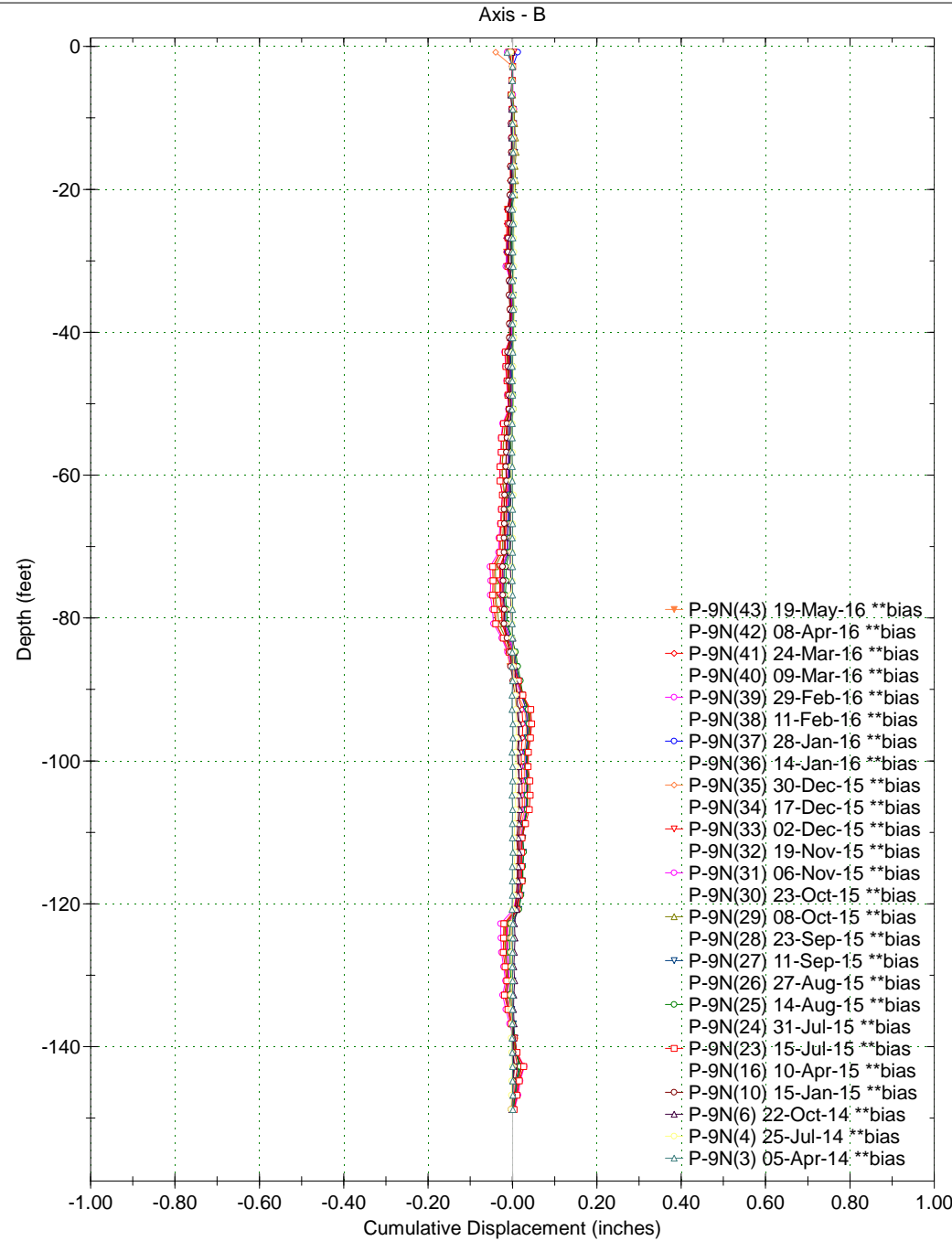
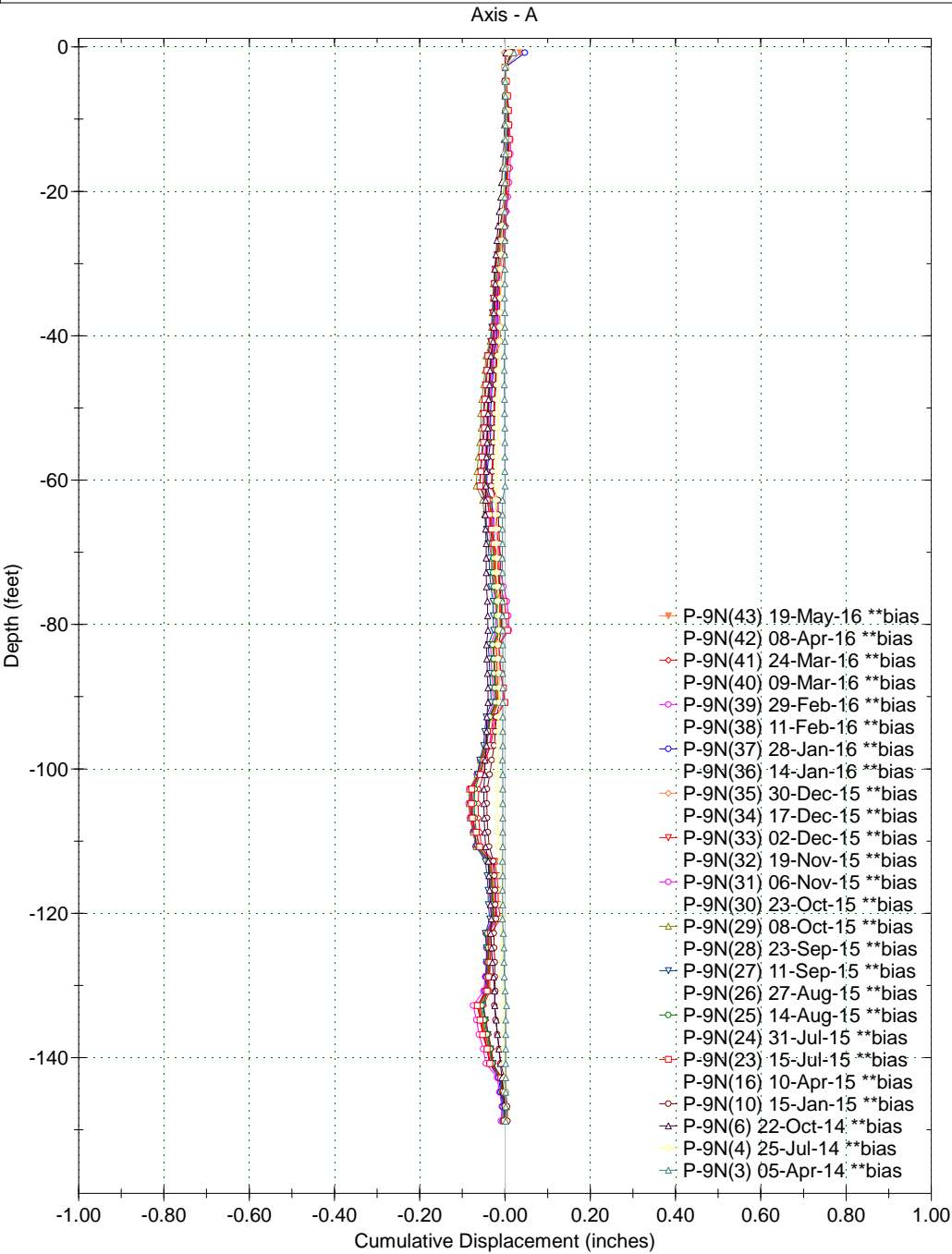
P-1



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



Borehole : TGR I-4
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 58.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Sep 23 10:39
Applied Azimuth : 0.0 degrees

