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February 3, 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: January 14 and 15, 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 January 14 and 15, 2016, are presented in this report. Bi Weekly readings currently include instruments at I/P-001-13, I/P-002-13, I/P-003-A-10, I/P-004-13, I/P-009-13, B-101, B-102, B-105, B-105A, B-05-03, B-05-04, B-05-A-11, P-1, P-9N, TGR I-2, and TGR I-4.

Piezometer Readings

P-002-13, B-05-04 – Pore pressure readings at these locations indicate minor fluctuations in total head over the past two weeks with virtually no net change.

P-001-13, P-009-13, B-05-A-11 – Pore pressure readings indicate a decrease in total head of up to about 0.5 feet in all piezometers at these locations over the past two weeks.

P-003-10 – Total head in the five shallowest piezometers at this location decreased by about 0.5 feet over the past two weeks. The piezometer at 98 feet showed some fluctuations, but virtually no net change. The deepest piezometer, which is read manually, indicated a slight increase in total head.

P-004-13 – On January 28, TGR cut a “window” in the casing placed over the instruments at this location so we will be able to obtain data for these piezometers for the next report.

B-105, B-05-03 – We worked with TGR on January 28 attempting to located these instruments. We were unsuccessful in uncovering the piezometers at either location. We believe that any further attempts at B-105 will be unsuccessful and these piezometers should be marked as

damaged and lost. The excavation at B-05-03 threatened to undermine the crane pad, so TGR stopped digging. Efforts to locate the piezometers at this location will continue after the crane is moved.

Inclinometer Readings

Inclinometer readings at I-001-13, I-002-13, I-003-10, I-009-13, B-101, B-102, B-05-04, B-05-A-11, P-9N, and TGR I-4 showed virtually no movement this two-week period. Displacements shown at the top of some slope tubes is due to flexing of the tube when readings are taken because some of the protective covers are only temporarily set in place until earthwork near these installations is completed.

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

B-105A – The inclinometer at this location was damaged during excavation behind the bulkhead. Fortunately, the tube separated cleanly at a joint and we were able to attach a short section of tubing to line up with past readings. The attached plot shows past readings with the top 8 feet removed and the two recent readings taken after the interim “repair.” These last two readings show no movement. Compared to readings taken before the dock wall work, there was about 0.2 inches of displacement in the negative B-axis direction in the remaining top 4 feet (12 feet below the original top of casing) and slight displacement in the remaining top 10 feet in the positive A-axis direction. The zone plot for this location has been updated to show cumulative resultant displacements from 9 to 45 feet, which is now 1 to 37 feet from the new top of the slope tube.

P-1 – At this location, the inclinometer readings indicate an increase in displacement between 120 and 140 feet in the negative A-axis direction and in the positive B-axis direction. The cumulative resultant displacement zone plot at 132 feet shows an increase of about 0.1 inches. The displacement is still well below the maximum displacement reading.

TGR I-2 – This location is currently inaccessible due to deep voids behind the shoring system.

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

Very truly yours,

SME

Brendan P. Lieske, E.I.
Staff Engineer

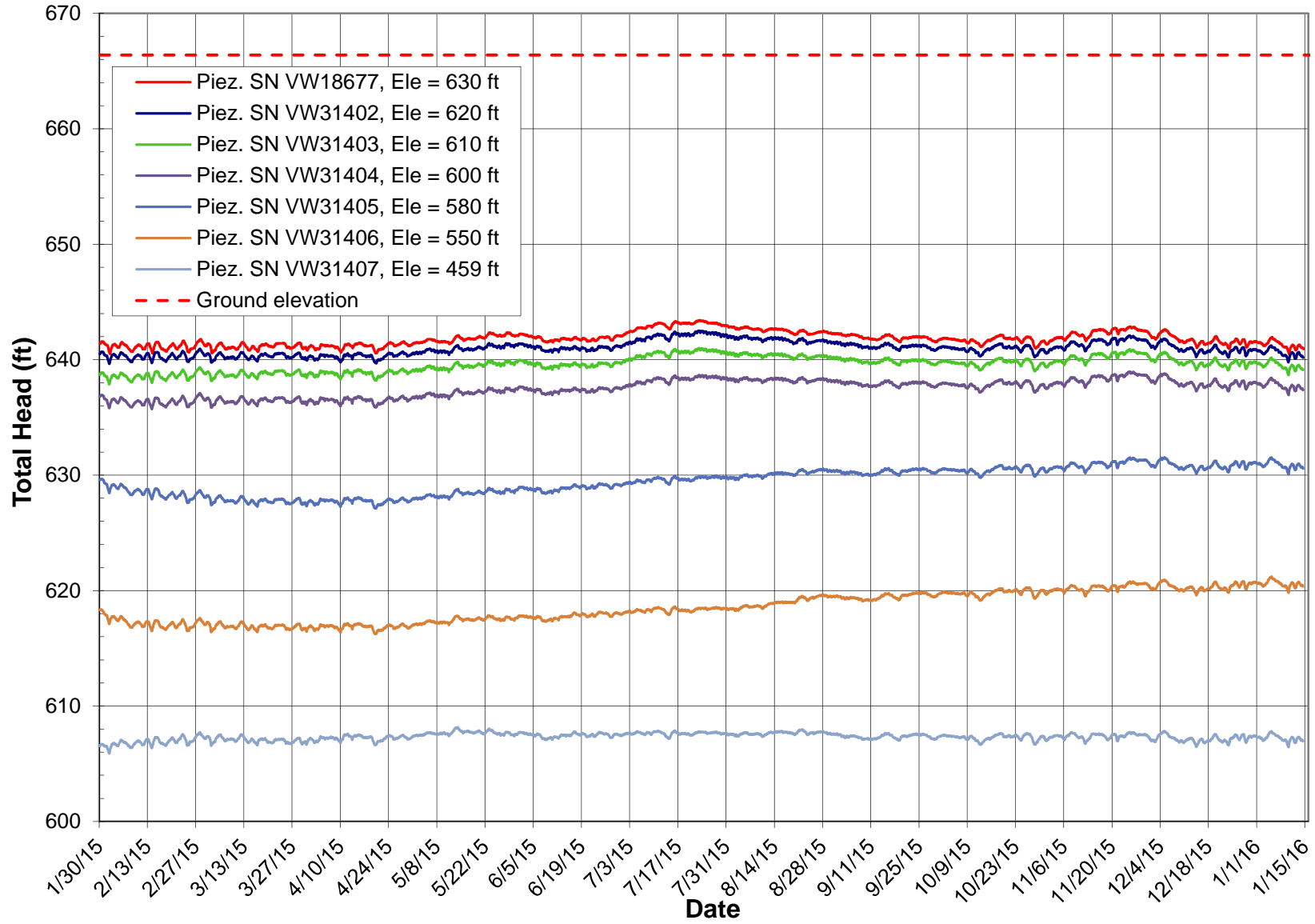
Alan J. Esser, P.E., D.GE
Chief Consultant

Attachments

cc: Distribution list via email

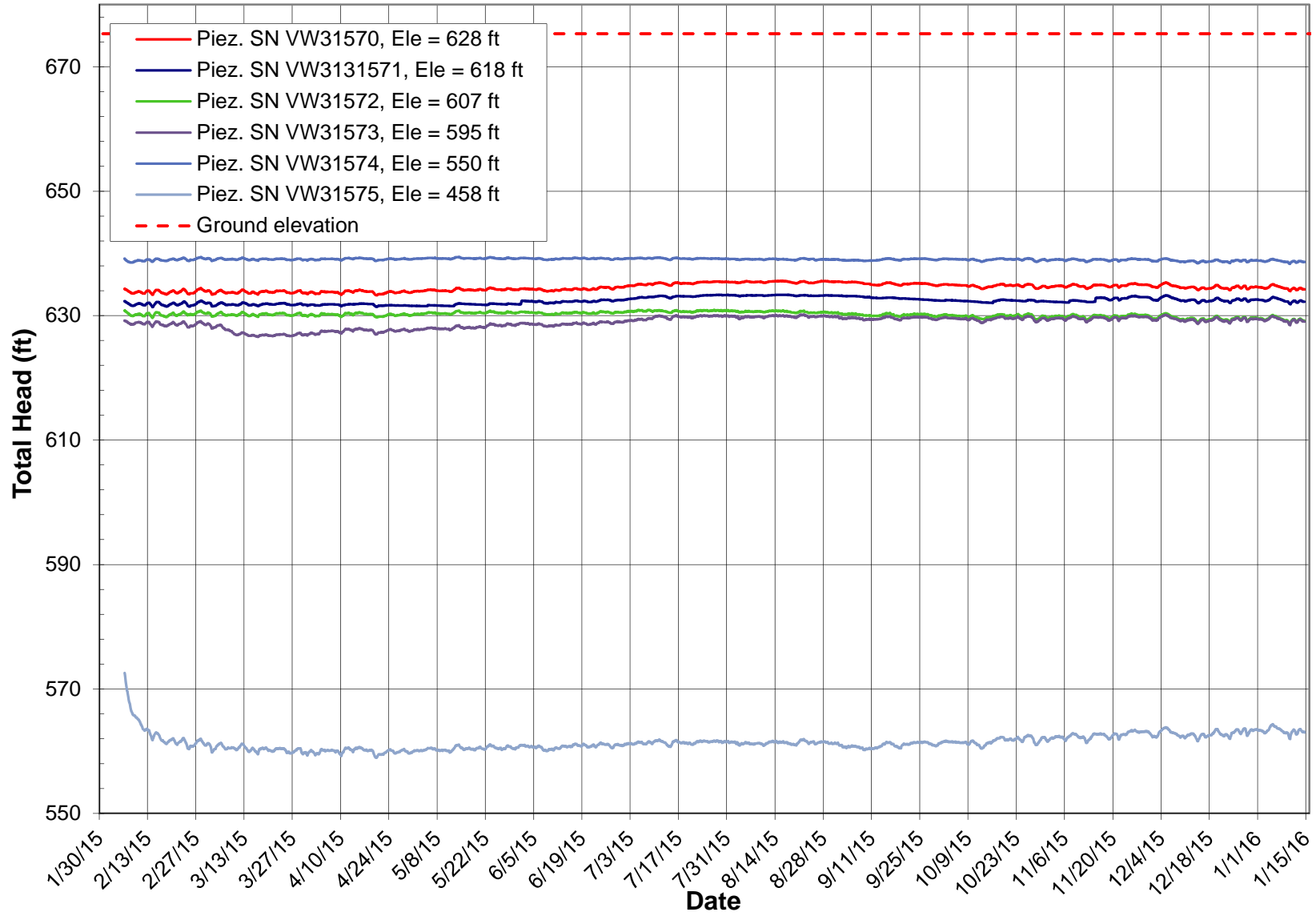
P-001-13 VW Piezometer Readings

Ground surface elevation = 666.4 ft



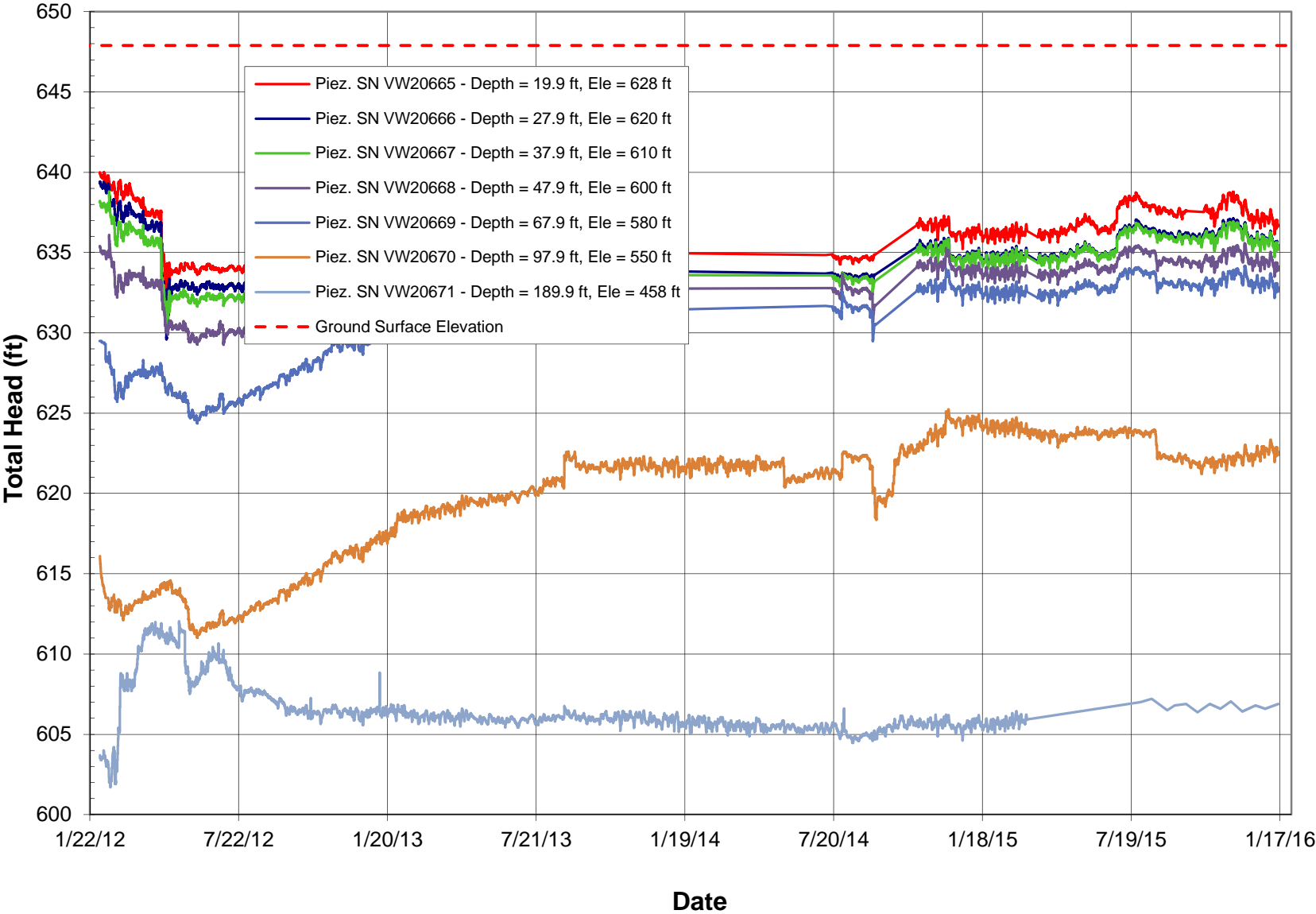
P-002-13 VW Piezometer Readings

Ground surface elevation = 675.29 ft



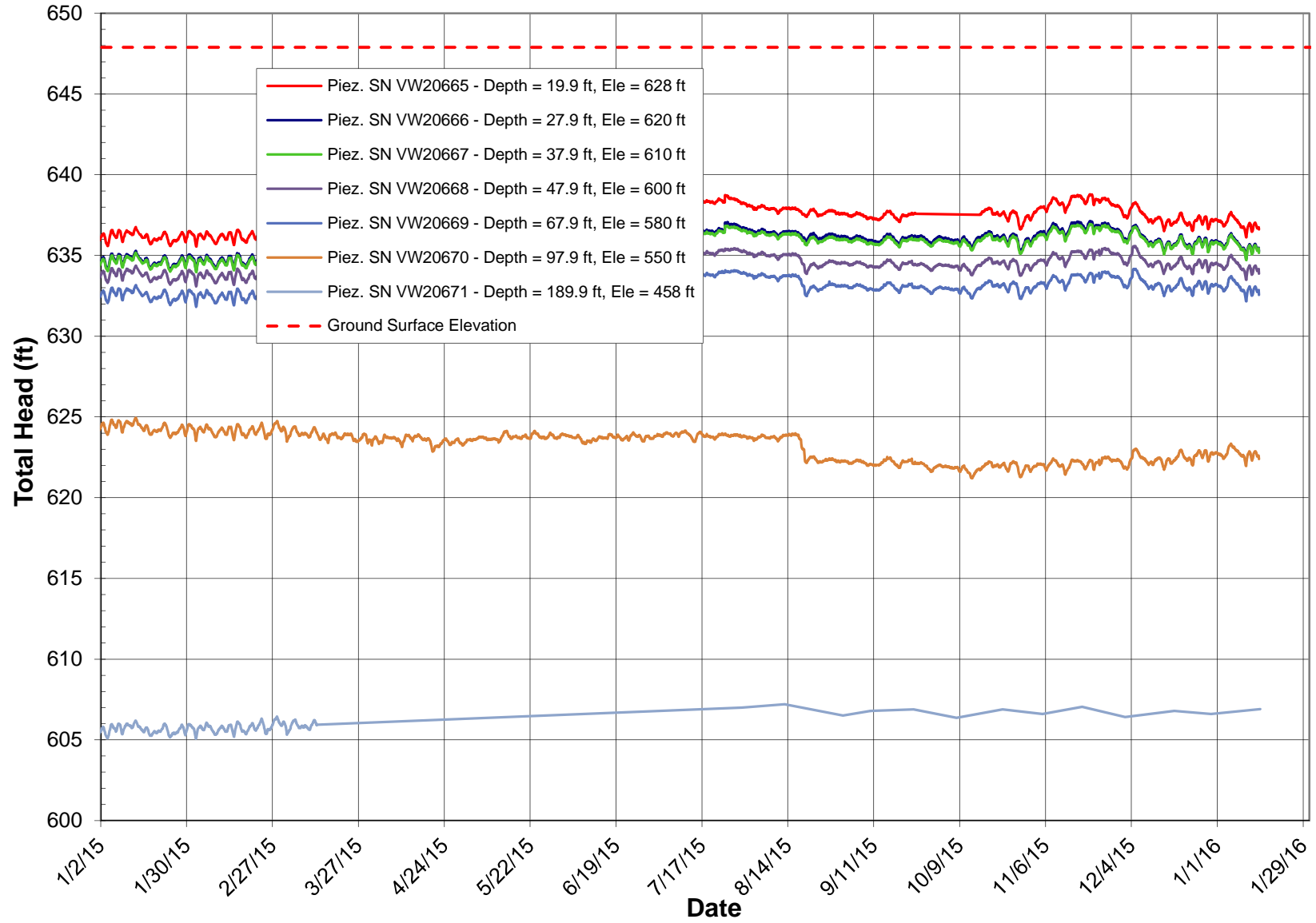
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



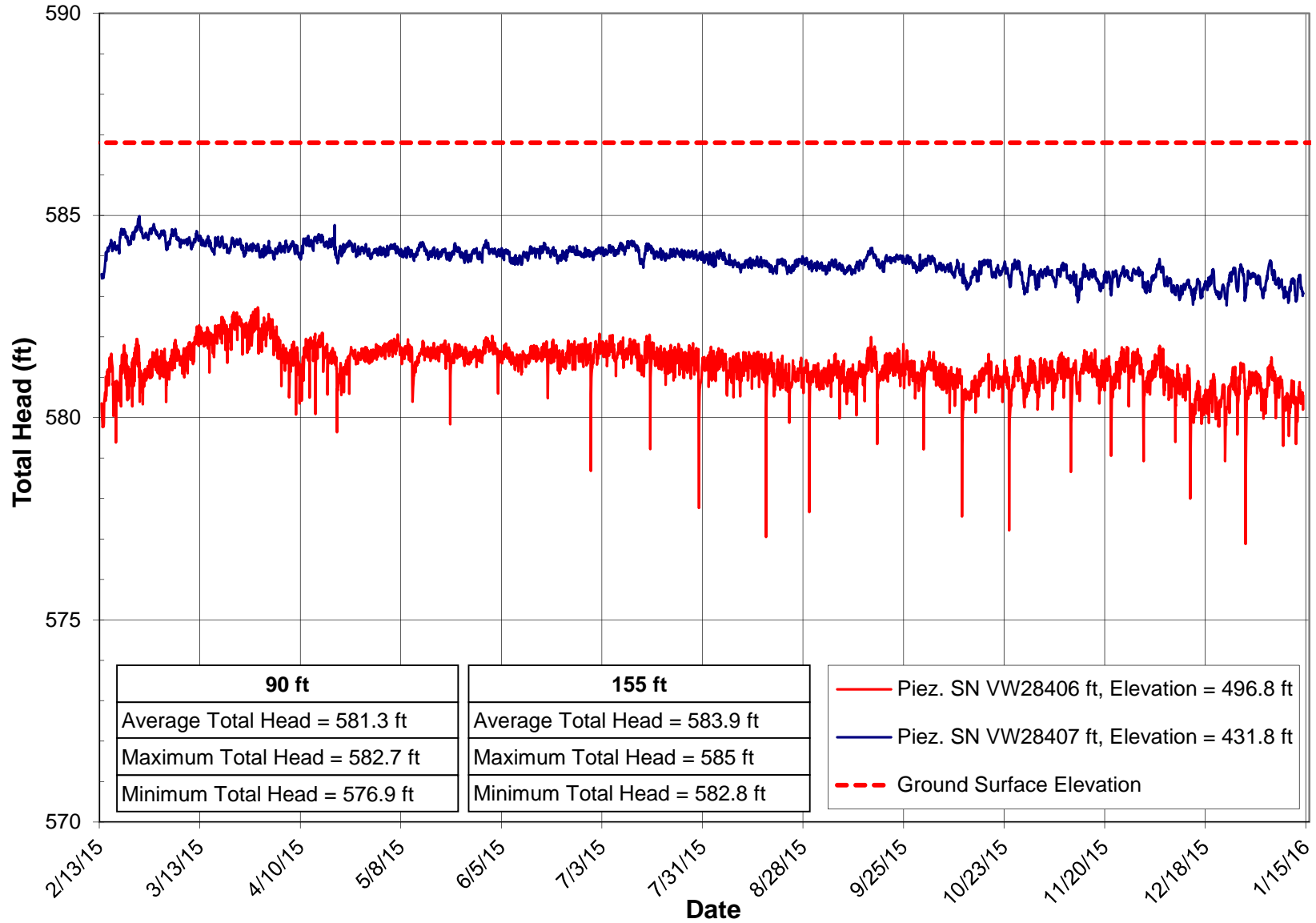
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



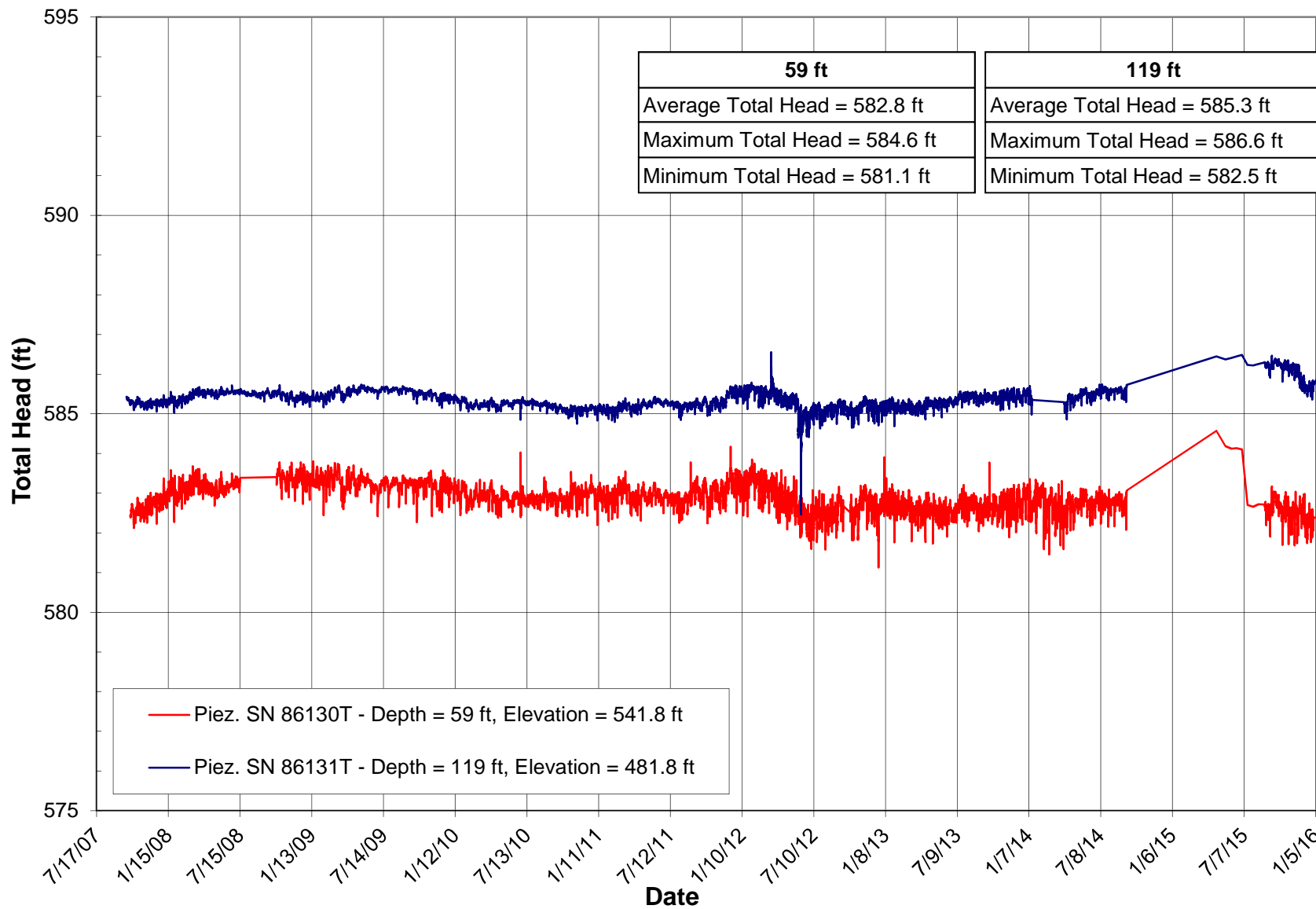
P-009-13 VW Piezometer Readings

Ground surface elevation = 586.6 ft



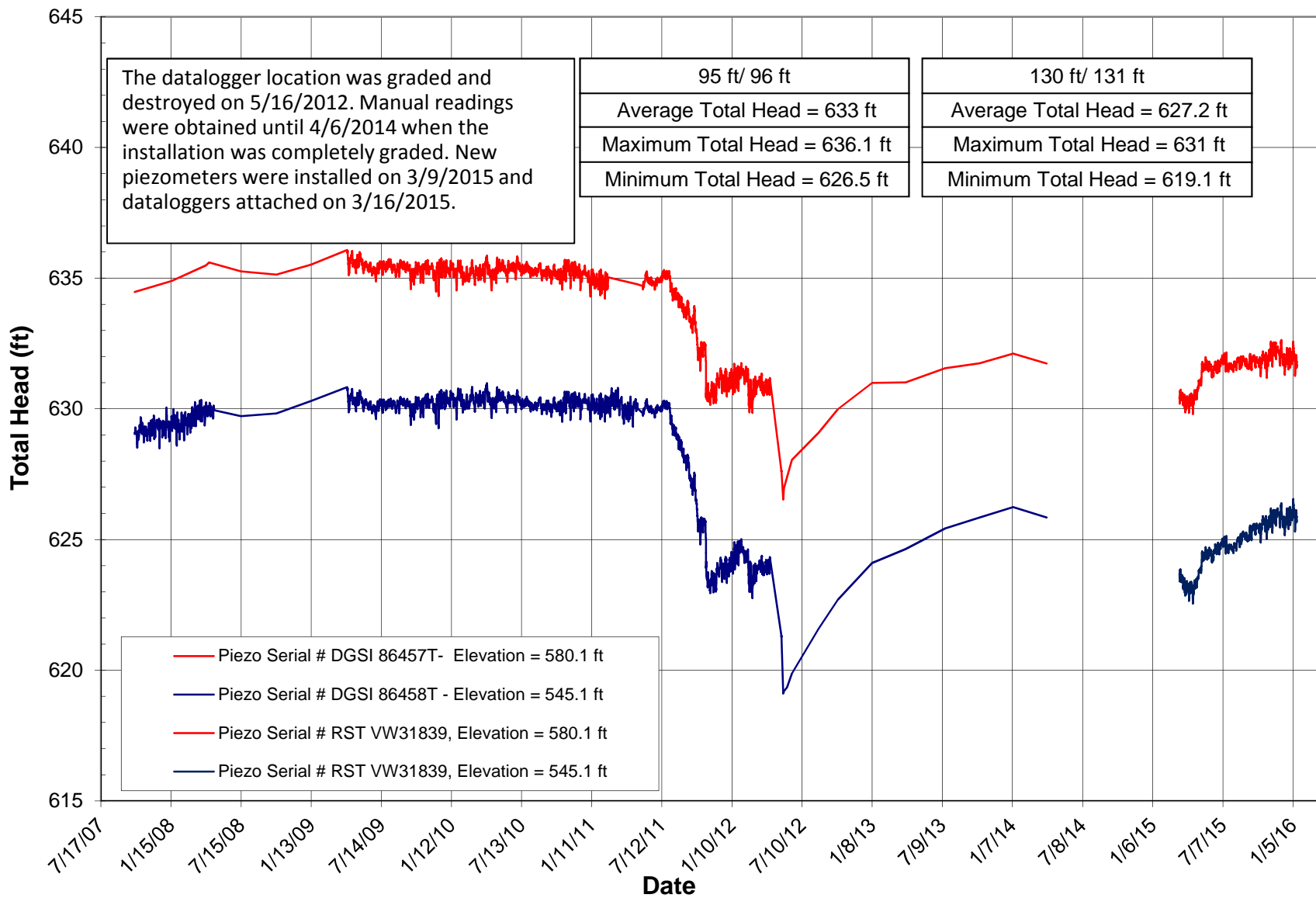
B-05-04 VW Piezometer Readings

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)

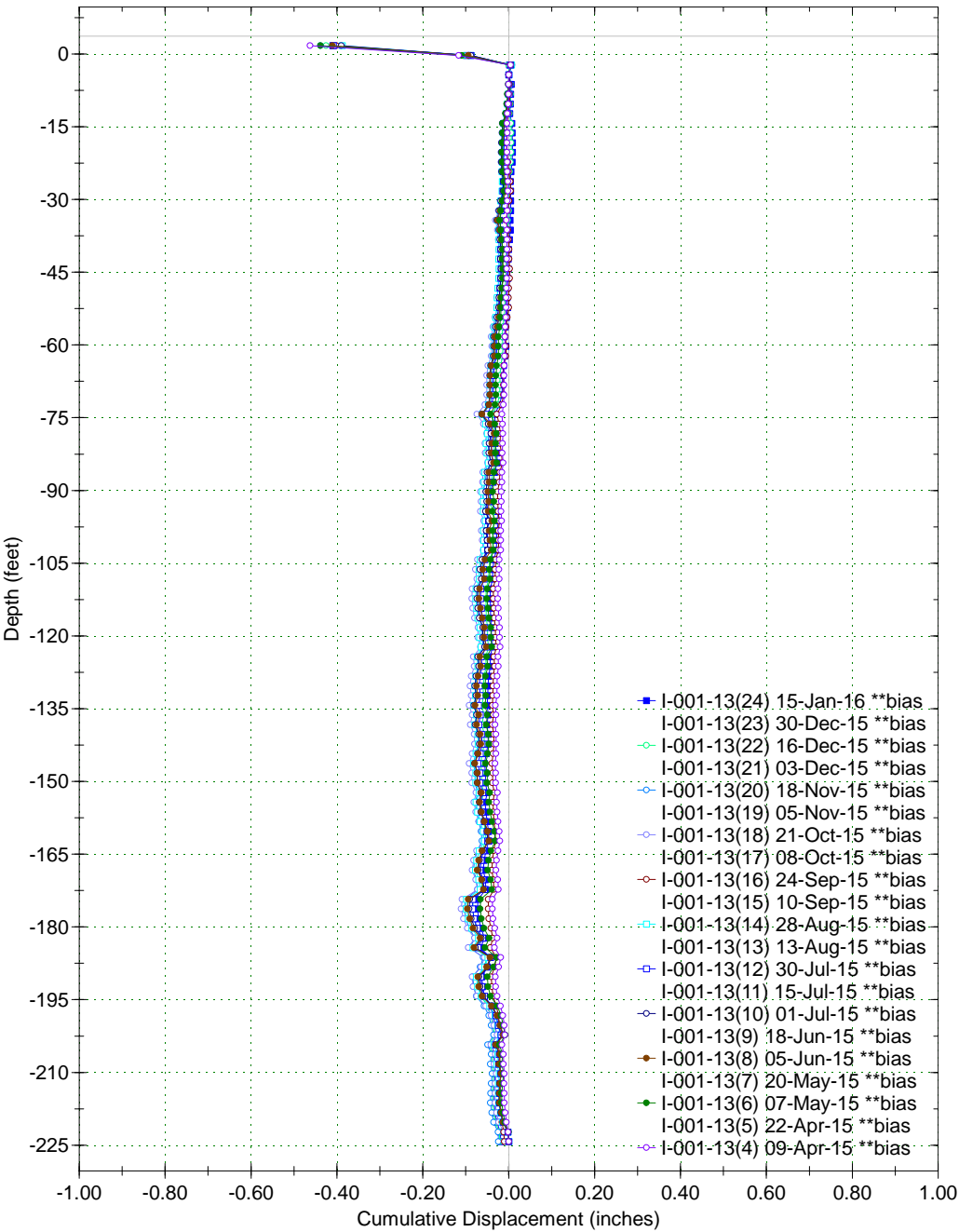


Borehole : I-001-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :

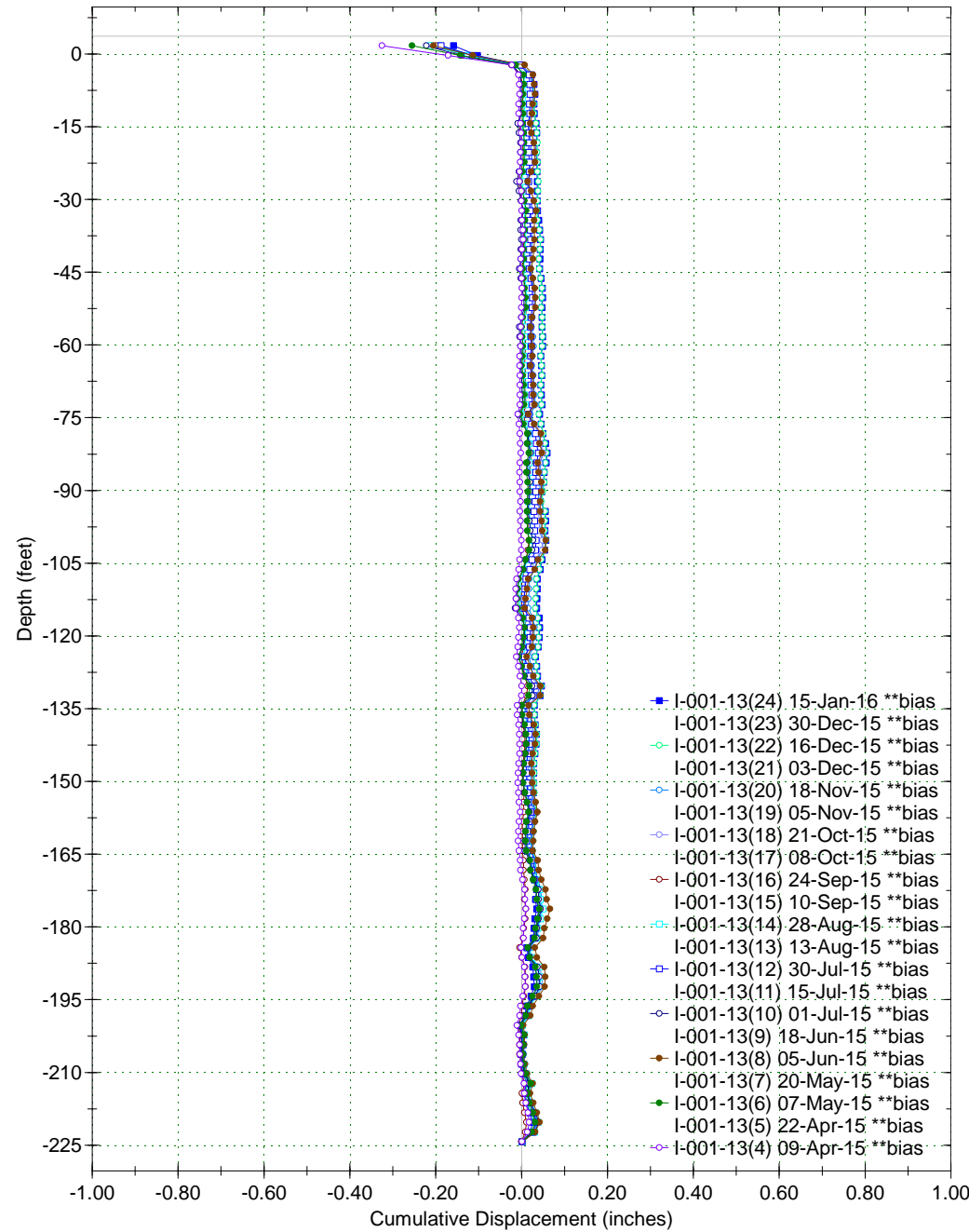


Spiral Correction : N/A
Collar Elevation : 3.7 feet
Borehole Total Depth : 228.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 11:14
Applied Azimuth : 0.0 degrees

Axis - A



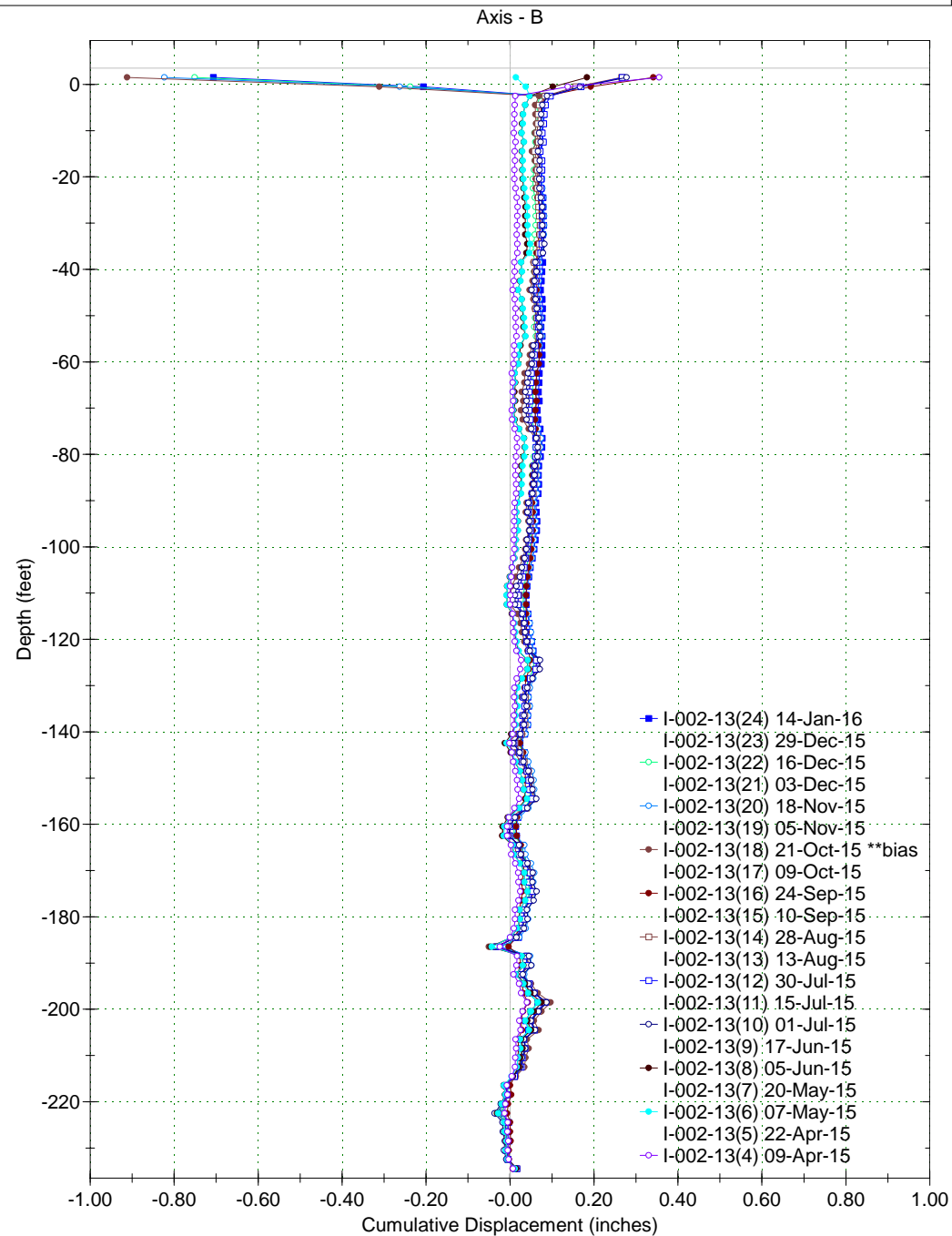
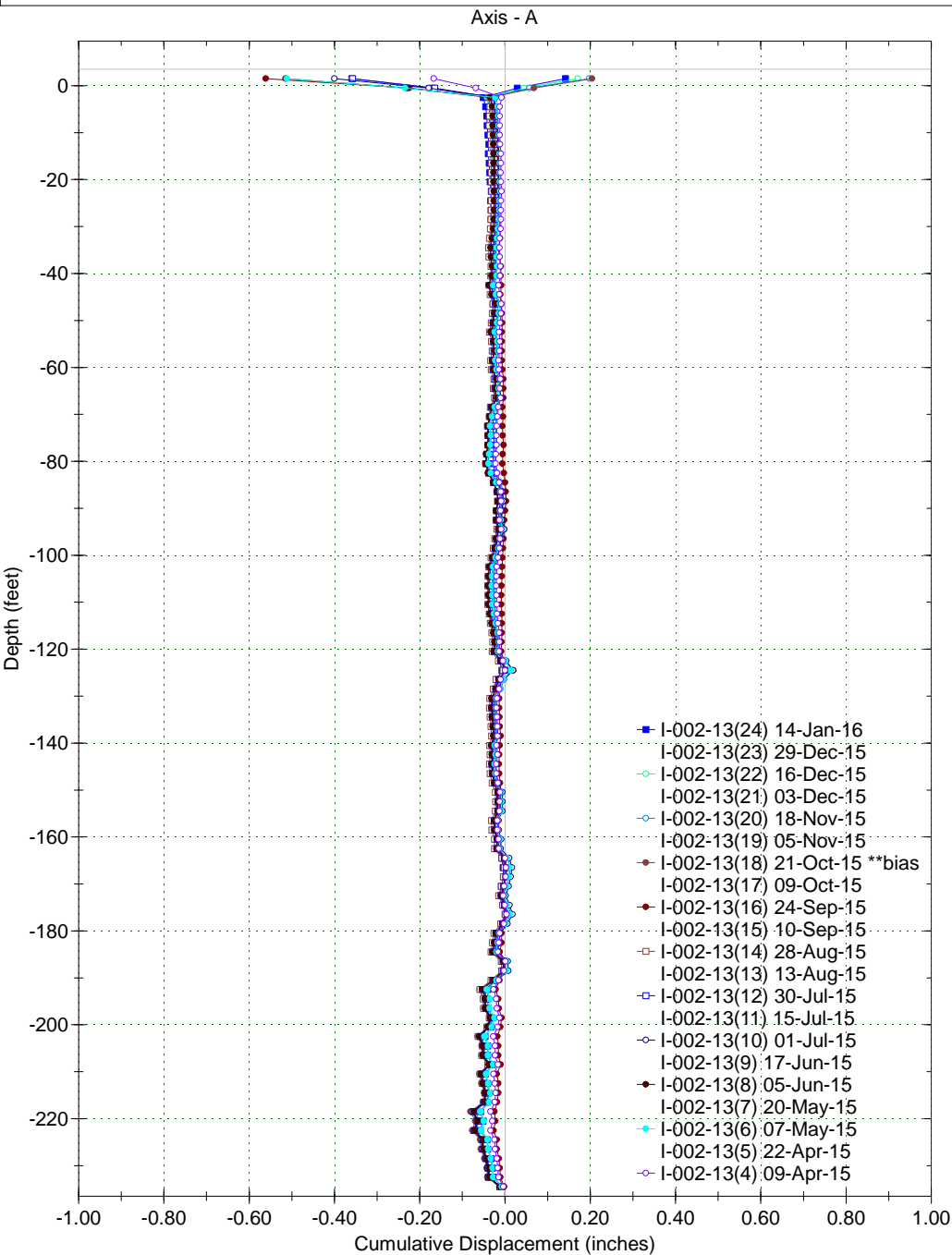
Axis - B



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



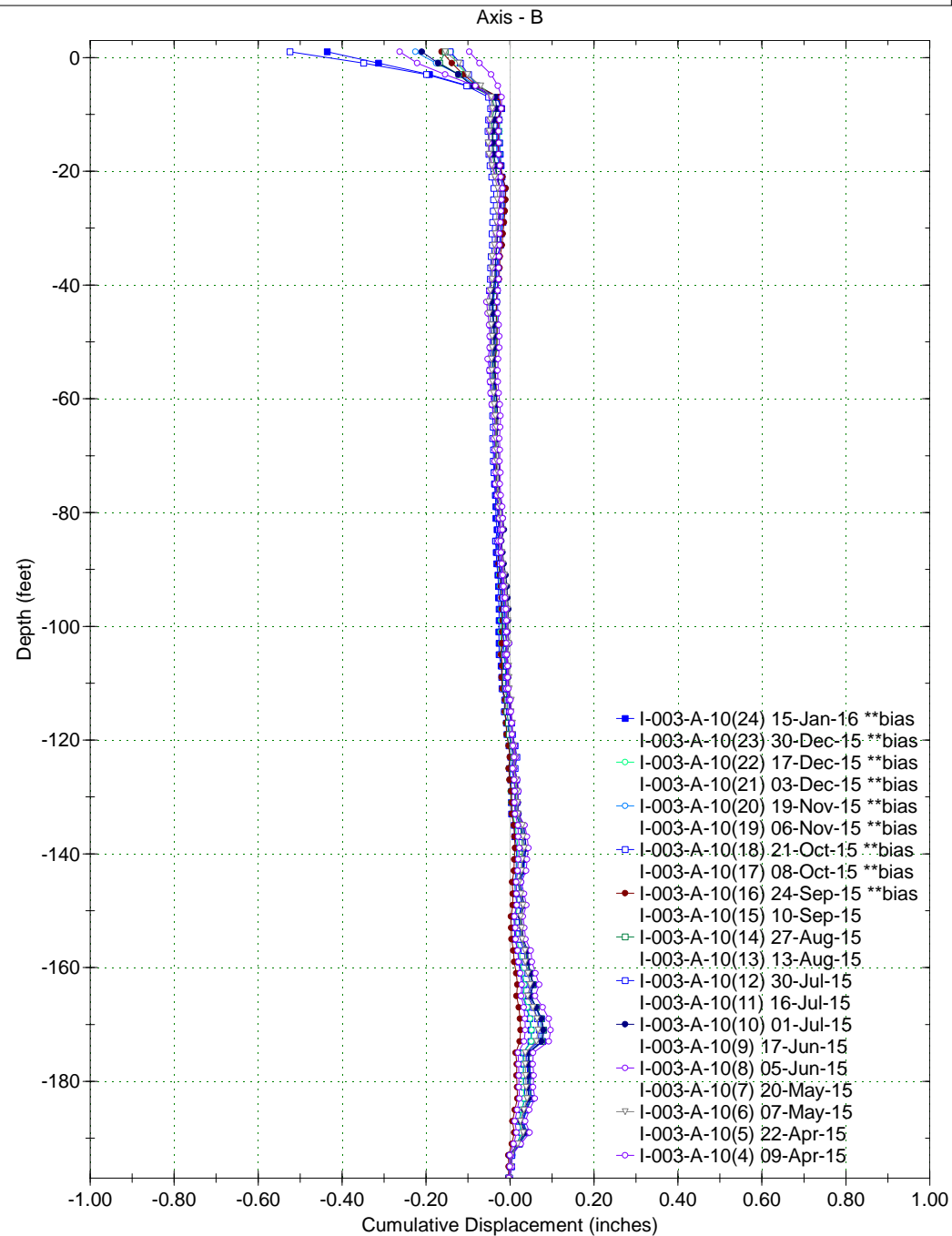
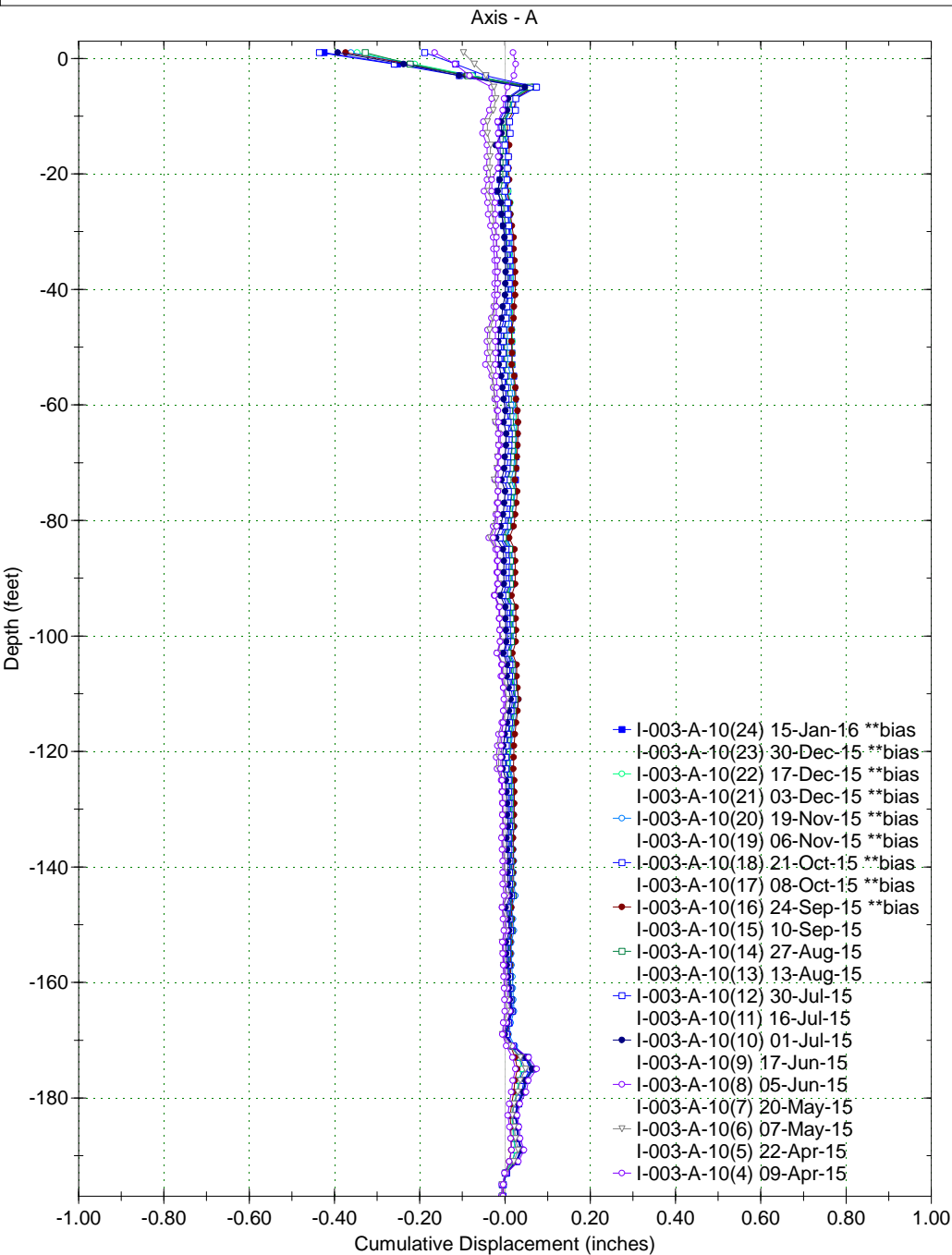
Spiral Correction : N/A
Collar Elevation : 3.5 feet
Borehole Total Depth : 238.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 10:04
Applied Azimuth : 0.0 degrees



Borehole : I-003-A-10
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



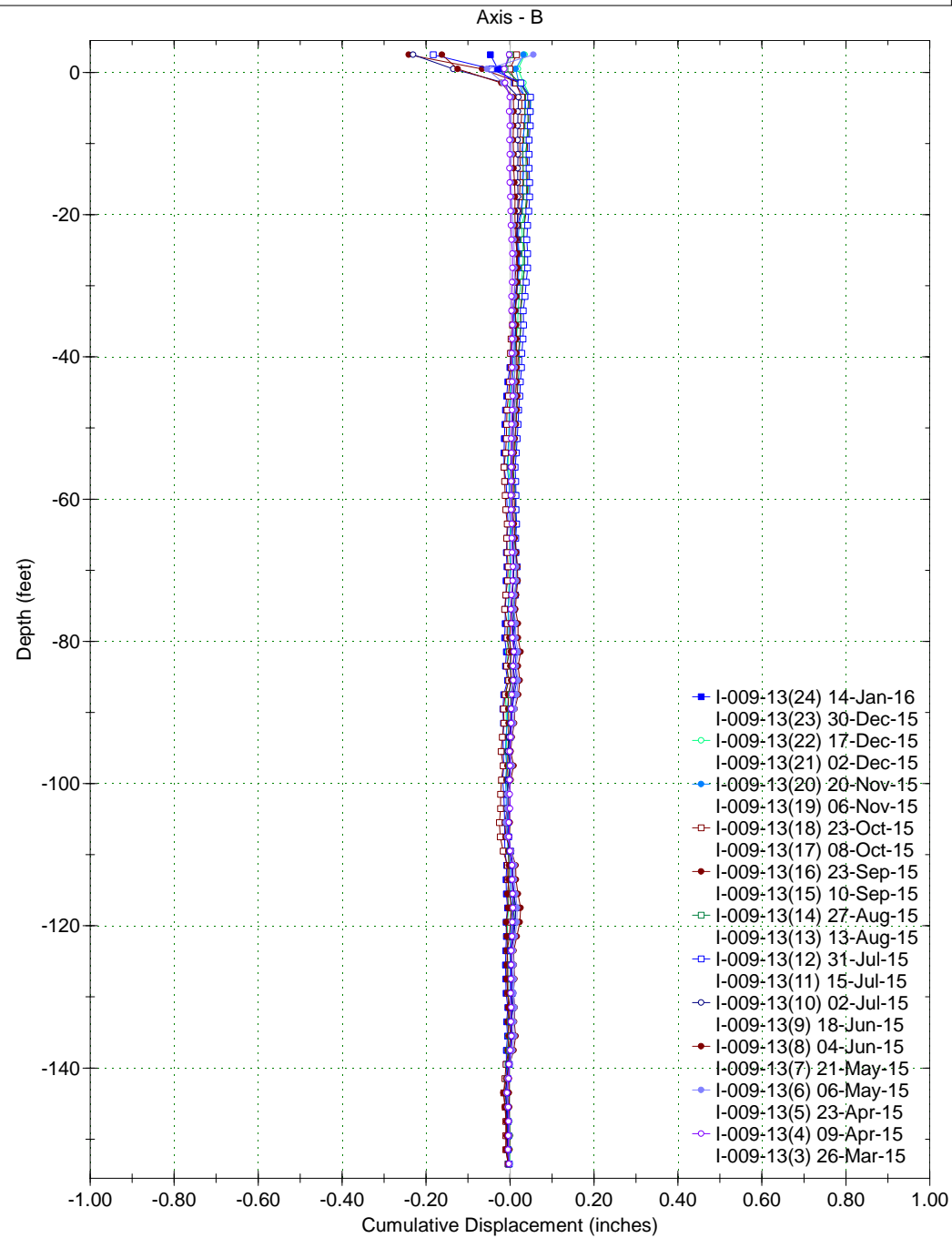
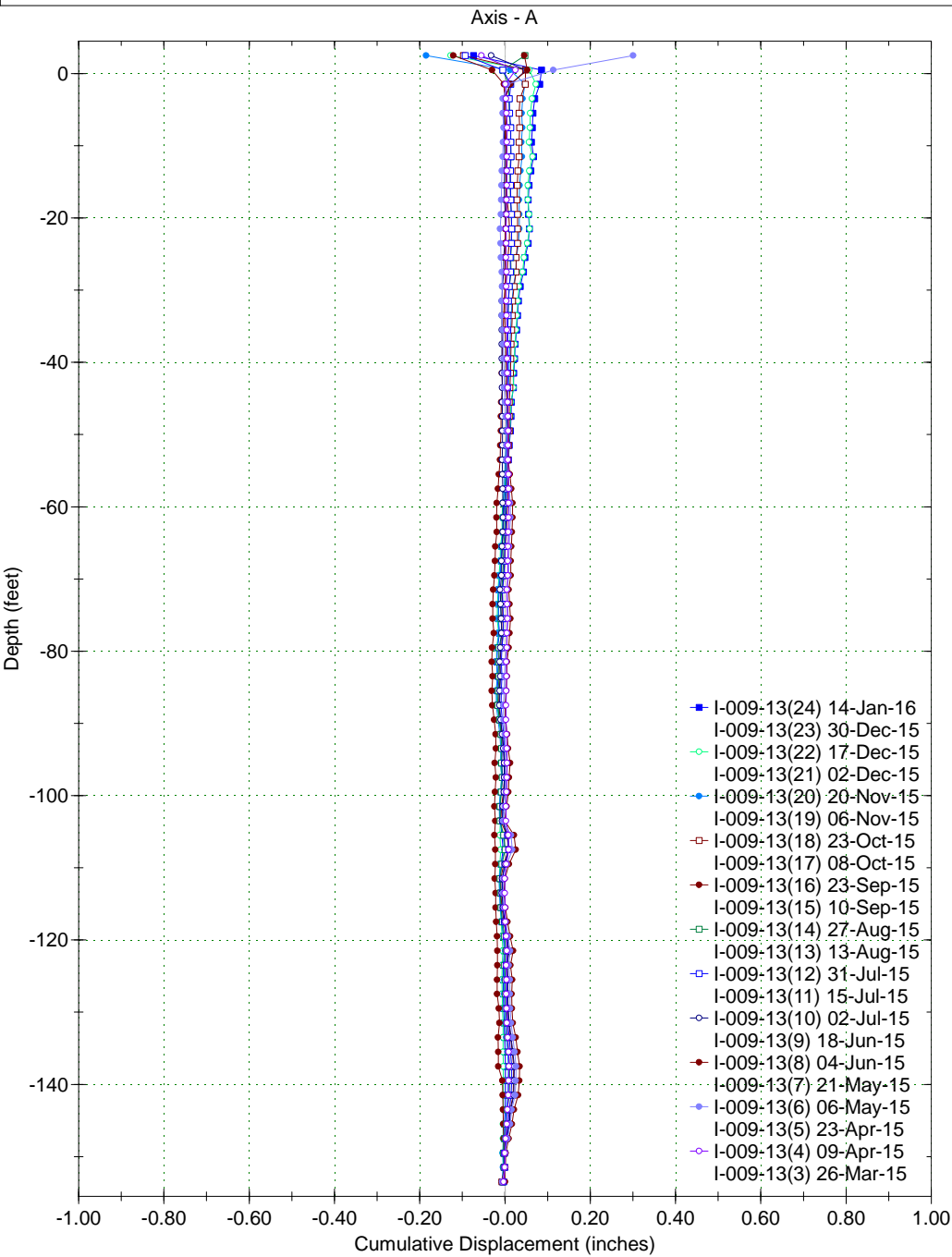
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 202.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 19 11:00
Applied Azimuth : 0.0 degrees



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



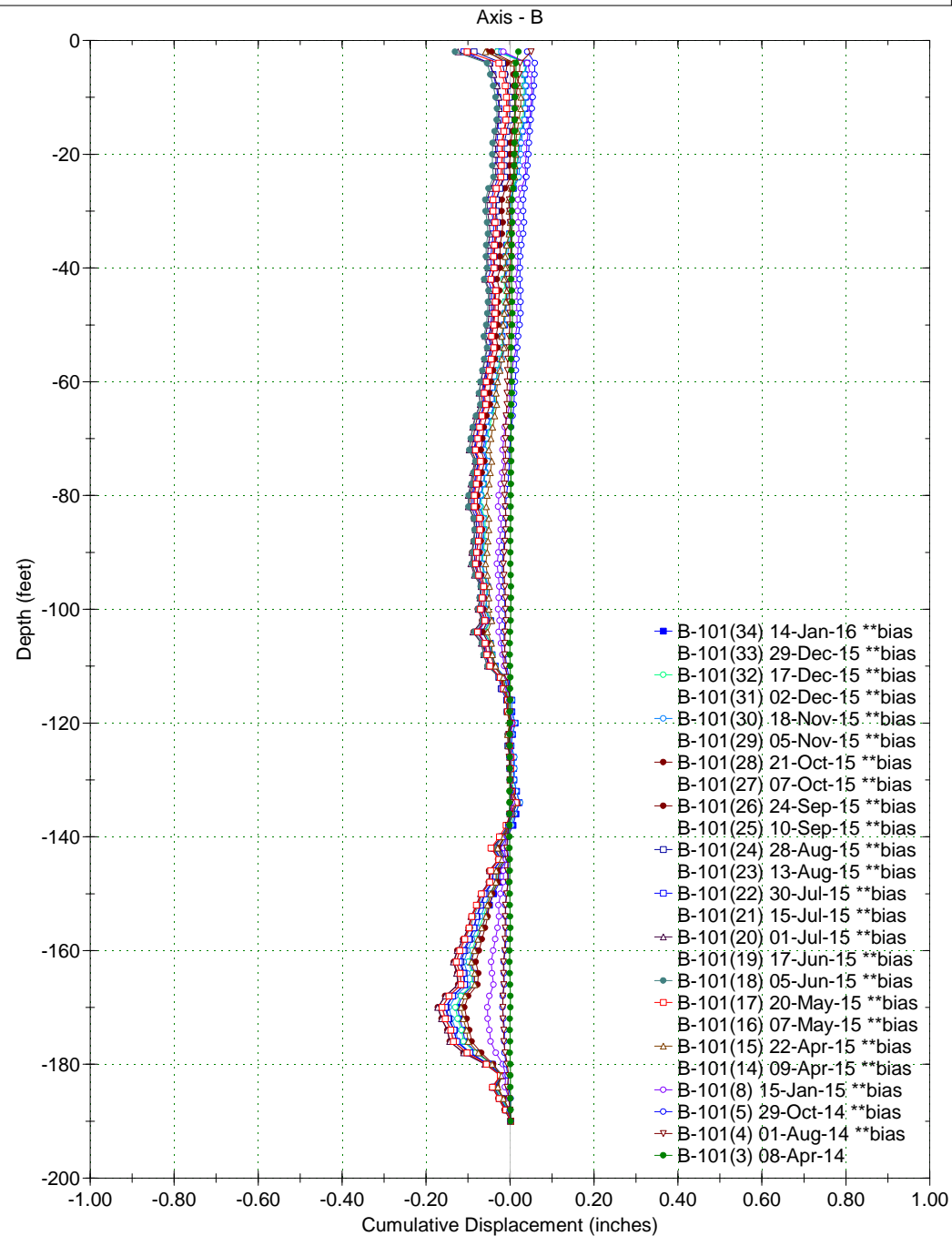
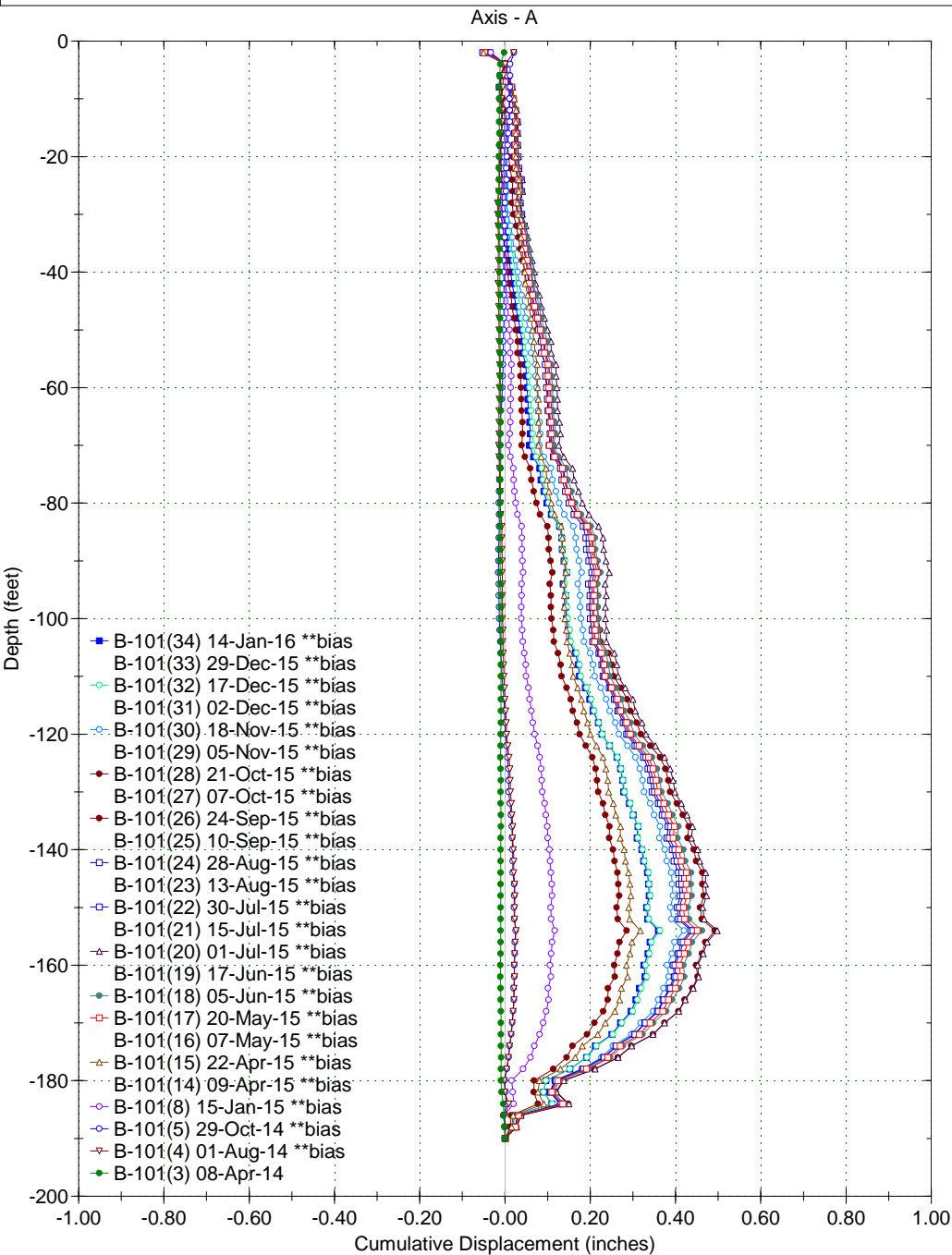
Spiral Correction : N/A
Collar Elevation : 4.5 feet
Borehole Total Depth : 158.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 18 15:56
Applied Azimuth : 0.0 degrees



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



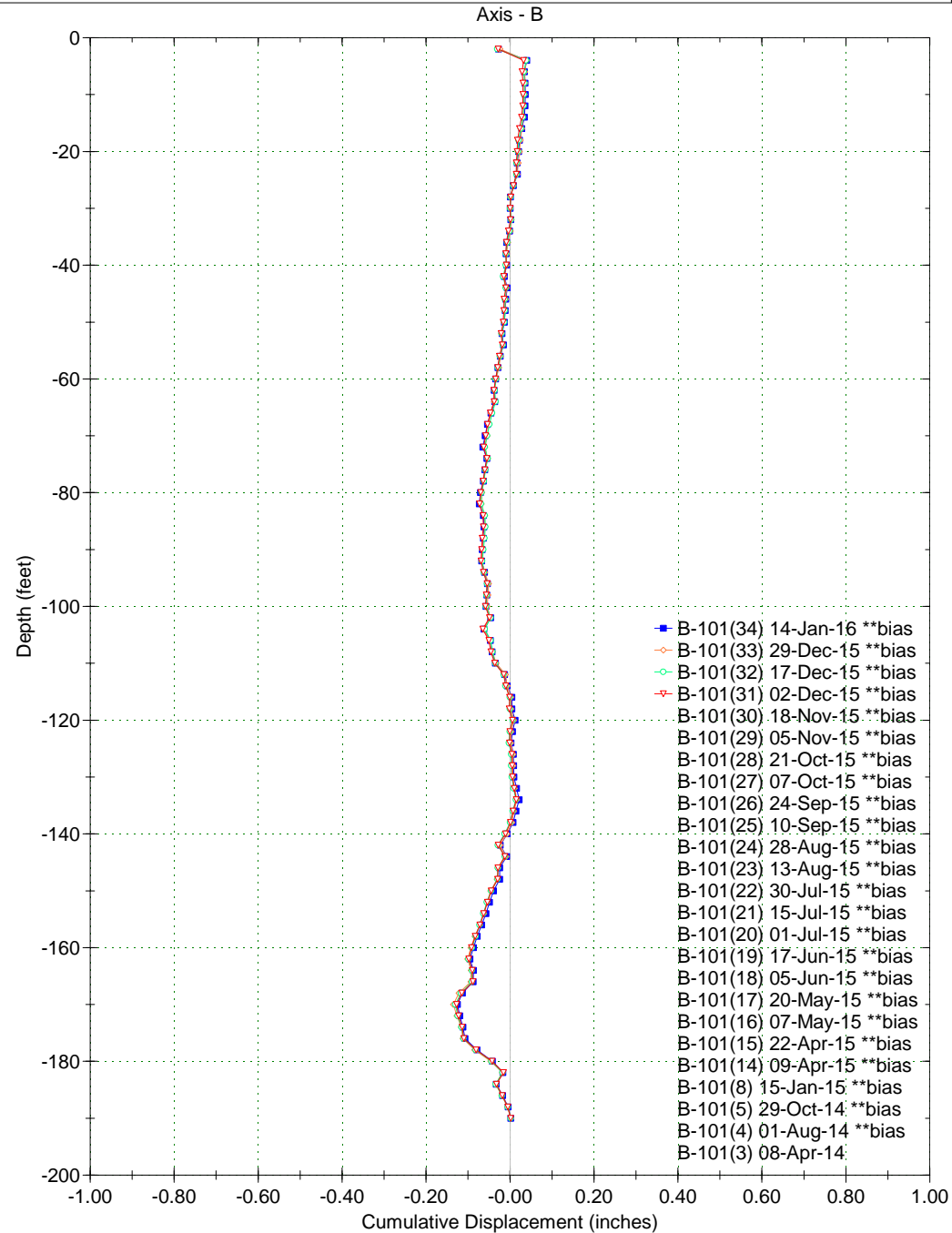
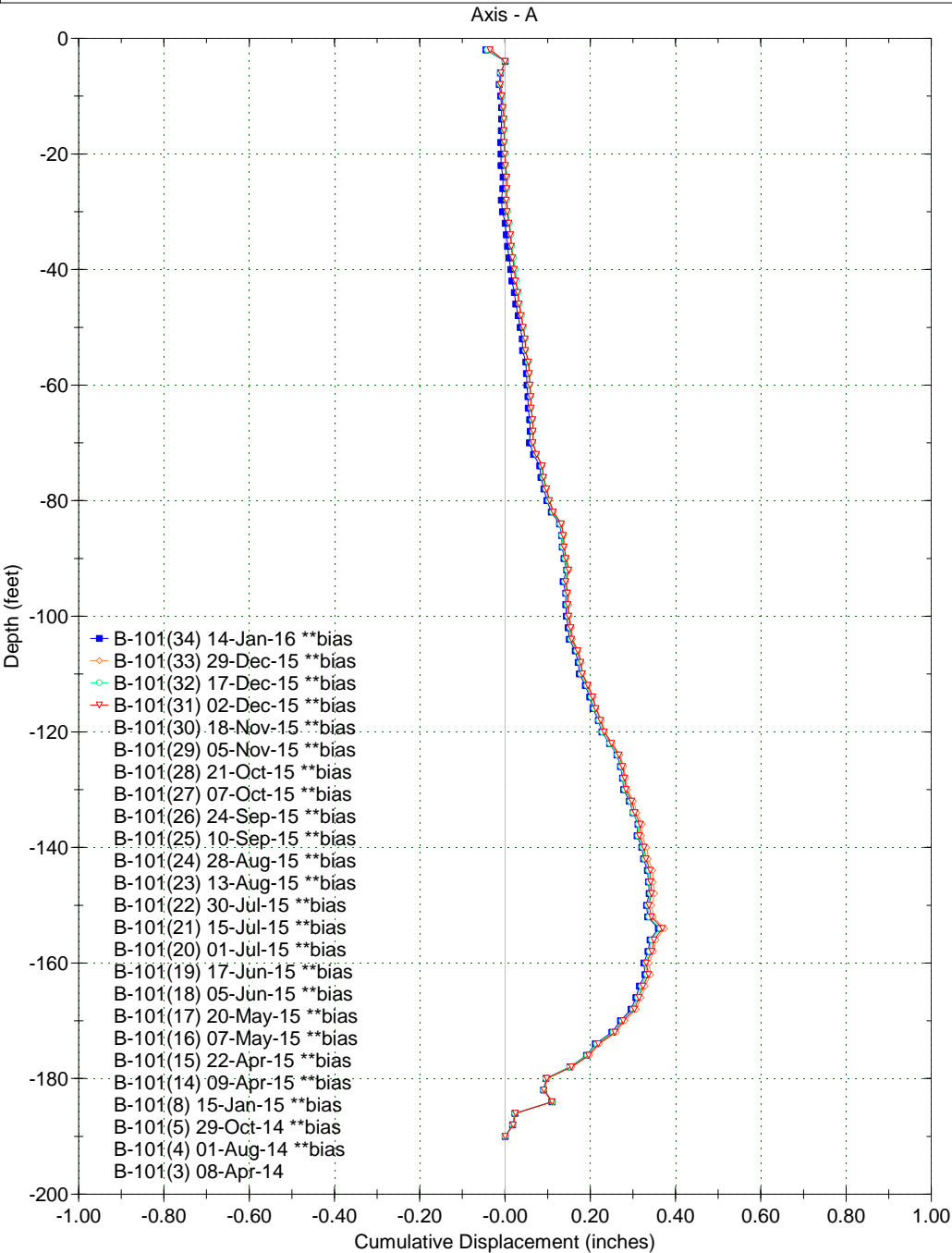
Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 190.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 22 09:01
 Applied Azimuth : 0.0 degrees



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



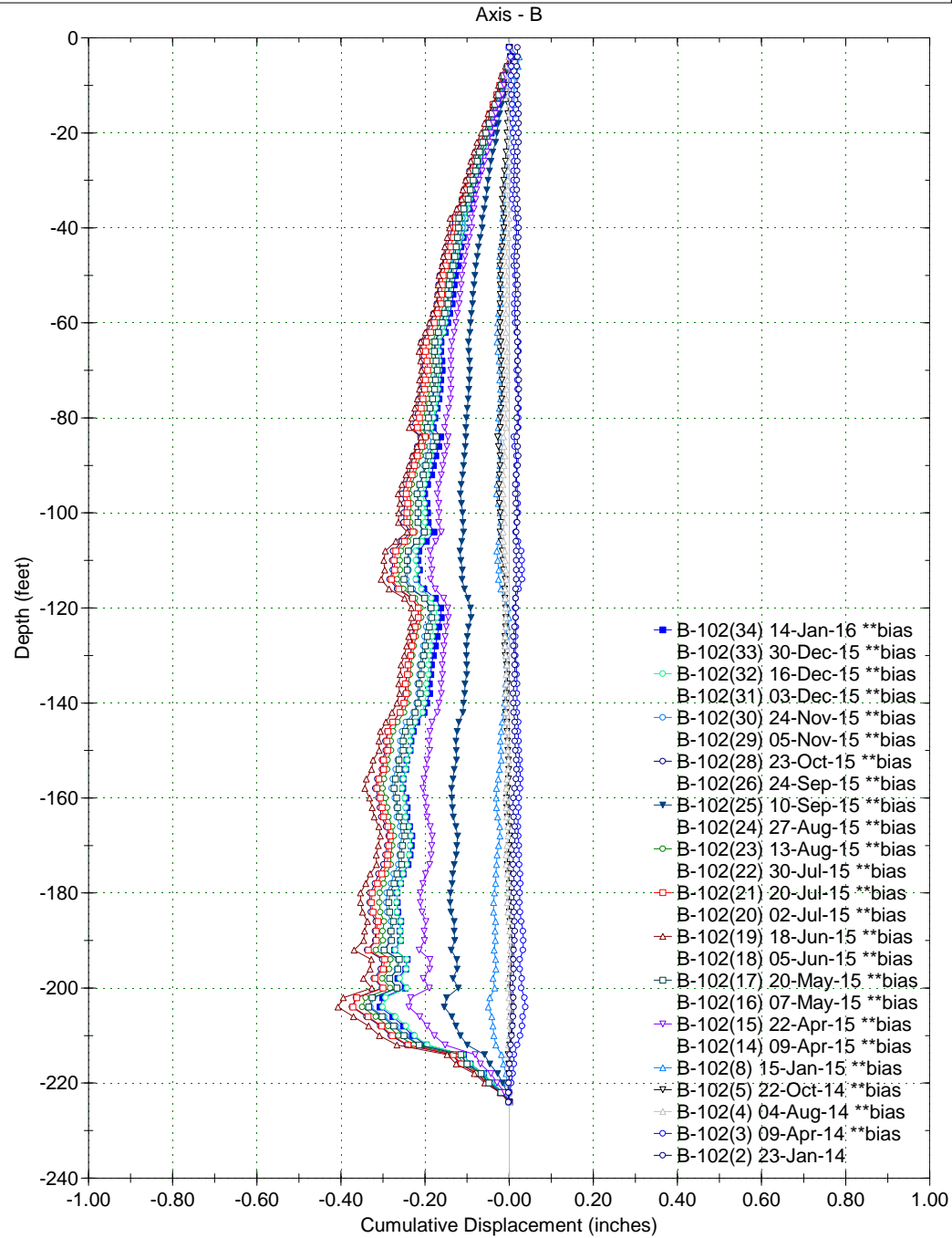
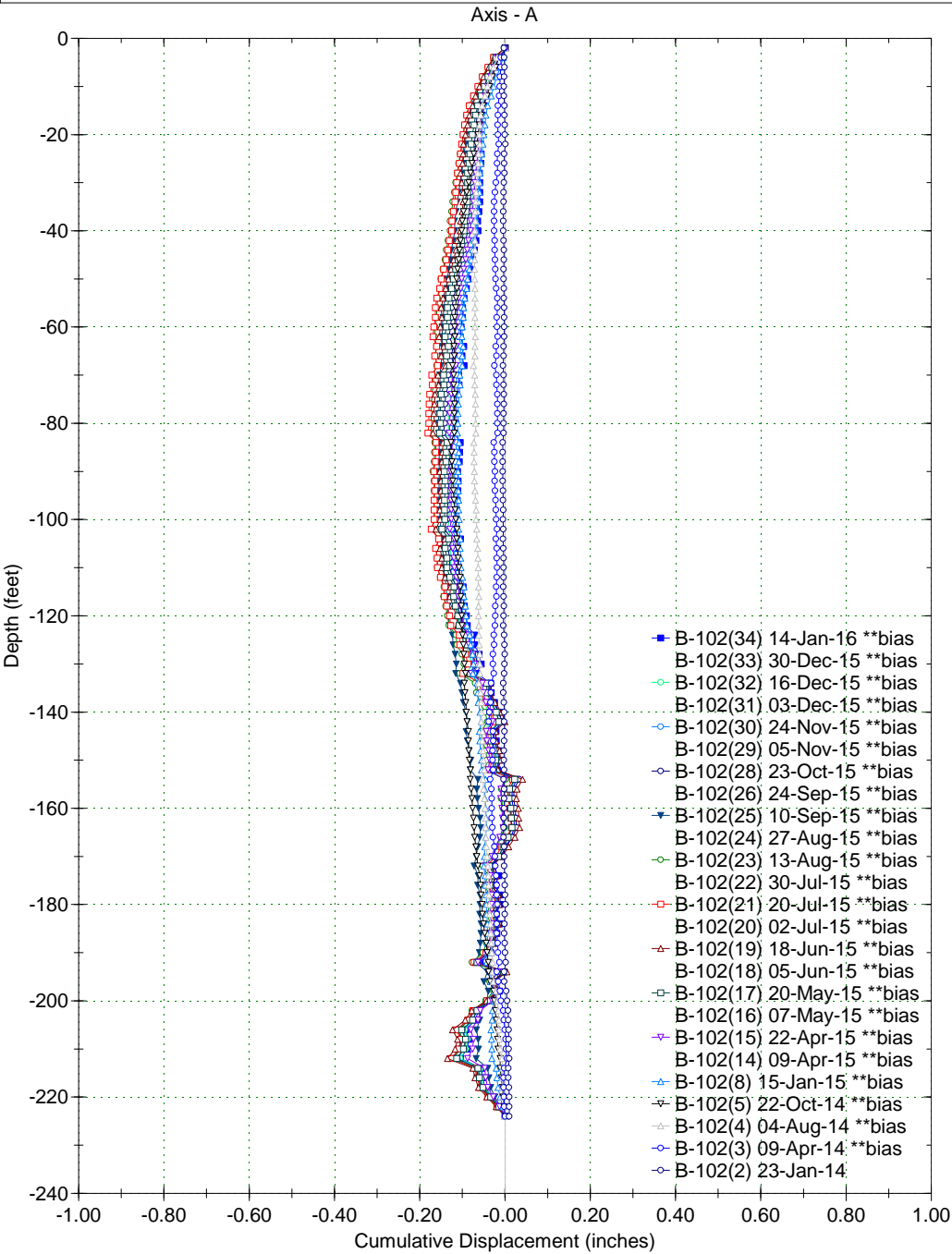
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 190.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 09:01
Applied Azimuth : 0.0 degrees



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



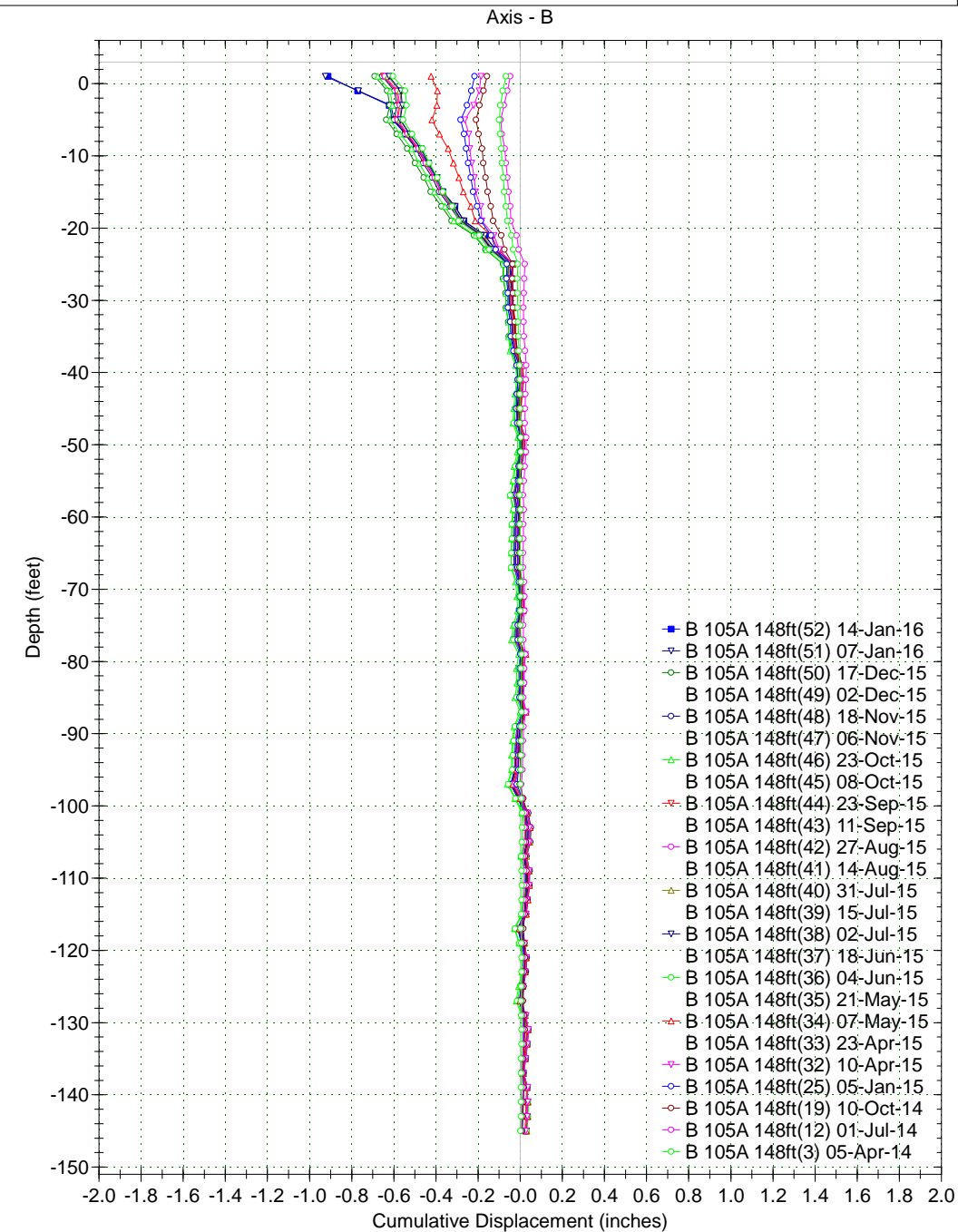
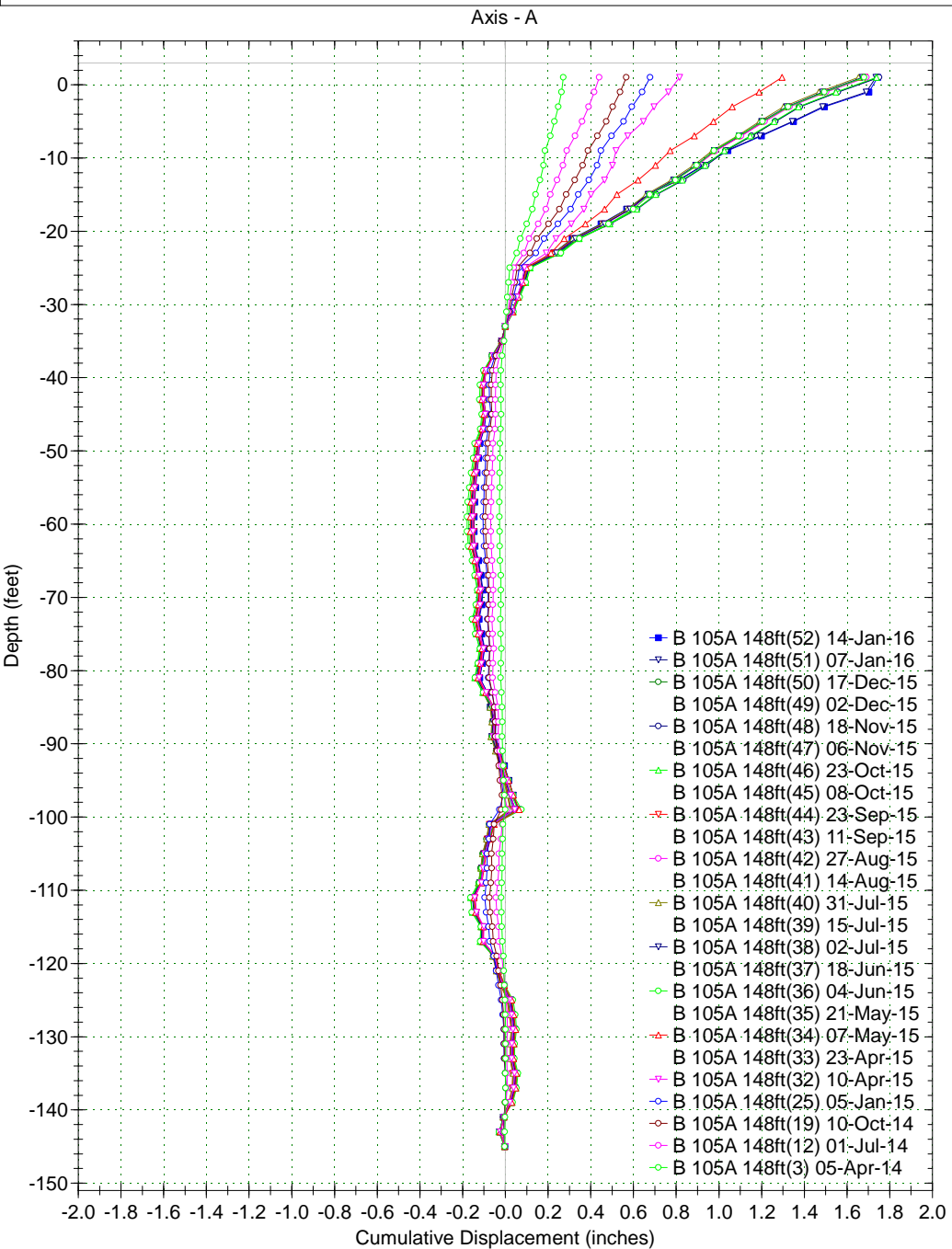
Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 224.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 23 08:21
 Applied Azimuth : 0.0 degrees



Borehole : B 105A 148ft
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing : Sta. 19+11.38
Easting : 90.9' Rt of CL
Collar :

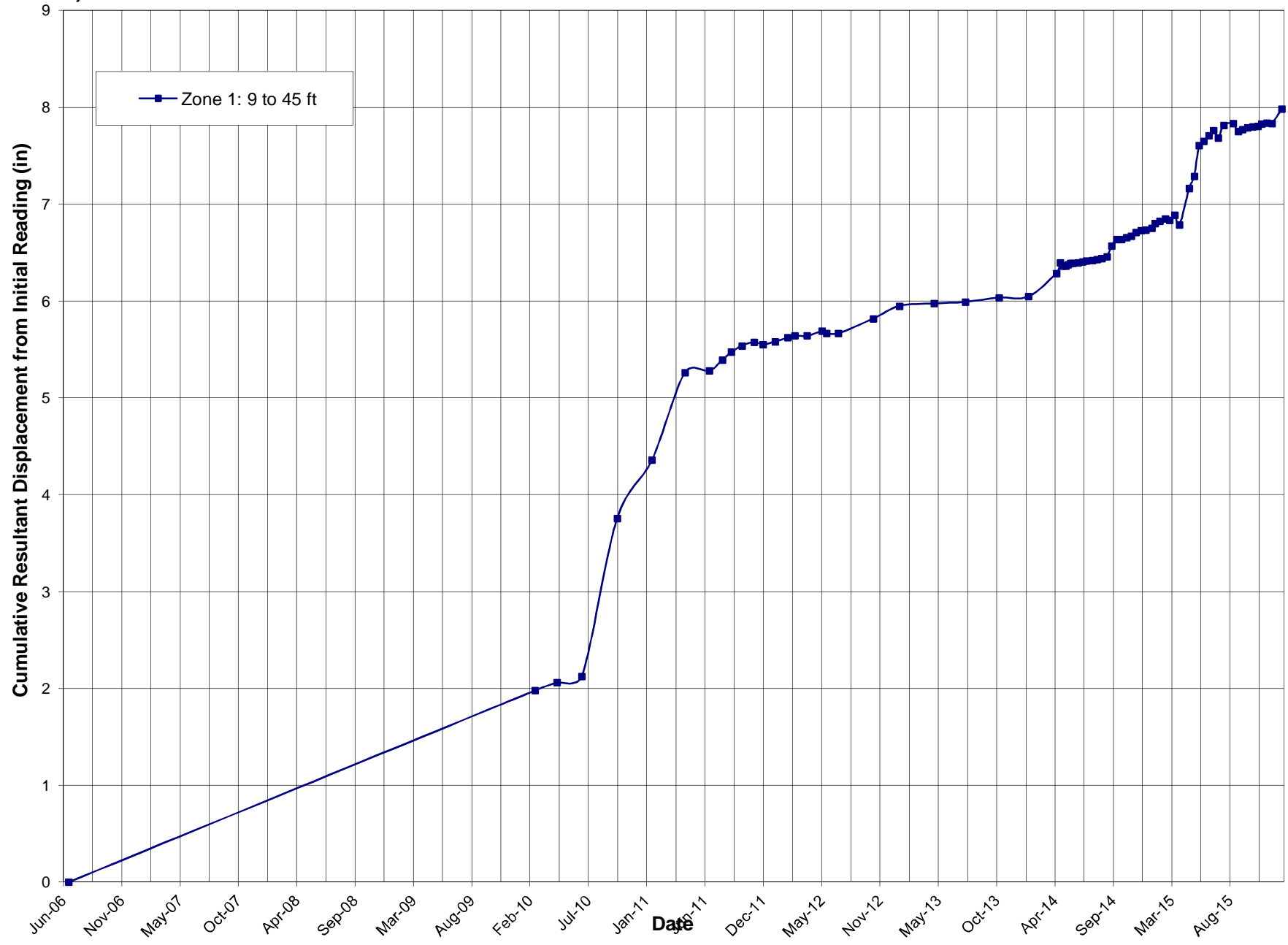


Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 15 09:19
Applied Azimuth : 0.0 degrees



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B-105A



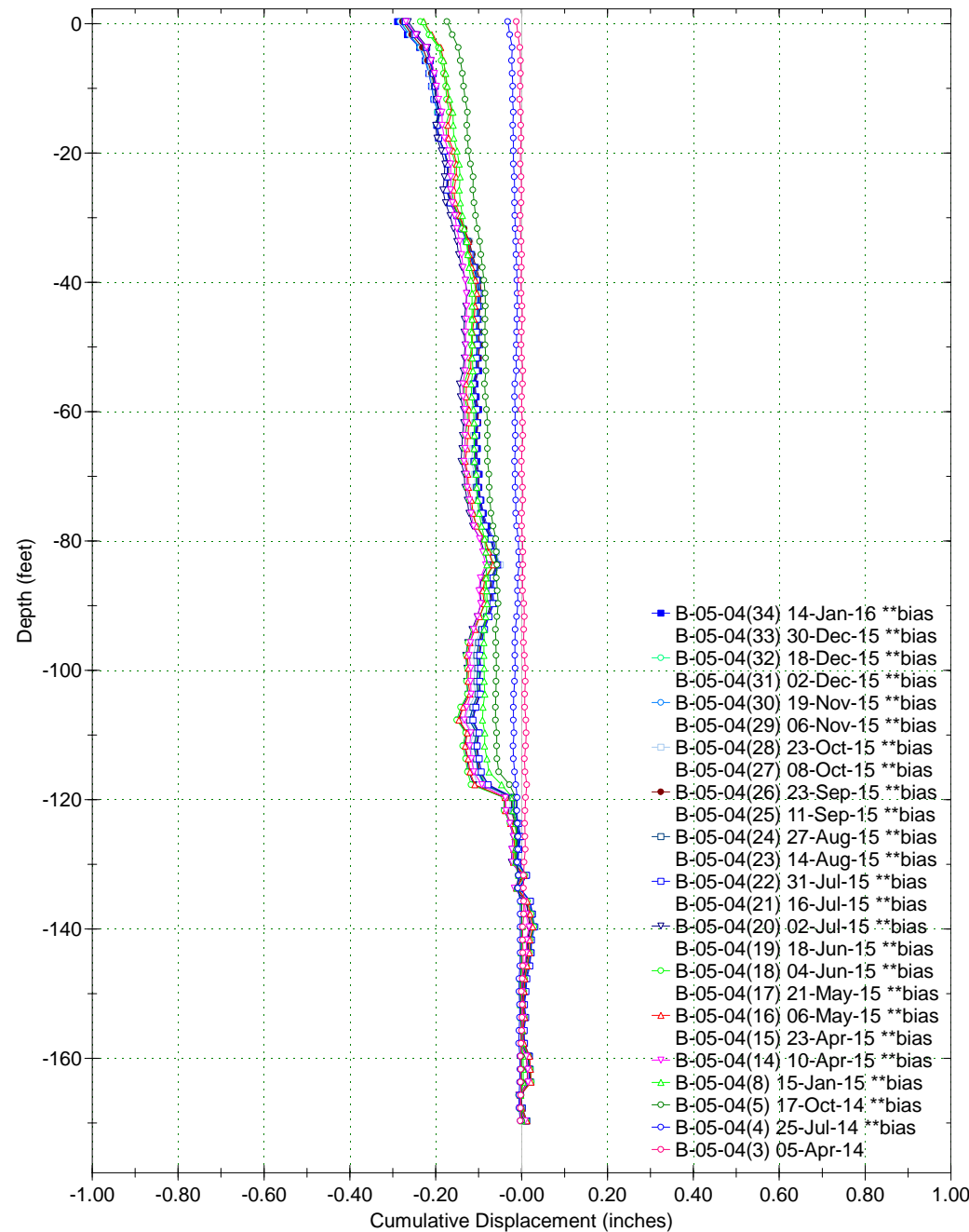
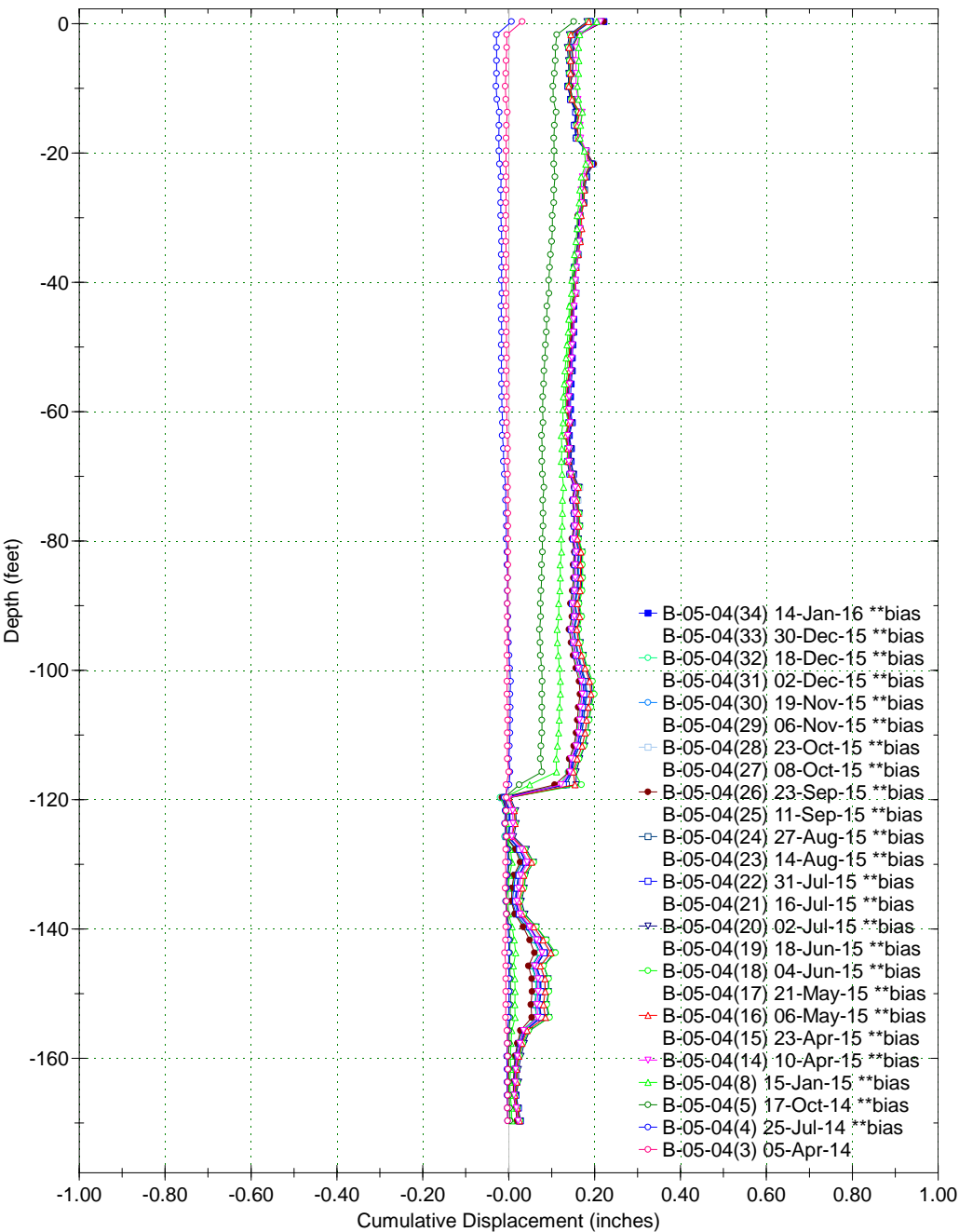
Borehole : B-05-04
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : Sta. 133+51.67
 Easting : 242.09' Rt of CL
 Collar :



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

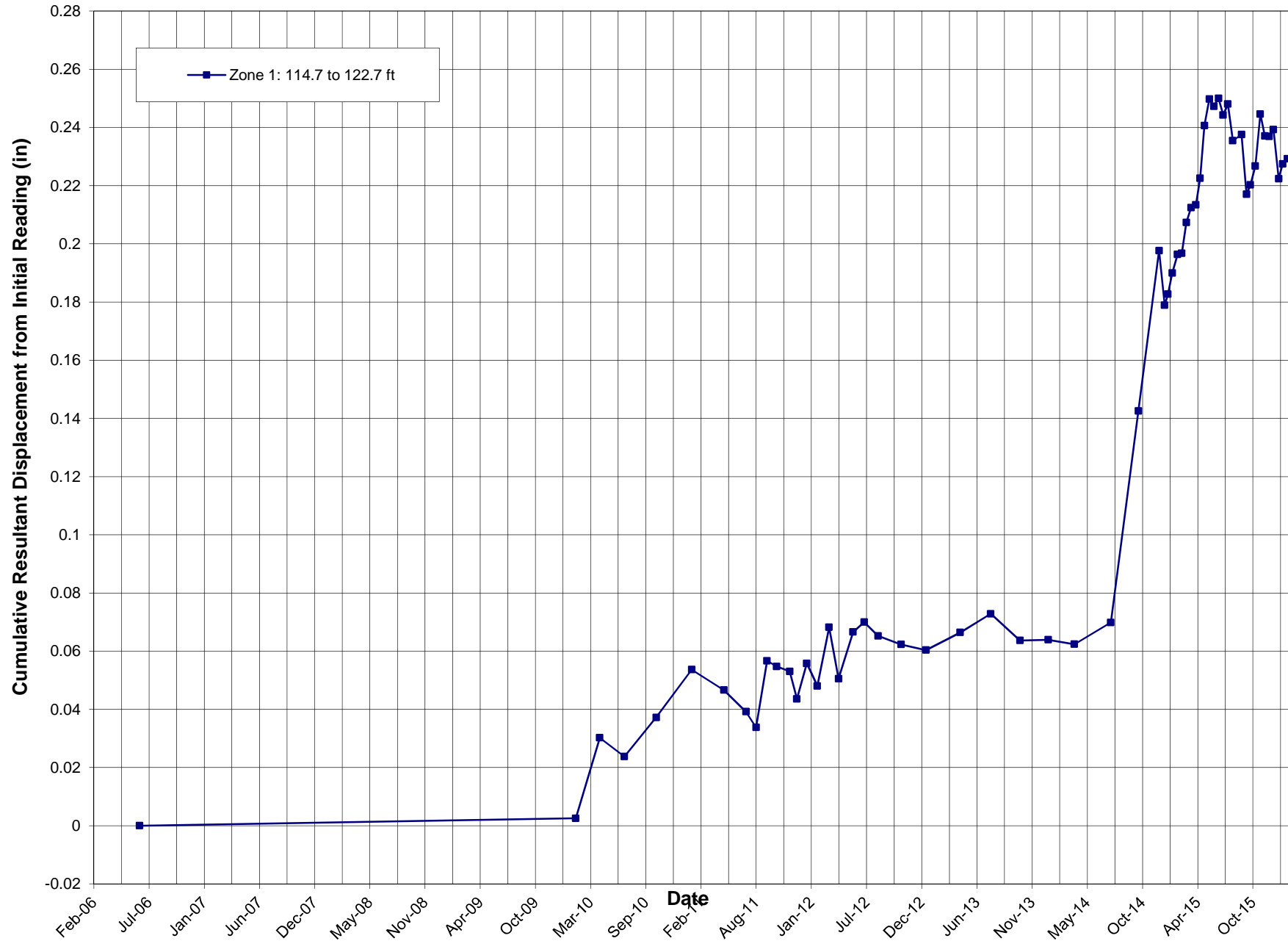
Axis - A

Axis - B



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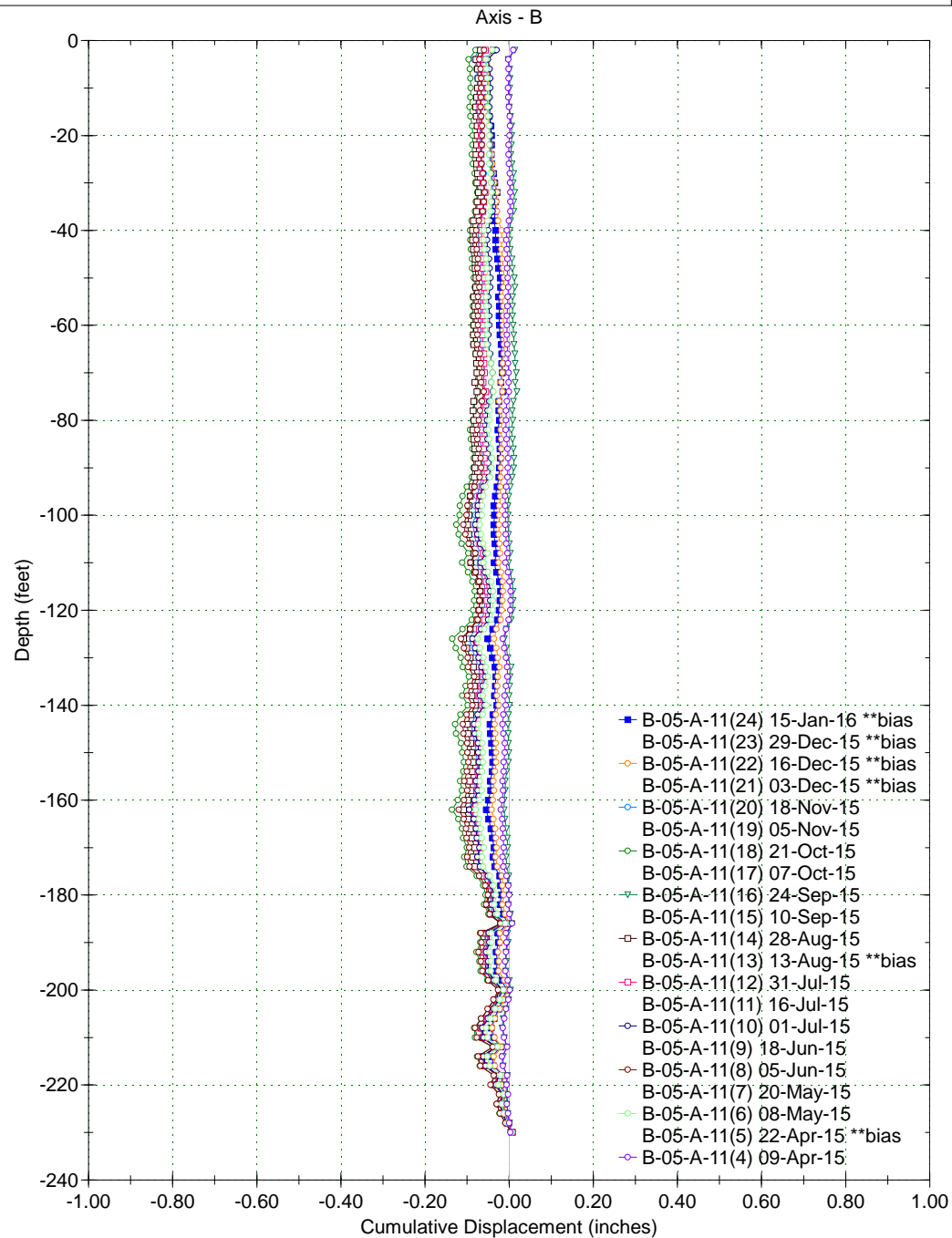
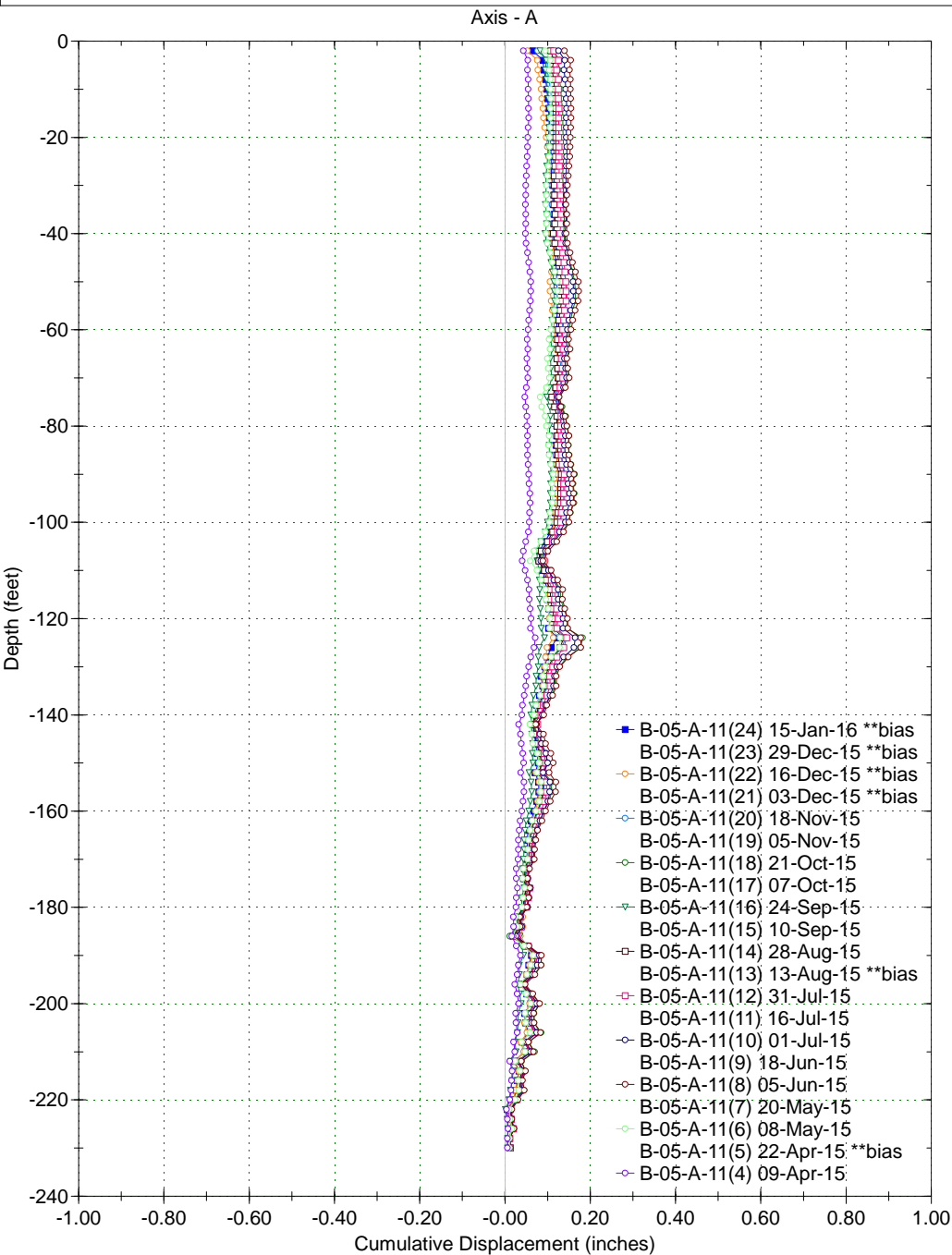
B-05-04



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



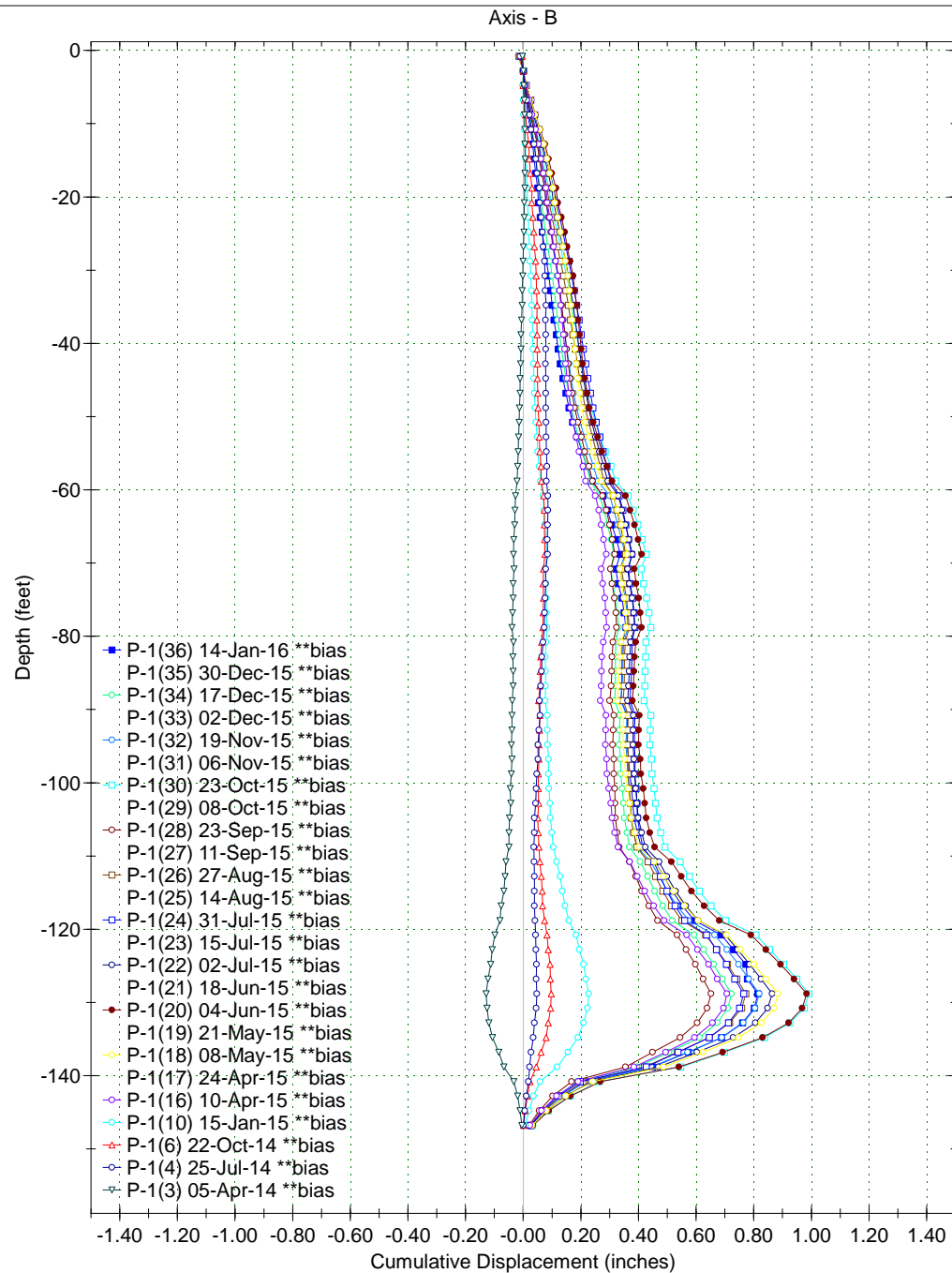
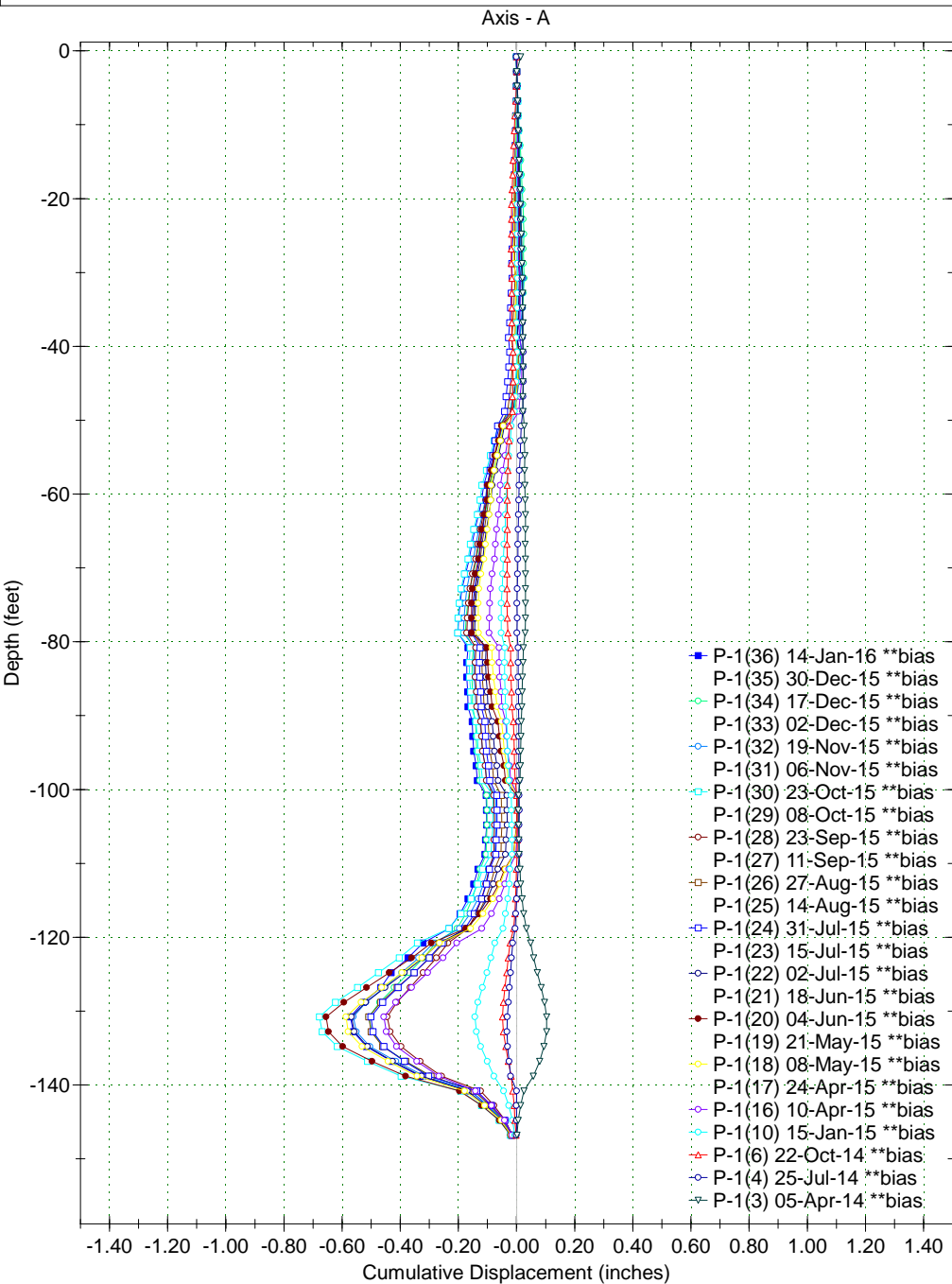
Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 230.0 feet
 A+ Groove Azimuth :
 Base Reading : 2015 Mar 19 09:08
 Applied Azimuth : 0.0 degrees



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

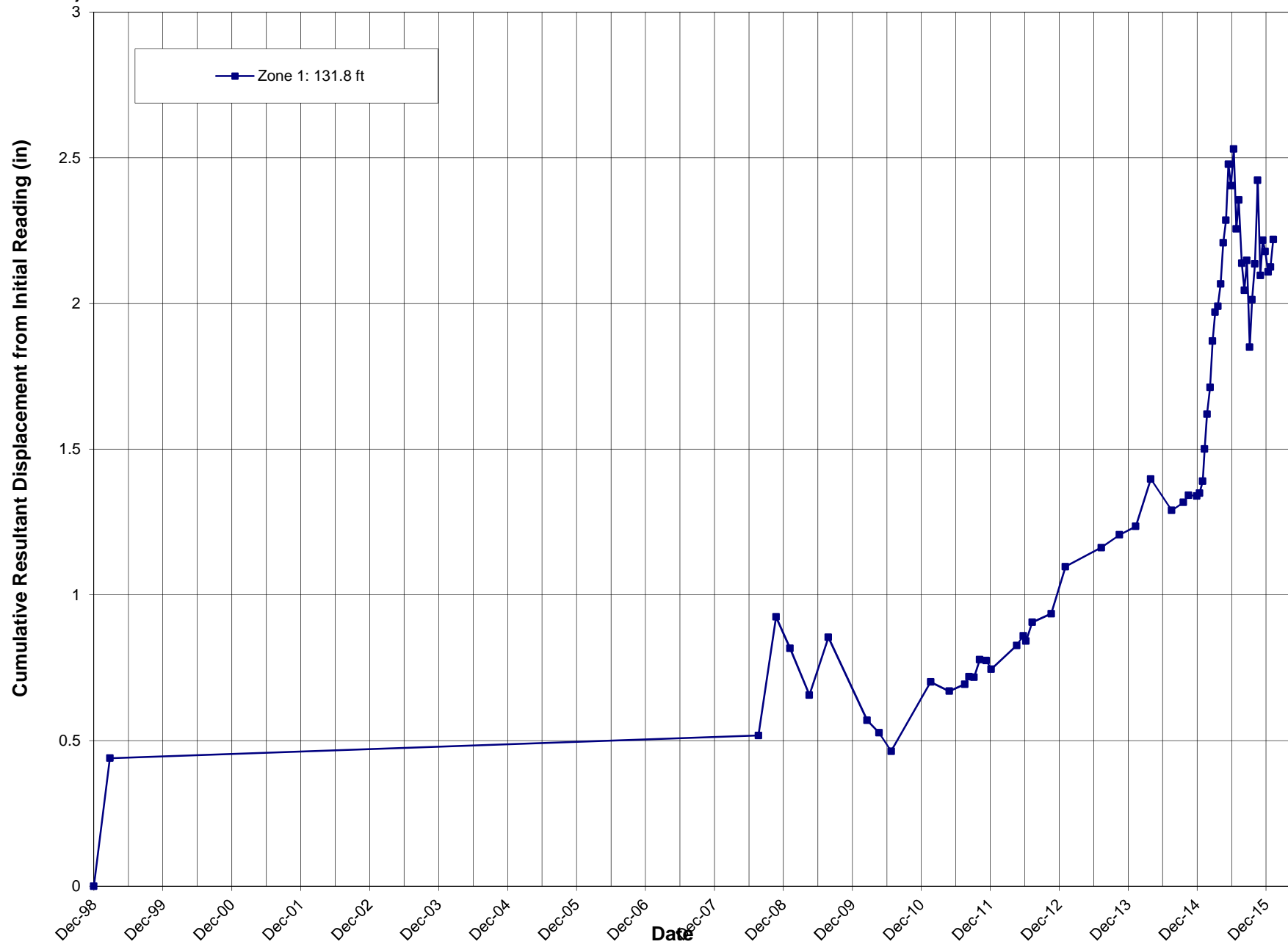


Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 10:47
Applied Azimuth : 0.0 degrees



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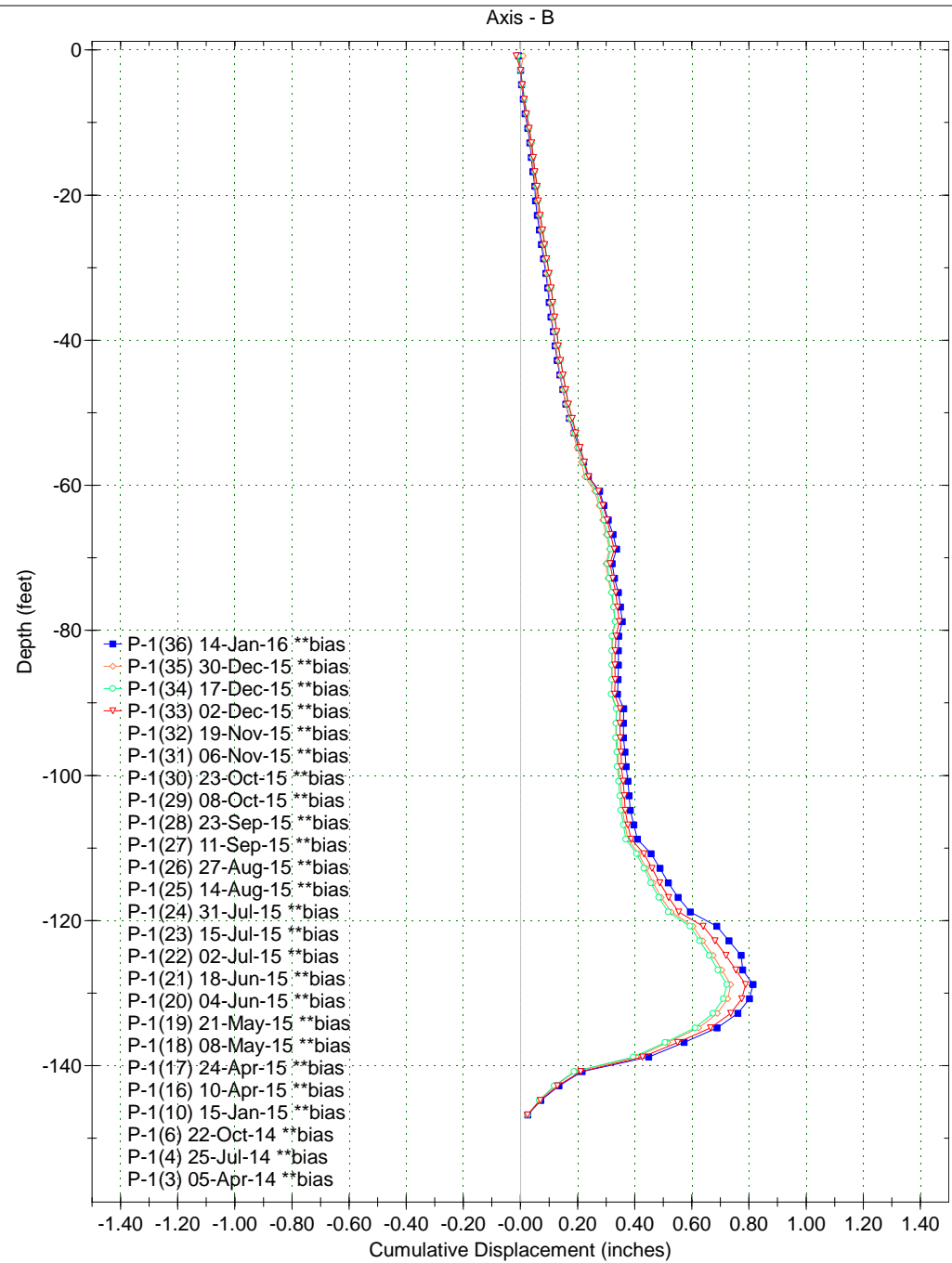
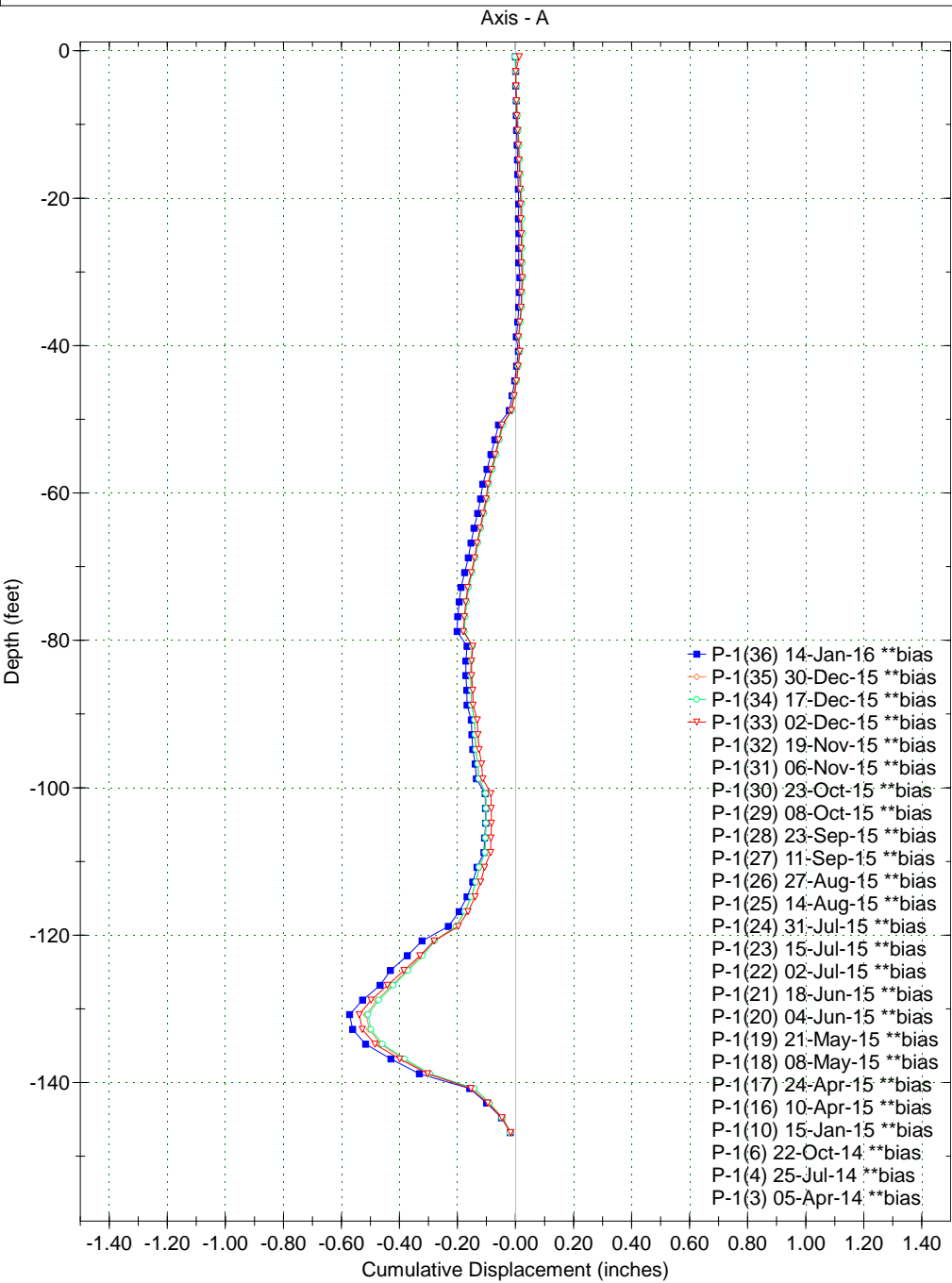
P-1



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



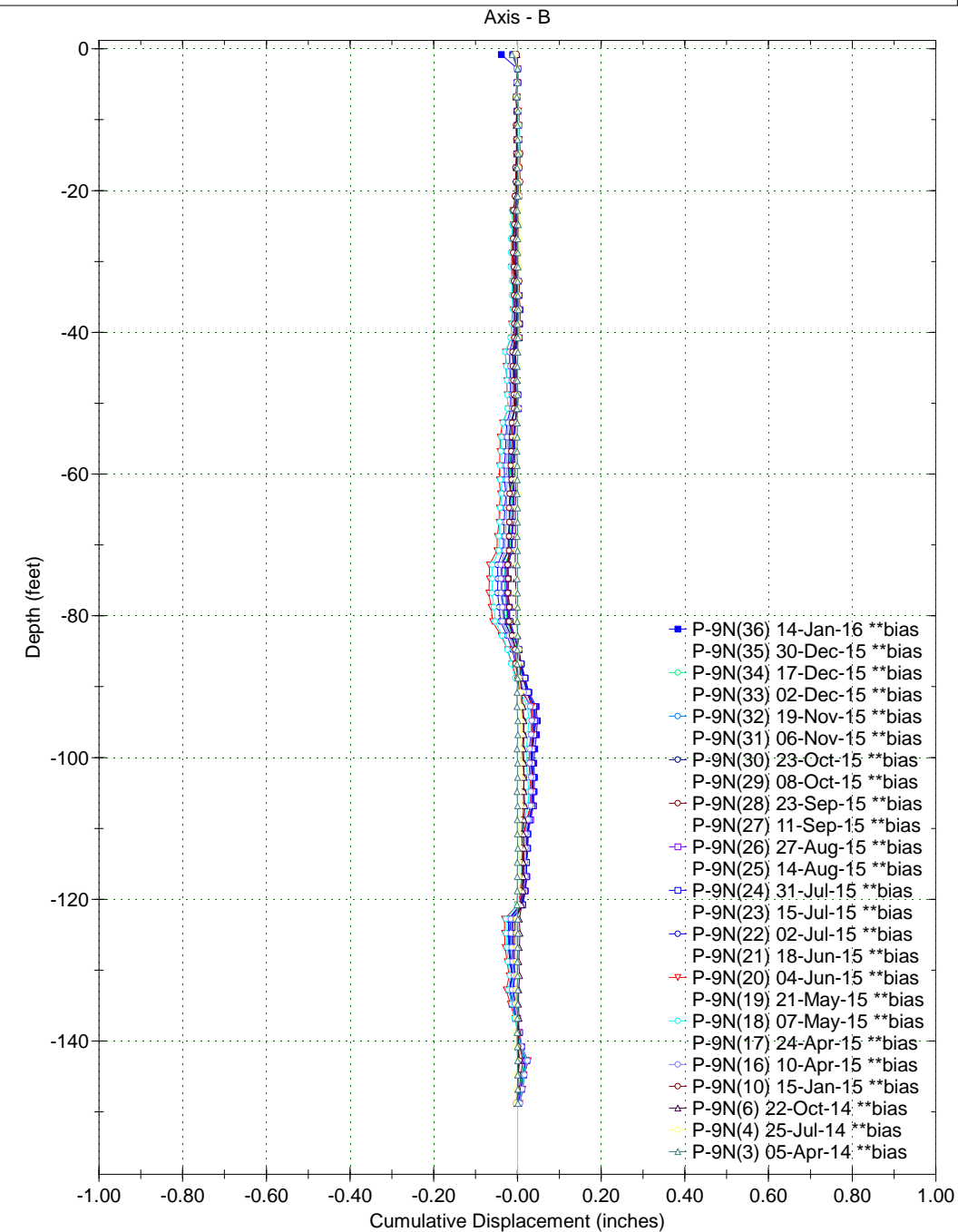
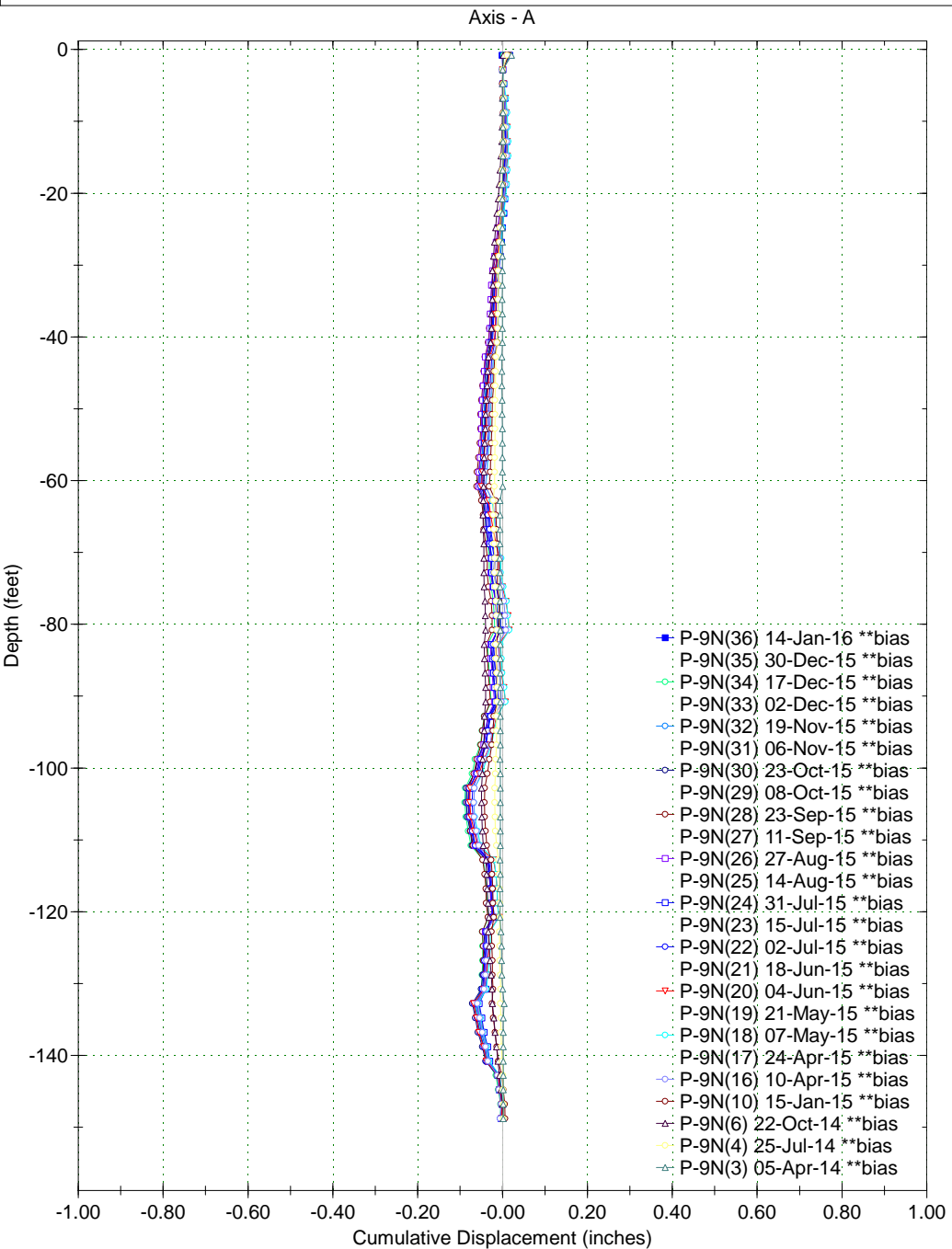
Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 10:47
Applied Azimuth : 0.0 degrees



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



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

