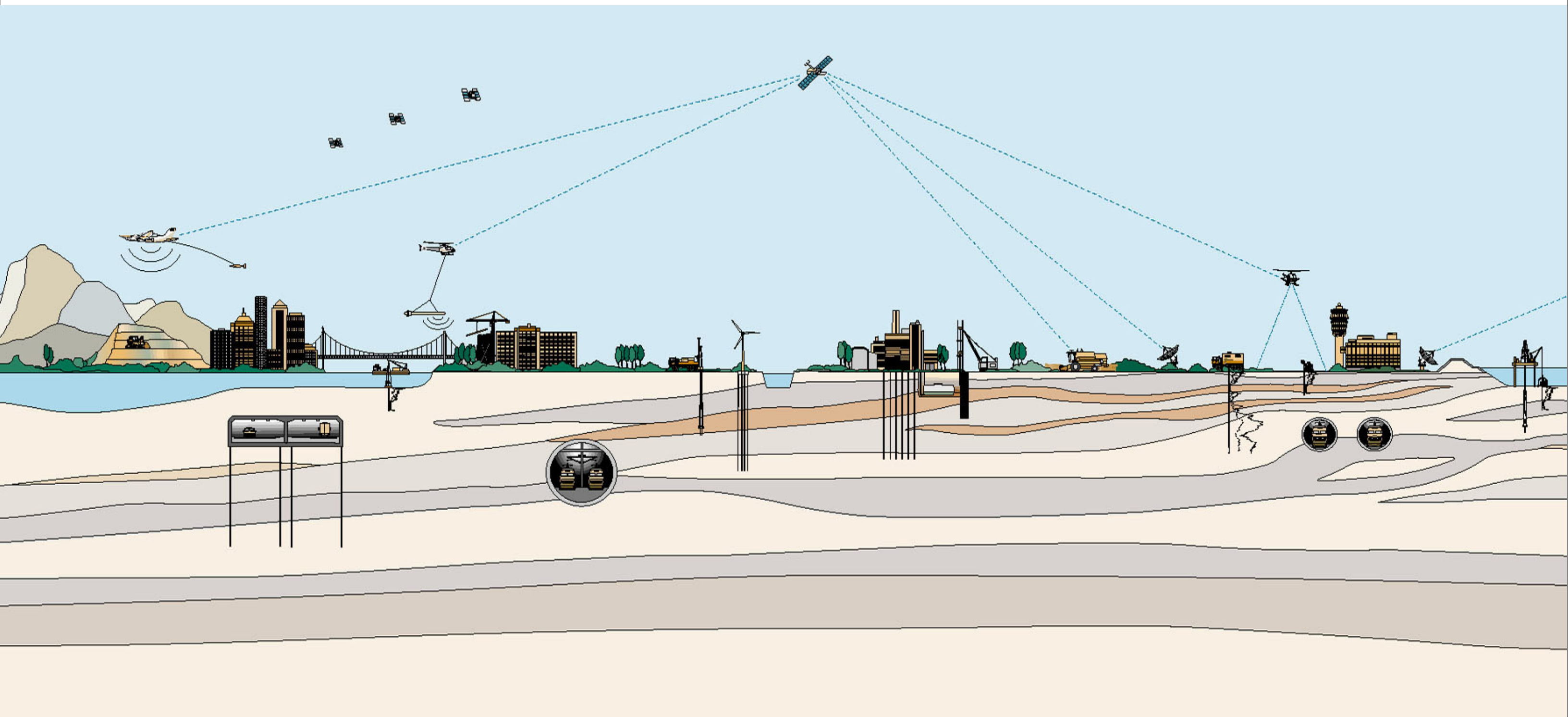
FUGRO CONSULTANTS, INC.

ANNUAL REPORT
JULY 2013 THROUGH JUNE 2014
BIG ROCK MESA LANDSLIDE
ASSESSMENT DISTRICT
MALIBU, CALIFORNIA

Prepared for:
City of Malibu

May 2015
Fugro Job No. 04.62140606



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May 20, 2015
Project No. 04.62140606

City of Malibu
23825 Stuart Ranch Road
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Attention: Mr. Rob Duboux

Subject: Annual Report, July 2013 through June 2014, Big Rock Mesa Landslide Assessment District, Malibu, California

Dear Mr. Duboux:

Fugro is pleased to present the annual report for the Big Rock Mesa Landslide Assessment District. This report summarizes the monitoring and maintenance activities completed during the period of July 2013 through June 2014.

Fugro appreciates this opportunity to serve the City of Malibu and the District homeowners. Please contact Christopher Dean at (310) 456-2489, x306 if you have any questions regarding this report.

Sincerely,

FUGRO CONSULTANTS, INC.

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1.0 INTRODUCTION

1.1 AUTHORIZATION

Fugro Consultants, Inc. (Fugro), performed the work summarized in this report in accordance with our contract with the City of Malibu (City) and consistent with the cost estimate document "Exhibit A - FY 2013-2014 Maintenance Cost Estimate" presented in the Annual Assessment Report (Taussig, 2013).

1.2 BACKGROUND

The Big Rock Mesa Landslide Assessment District (Assessment District) was established in 1989 by the County of Los Angeles (County) following the activation of the Big Rock Mesa landslide in 1983. The Assessment District provides permanent funding to maintain and monitor dewatering facilities with the purpose of reducing landslide movements. The County administered the Assessment District until 1991 when the City of Malibu (City) incorporated. The Assessment District was re-authorized in May 1998 under Resolution AD No. 98-030. The City has administered the Assessment District, utilizing consultants to maintain and monitor the district facilities.

1.3 SCOPE OF WORK

This annual report summarizes the current monitoring and maintenance of the geotechnical instrumentation and dewatering facilities for the period between July 1, 2013, and June 30, 2014 (hereinafter, the "monitoring period"). Fugro completed monitoring and maintenance activities summarized in this report.

Data collected during this monitoring period included the following:

- Annual Rainfall data from a local rain gauge at Big Rock Mesa, operated by the County of Los Angeles;
- Monthly groundwater level measurements from 28 standpipes and 16 pneumatic piezometers;
- Twice-monthly dewatering production readings from 23 dewatering wells;
- Monthly dewatering production readings from 31 horizontal drains (hydraugers);
- Quarterly ground deformation readings from 17 slope inclinometers (geotechnical instrumentation);
- Twice yearly ground deformation readings from 10 slope inclinometers;
- Monthly readings of water usage data from the Mesa's master flow meter; and
- Monthly water-quality sampling and analysis for National Pollution Discharge Elimination System (NPDES) compliance.

The operating condition of the instrumentation and dewatering facilities was checked during each field monitoring/observation event and by evaluating preliminary data in the office as they were received. Maintenance was performed as needed based upon the field observations and preliminary data evaluation.

The scope of services includes monitoring and maintenance of the Assessment District facilities and annual reporting. The services provided on an annual basis for the Assessment District do **not** include an engineering evaluation of the stability of the landslide.

1.4 REPORT ORGANIZATION

This report summarizes the monitoring data collected during the current monitoring period and presents conclusions regarding the annual monitoring results. The location of the Assessment District is illustrated on Plate 1, Site Location Map. Locations of the geotechnical instrumentation and dewatering facilities are shown on Plate 2, Assessment District Map. Tabulated and graphic summaries of monitoring data are presented in Appendices A through E.

1.5 REPORT AVAILABILITY

The annual Assessment District reports are available for review at Malibu City Hall. Reports may also be viewed on the City's website at http://www.malibucity.org.

2.0 MONITORING

2.1 RAINFALL DATA

Rainfall totals were tabulated based on recorded values from the Los Angeles County Rainfall Station 1239 - located at Big Rock Mesa. A graph of historical monthly rainfall and average annual rainfall is shown on Plate 3, Malibu Area - Monthly & Average Annual Rainfall.

Rainfall data indicate that approximately 5.17 inches of precipitation fell during the monitoring period from July 2013 through June 2014. The average annual rainfall from 1968 to 2014 in the Malibu area for the monitoring period July through June is approximately 15.7 inches.

Rainfall data are usually analyzed in terms of the annual "rain season" that covers the time period October 1 through September 30. Rainfall for October 1, 2013, through June 30, 2014, was approximately 5.13 inches. This is approximately 32 percent of the average annual rainfall of 15.7 inches for the rain seasons of 1968 through 2014.

2.2 MASTER WATER METER

Water usage data are collected by performing monthly readings at the master water meter near the intersection of Rockport Way and Big Rock Drive. The master water meter measures all imported water supplied to the Big Rock Mesa area by Los Angeles County Waterworks District 29. Processed readings are shown as a plot of flow rate versus time on Plate 4. Analysis of the data indicates the following:

- The recorded water usage rates are cyclic throughout the monitoring year reflecting higher levels of usage during the summer months.
- The trend of increased water consumption since about 1995 was interrupted with the reduced landscape irrigation during the extended high rainfall in the spring of 2005, 2006, and again in the winter of 2011.
- As illustrated on Plate 4, there has been a general increasing trend in water usage since about 1995. Average water usage during the 2013 through 2014 monitoring year, approximately 190,000 gallons per day (gpd), is approximately 11.9 percent more than the 2012 through 2013 monitoring year average of 170,000 gpd.

2.3 GROUNDWATER LEVEL MONITORING

The groundwater monitoring data collected during the current monitoring period are summarized in Appendix A. Groundwater levels fluctuate throughout the year, and from year to year, in response to natural and man-made influences. The primary natural influence is varying precipitation. Man-made influences include:

- Percolation from onsite wastewater treatment systems;
- Percolation from irrigation;
- Alterations to surface drainage by grading, landscaping, storm drains, and rain gutters;
- Inadvertent water discharges from leaking utilities (water, irrigation, sewer, storm drain) and swimming pools; and
- Dewatering activities including pumping dewatering wells and gravity-draining hydraugers.

Groundwater levels were typically measured in monitoring wells and pneumatic piezometers on a monthly basis. Monitoring data and graphs illustrating groundwater levels recorded in monitoring wells and pneumatic piezometers for the six physiographic regions of the Big Rock Mesa landslide are presented in Appendix A. Groundwater elevation maps for May 8, 1995, and May 2, 2014, are shown on Plate 5a. A map of the changes in ground water elevation between May 1995 and May 2014 is shown on Plate 5b. A map of the changes in ground water elevation between May 2013 and May 2014 is shown on Plate 5c.

Typically, groundwater levels rise relatively quickly following significant rainfall and gradually lower after the wet season ends. Groundwater levels recorded in the Assessment District typically peak around late-March to mid-April and gradually decline through late September to November.

The groundwater data were analyzed by evaluating changes that occurred during the monitoring period as well as changes in groundwater levels compared to historical averages (1984 through 2014). To analyze trends in seasonal groundwater fluctuations, the average (mean) annual and highest annual recorded groundwater elevation for each piezometer were calculated (Appendix A) and summarized on the following table:

Table 1. Summary of Average Groundwater Elevations by Area

	Total No. of Wells	No. of Wells with High[1] GW	2013-14 Average Groundwater Elevation (ft)	Change in Average Groundwater from Prior Monitoring Period Average (ft)	Average Peak Groundwater Elevation (ft)	Change from Prior Year (Area Average) (ft)
PCH Region	8	2	9.3	+0.9	9.8	+1.1
Bluff Region	4	1	54.5	-0.5	55.2	-3.2
Eastern Mesa	4	0	93.1	+0.6	93.6	+0.4
Central Mesa	8	3	195.0	+3.3	205.0	+3.0
Western Extension	4	1	387.7	-1.4	402.7	+13.4
Headscarp Region	1	1	551.4	+0.4	552.0	+0.2

1. *Wells are reported with "High" groundwater when either the Mean or Peak groundwater elevation was greater than one foot higher than the mean of the long-term average elevations (See Appendix A for data).
2. Results affected by exclusion of SP-20 and SP-21 from data set.

A summary graph of normalized peak groundwater elevations of each of the six regions in Big Rock Mesa is presented on the bottom graph of Plate 6. The top graph on Plate 6 shows the average dewatering output (gpd) and the annual departure from the mean rainfall. The average annual rainfall used for the chart was computed using all of the data from 1988 through the present. This graph illustrates that, since 2010-2011, annual rainfall has been decreasing. The state of California is enduring drought conditions. During the same period, the average dewatering output has been gradually decreasing.

2.3.1 Pacific Coast Highway (PCH) Region

The PCH Region parallels the coastal highway at the base of the bluff, including the area between the bluff and the Pacific Ocean. The PCH Region includes the southern boundary of the 1983 landslide. The Shoreline fault and landslide rupture surface define both a zone of weakness and a groundwater barrier, extending approximately along the same alignment as the highway.

Groundwater in most of the PCH Region was generally below long-term average levels (1991 through 2014) during the monitoring period. As noted in previous monitoring reports, standpipe SP-30 has shown a slow, steady rising groundwater level since the 1998 monitoring year (8.5’ in 1998-1999 to 15.7’ in 2009-2010). However, the groundwater level from the 2010-2011 year to present has stabilized (fluctuations of less than one foot). At the City’s request, Los Angeles County Water District 29 inspected the PCH region of the Assessment District looking for leaks or damage to any of their water line infrastructure. None were found. The mean groundwater level in standpipe SP-27A rose sharply from the previous monitoring year, from 10.5’ to 17.1’. Fugro will continue to monitor this well. Readings at the beginning of the new monitoring year (2104-2015) indicate the groundwater level returning to previous year's level.

2.3.2 Bluff Region

Along the Bluff Region, where intense ground cracking was observed during the 1983 landslide, the subsurface materials generally have a relatively high secondary permeability due to the level of fracturing.

Groundwater in the Bluff Region was generally below long-term average levels (1991 through 2014) during the monitoring period. The annual average groundwater level at standpipe SP-32 has been steadily increasing from 89.9' to 105.6' since the 2002 to 2003 monitoring period. However, the groundwater level from the 2008-2009 year to present has stabilized (fluctuations of less than two feet). Groundwater levels at standpipe SP-34 are significantly lower due to the installation of FW-2 in February 2010; current groundwater levels are approximately 1.2 feet below the previous monitoring period and approximately 34 feet below average, and are continuing to decline.

2.3.3 Eastern Mesa Region

The Eastern Mesa Region lies between the Bluff and Big Rock Mesa Drive east of the Piedra Chica cul-de-sac. Groundwater within this area occurs within low permeability deposits of the Sespe Formation.

Groundwater in the Eastern Mesa Region was below long-term average levels (1991 through 2014) during the monitoring period. Average groundwater levels for standpipes SP-3 and SP-3A increased slightly from the previous monitoring period, except for the increase in groundwater level in SP-3 from 2010-2011 to 2011-2012. The groundwater levels in standpipes PC-1 and SP-33 remained essentially the same from the previous monitoring period. Groundwater levels have been generally decreasing since the installation of FW-1 in May 2008.

2.3.4 Central Mesa Region

The Central Mesa Region lies between the Bluff and Big Rock Mesa Drive and to the west of the Piedra Chica cul-de-sac. Groundwater within this area generally occurs within moderately permeable landslide deposits derived from the Topanga Formation.

Groundwater in the Central Mesa Region was generally below long-term average levels (1991 through 2014) during the monitoring period, except for standpipes SP-9A, SP-24, and SP-35, where groundwater levels were higher. The average groundwater level in standpipe SP-24 rose 51' from the previous monitoring period, and is approximately 44 feet above the long-term average groundwater level. The higher groundwater level in this well can most likely be attributed to a blockage in the conveyance line for Hydraugers HD-10 and HD-11, discovered in early summer 2014. Water was backed up in the hydraugers until the blockage was repaired, and hydrauger flows returned to normal. Standpipe SP-16A has shown a significant decrease in groundwater levels over the previous monitoring period (19.4'), and is 13 feet below the long-term average groundwater level (142.9’). The groundwater level within this well historically exhibits significant fluctuations and is significantly lower than the levels recorded between 2004 and 2009.

2.3.5 Western Extension Region

The Western Extension Region encompasses approximately 79 acres, from PCH on the south to the upper ridgeline on the north, immediately west of the active 1983 Big Rock Mesa Landslide area.

Groundwater level data for SP-20 and SP-23 from May 2012 through the end of the reporting year is inconsistent with anticipated groundwater levels. The apparent reason for the inconsistency appears to be a combination of factors, including the use of a new groundwater sounder, data entry, and false positive readings due to residual moisture from seepage or other sources.

The average groundwater levels at SP-20 and SP-23 have been variable from monitoring year to monitoring year since 1998, and have not returned to pre-1998 levels.

The average groundwater level at SP-21 has increased since the 1997-98 monitoring period by about 1 foot per year. The groundwater level has not returned to pre-1998 levels (El Nino rainfall year).

The average groundwater level at SP-22 has gradually decreased during the last three monitoring periods, returning to the pre- 1997-98 monitoring period level.

2.3.6 Headscarp Region

The ground surface elevation in the Headscarp Region is higher than other regions in Big Rock Mesa, and groundwater is relatively deep. The average groundwater level in standpipe SP-26 was slightly higher than the long term average level (1991 through 2014) during the monitoring period. Groundwater levels have not returned to pre-2005 or pre-1998 levels, and the average groundwater level for the current monitoring period is approximately 0.4 feet higher than the previous monitoring period.

2.4 DEWATERING WELL PRODUCTION

The total production rate for all dewatering wells from 1984 through June 2014 is depicted on Plate 4. Dewatering well production rates for individual wells are presented on Plates B-1 through B-4 (Appendix B).

The average total well production rate for the monitoring period was approximately 47,108 gpd. This is approximately 1.0 percent less than the previous year's monitoring period value of 47,555 gpd, and below historical average production of 55,218 gpd measured from 1993 to the present.

2.5 HYDRAUGER PRODUCTION

The total production rate for all hydraugers from 1993 through June 2014 is depicted on Plate 4. Additional data regarding hydraugers and production rates are presented in Appendix C, Plates C-1 through C-4.

The average total hydrauger production rate over the monitoring period was approximately 9,002 gpd. That represents a 30 percent decrease in production relative to the previous monitoring period (11,718 gpd). Hydraugers produced below historical average volumes of water throughout the monitoring period. Because hydraugers rely on gravity and water pressure (related to elevated groundwater table) for water production, hydraugers generally produce lower volumes during lower rainfall periods. Hydraugers typically respond well to years of higher than average rainfall; production generally increases at a rapid rate immediately following larger rain events.

2.6 SLOPE INCLINOMETERS

Fugro monitored 17 slope inclinometers on a quarterly basis and 10 additional inclinometers on a semi-annual basis to check for subsurface ground deformation through June 2014.

Slope inclinometer measurement plots are presented in Appendix D. Four slope inclinometer plots are prepared for all inclinometer installations. The first plot, for each inclinometer, shows the cumulative deflection and incremental deflection for the A-direction and the second plot shows the cumulative deflection and incremental deflection for the B-direction. Those two plots show approximately one curve per year from about 2006 through the current monitoring year. The third and fourth plots show displacement versus time for the same period, but all of the intermediate readings are also included on those plots.

When reviewing and interpreting the slope inclinometer data plots, instrument limitations and movement history should be considered. Individual plots have been reviewed and interpreted with regard to movement along identified slide planes. Interpreted movement along the identified slide planes is summarized on Plate D-1 in Appendix D. Some slope inclinometer plots show minor amounts of displacement measured at the ground surface during the 2013 through 2014 monitoring period. Measurement along identified slide planes during the 2013 through 2014 monitoring period is less than 0.2 inch.

Interpretation of inclinometer data shows measurable ground movement in only 2 of the 29 inclinometers monitored during the 2012 through 2014 monitoring period. SP-11 shows a change of 0.1 inch from the surface to a depth of 25 feet; and SP-33 shows a cumulative change of approximately 0.20 inch at the ground surface. These two inclinometers penetrate the basal rupture surface of the landslide. Several inclinometers show some change (<0.1 inch), but the potential movement magnitude and orientation is not clear and is not within the reliable accuracy of the instrument.

A brief summary of each region is presented below and is summarized on Plate D-1. It is important to keep in mind the high sensitivity of the inclinometer probes and the magnitude of the interpreted movements when reviewing the inclinometer data presented in this report. Plate D-1 notes the depths at which movement has been interpreted in the past, as well as whether the inclinometer penetrates the basal rupture surface. Shallower depths of historically interpreted movement above the base of the Big Rock Mesa Landslide have also been noted.

2.6.1 PCH Region

The PCH Region extends along PCH in proximity of the southern boundary of the 1983 landslide. SP-11 shows a change of 0.1 inch from the surface to a depth of 25 feet during the monitoring period. The remaining wells in the region show offsets ranging from insignificant to none.

2.6.2 Bluff Region

The Bluff Region extends along the top of the slope immediately to the north of the PCH Region where intense ground cracking was observed during the 1983 landslide. The inclinometers in that area are deep and show evidence of depth position errors, probably associated with ground settlement and/or cable stretch. No significant offsets within the inclinometers in the Bluff Region were observed.

2.6.3 Eastern Mesa Region

The Eastern Mesa Region extends west to the ends of Inland Lane and Piedra Chica cul-de-sac. This area is bordered to the north by Big Rock Drive and to the south by the Bluff Region. The inclinometers in that area are deep and show evidence of depth position errors, probably associated with ground settlement and/or cable stretch. No significant offsets within the inclinometers in the Eastern Mesa Region were observed. However, SP-33 has shown indications of movement within the upper 100 feet and PC-1 has shown indications of minor movement at a depth of about 140 feet.

2.6.4 Central Mesa Region

The Central Mesa Region is located between the Bluff and Big Rock Mesa Drive and to the west of the Piedra Chica cul-de-sac. The inclinometers in that area are deep and show evidence of depth position errors, probably associated with ground settlement and/or cable stretch. No significant offsets within the inclinometers in the Central Mesa Region were observed. However, SP17B has shown indications of minor movement at a depth of about 200 feet and SP-24 has shown indications of movement within the upper 70 feet.

2.6.5 Western Extension Region

The Western Extension Area encompasses approximately 79 acres, from PCH on the south to the upper ridgeline on the north, immediately west of the 1983 Big Rock Mesa landslide area. The inclinometers in that area are deep and show evidence of depth position errors, probably associated with ground settlement and/or cable stretch. No significant offsets within the inclinometers in the Western Extension Region were observed.

2.6.6 Headscarp Region

The Headscarp Region borders the Central Mesa Region to the north. Typically within the Assessment District, SP-26, the only inclinometer in this region is first to move and the last to cease movement in response to heavy rainfall. The inclinometer in that area is deep and shows evidence of depth position errors, probably associated with ground settlement and/or cable stretch. No significant offsets within SP-26 in the Western Extension Region were observed. Past movement has occurred along the identified slide plane between a depth of 120 and 130 feet and from shallow depths of 25 and 45 feet reflecting a smaller "headscarp" landslide.

2.7 WATER QUALITY MONITORING

2.7.1 Regional Board Requirements

Water quality monitoring was completed in general compliance with the NPDES permit, as required by the California Regional Water Quality Control Board (RWQCB).

On March 2, 2004, the RWQCB issued General NPDES permit CAG994004, Order No. R4-2003-011. On October 3, 2008, Order No. R4-2003-0111 was superseded by Order No. R4-2008-0032 providing revised requirements for sampling and analysis. Residual chlorine was not sampled until the end of the second quarter 2010. A revised permit was issued to the City in October 2010 requiring all sites to be sampled monthly for all constituents, except for Acute Toxicity, which is sampled annually.

Fugro completed quarterly sampling under the revised permit. The data collected and reports submitted are presented in Appendix E.

Water produced by dewatering wells and hydraugers is discharged to one of several storm-drain conveyance lines. Usually, several wells and hydraugers discharge to each storm-drain line. Other sources of water are also collected by the storm-drain system including storm water runoff (during and following precipitation), irrigation runoff, domestic use surface runoff from car washing and hosing-off of driveways, illicit discharges, groundwater seepage, and other possible unidentified sources.

Prior to 2004, samples were collected from storm drain outlets. In November 2004, sampling locations were changed prior to fourth quarter collection of the 2004 monitoring year because the samples collected from storm drains represent discharge from uncontrolled sources in addition to dewatering discharge. The samples are currently collected directly from the dewatering system discharge lines (wells and hydraugers). That change in sampling methodology should be noted when comparing recent water quality data to data collected before the 2004 through 2005 monitoring period.

2.7.2 Water-Quality Results

Results of water quality sampling and analyses for the monitoring period are presented in Appendix E. Water quality monitoring conducted in general conformance with the requirements of the RWQCB NPDES Permit indicated that all monitored discharges during the monitoring period were in compliance except for sulfides and BOD during the second quarter of 2014. Results for sulfides from the five weekly follow-up samples also exceeded effluent limits. Results for BOD for two weekly follow-up samples did not exceed the daily maximum effluent limit. Historically, discharges from the dewatering wells and hydraugers generally meet discharge requirements; however, they have been periodically out of compliance for pH, residual chlorine, acute toxicity, and settleable solids.

3.0 DEWATERING FACILITY MAINTENANCE

3.1 CAPITAL IMPROVEMENTS

No capital improvements were performed during the monitoring period.

3.2 FACILITY MAINTENANCE

The operating status of each dewatering well and hydrauger was checked monthly. When necessary, repair work was scheduled and undertaken as expeditiously as reasonable - typically within a matter of a few hours to a few days of identifying a problem. Generally, repairs and maintenance consisted of brush clearance, cleaning, and well pump and electrical repairs.

4.0 SUMMARY AND CONCLUSIONS

4.1 ANNUAL SUMMARY

The status of the Big Rock Mesa Landslide Assessment District can be summarized as follows:

- The groundwater level in the Big Rock Mesa landslide is the primary factor controlling the stability of the landslide mass. Rises in groundwater level tend to destabilize the landslide. Previous episodes of movement of the landslide have been directly related to high groundwater levels. Therefore, controlling the long-term average and peak groundwater levels in the landslide mass is the primary means available to reduce future movements of the landslide. The primary factors influencing recharge of groundwater to the landslide are: 1) Onsite wastewater treatment system discharge, 2) Rainfall, 3) Irrigation, and 4) Water-line and pool leakage.
- Monitoring data related to rainfall and imported water usage indicate the following:
    - This year's rainfall was well below average with 5.17 inches of precipitation. Rainfall during the monitoring period was below the historical average of 15.7 inches per year measured from 1968 through 2014.

 - Use of imported water increased approximately 11.9 percent from the previous monitoring year (190,000 gpd vs 170,000 gpd) and is 62 percent above the average usage in 1984 (117,400 gpd).

- Groundwater levels in 29 monitoring wells were measured regularly during the monitoring period. Average groundwater levels and/or peak groundwater levels measured during the monitoring period were more than 1 foot above long term average groundwater levels for 9 of the 28 wells and piezometers.
- Groundwater levels in the western region have been variable since 1998. This area of approximately 79 acres is dewatered by two wells and five hydraugers; however, over seventy percent of the production is provided by one well, W-18.
- Groundwater levels in SP-30 along Pacific Coast Highway reflect a long term trend of increasing groundwater levels, although the groundwater level from the 2010-2011 year to present has stabilized (fluctuations of less than one foot). No dewatering facilities have been constructed along Pacific Coast Highway.
- The average total well production rate for the monitoring period was approximately 47,108 gpd. This is a 1.0 percent decrease compared to the previous year's monitoring period value of 47,555 gpd, and below historical average production of 55,218 gpd measured from 1993 to the present.
- The average total hydrauger production rate over the monitoring period was approximately 9,002 gpd. This represents a 30 percent decrease in production relative to the previous monitoring period (11,718 gpd).
- Interpretation of inclinometer data shows measurable ground movement in only a few of the inclinometers monitored during the 2013 through 2014 monitoring period. For example, SP-11 shows a change of 0.1 inch from the surface to a depth of 25 feet and SP-33 shows a change of 0.20 inch at the ground surface. Those two wells penetrate the basal rupture surface of the landslide. Several inclinometers show some minor change (<0.1 to <0.2 inches), but the potential movement magnitude and orientation is generally not significant and is not within the reliable accuracy of the instrument considering that there is evidence of depth position errors associated with settlement and/or cable stretch in the deep inclinometers.
- Water quality monitoring, conducted in general conformance with the requirements of the RWQCB NPDES Permit, indicate that discharges from the dewatering wells and hydraugers were generally in compliance with discharge permit limits, except for sulfides and BOD in the second quarter of 2014.
- Routine maintenance was conducted throughout the year on the dewatering wells and hydraugers. Ongoing maintenance and repair work is essential to maintaining the capacity of the dewatering system. No unusual maintenance issues were encountered.

4.2 CONCLUDING COMMENTS

It is important to recognize that the dewatering facilities installed over the preceding decades are aging and require increasing maintenance and regular replacement. The anticipated lifespan of an average hydrauger is measured in years, not decades. Dewatering wells may last from a few years to several decades. In order to maintain peak efficiency of the horizontal drains and wells, cleaning and re-development of the dewatering system should be conducted on a regular basis.

Particularly, the combination of increasing groundwater levels and limited production and redundancy of dewatering facilities in the western region is of primary concern. All dewatering facilities within this region should be reviewed on an individual basis and repaired or replaced as necessary in an effort to help keep groundwater levels as low as possible.

The geology throughout the Assessment District is not uniform and varies from one location to another. Areas of low permeability, such as in the Eastern Mesa Region, can limit the dewatering production of individual facilities.

Water conservation throughout the Big Rock Mesa area is essential to reduce groundwater recharge. As previously stated, rainfall and imported (household) water usage are the primary sources of groundwater recharge and are the primary factors controlling the movement of the landslide. Seasonal rainfall is beyond the control of homeowners and the City, therefore, water conservation is the most critical remaining means of controlling groundwater recharge on the Mesa.

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______ (2009), "Annual Report, July 2008 through June 2009 Malibu Road Landslide Assessment District, Malibu, California," dated October 2009.

______ (2008), "Annual Report, July 2007 through June 2008 Malibu Road Landslide Assessment District, Malibu, California," dated August 2008.

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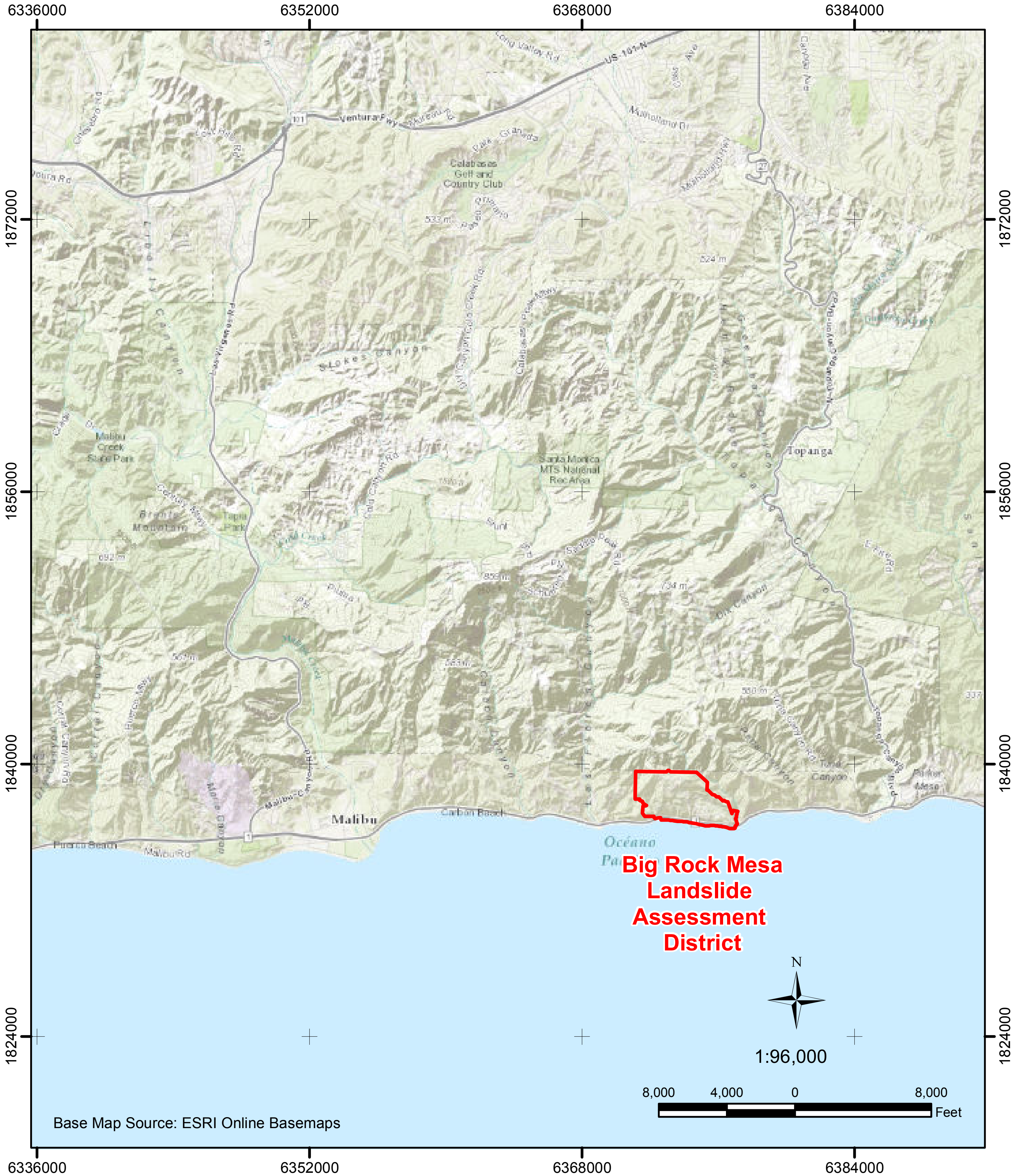
_____ (2005), "Annual Report, July 2004 through June 2005, Big Rock Mesa Landslide Assessment District, Malibu, California," dated October 2005.

_____ (2004), "Annual Report, July 2003 through June 2004 Malibu Road Landslide Assessment District, Malibu, California," dated November 2004.

PLATES

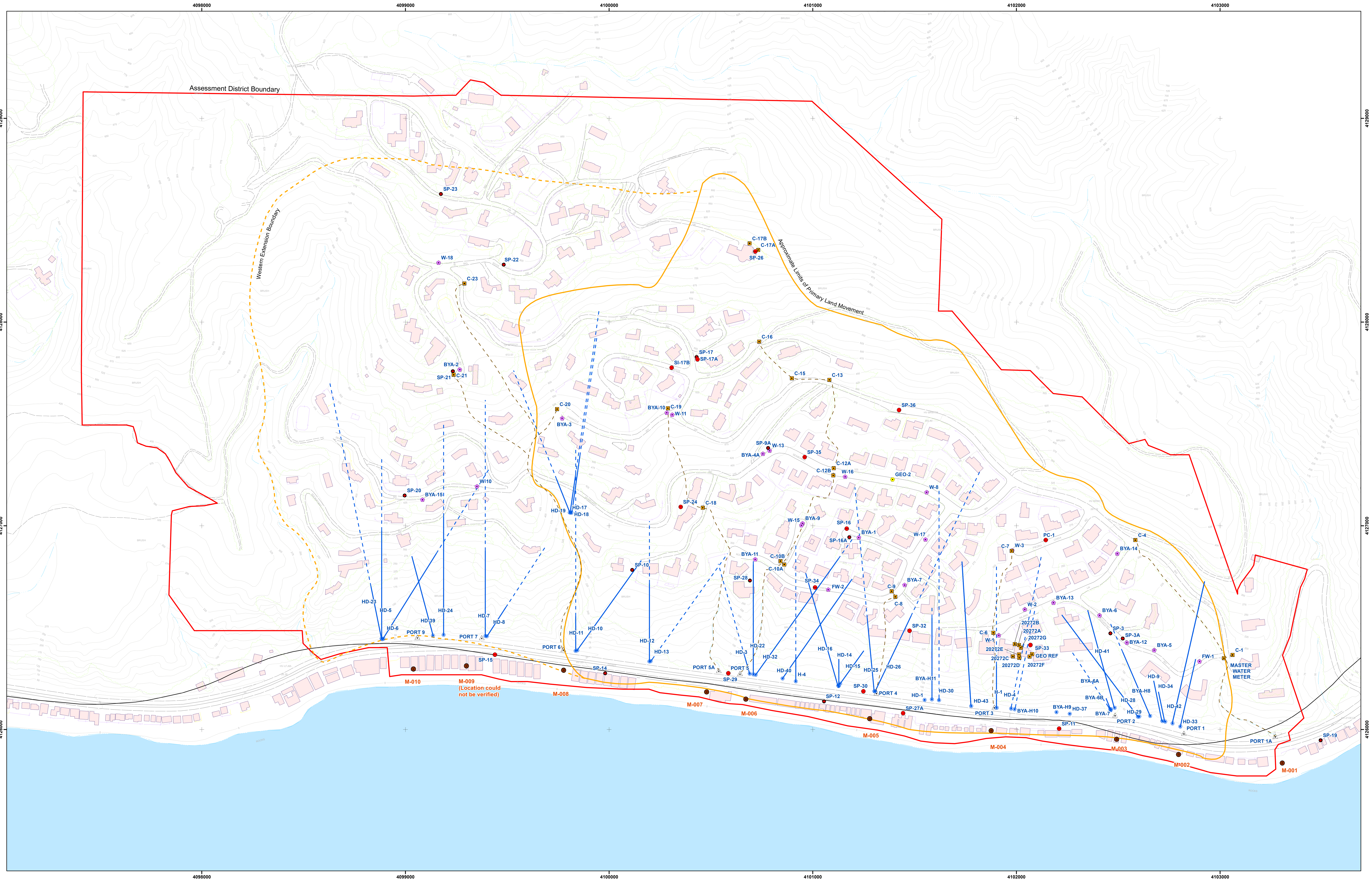


SITE LOCATION MAP

Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE 1

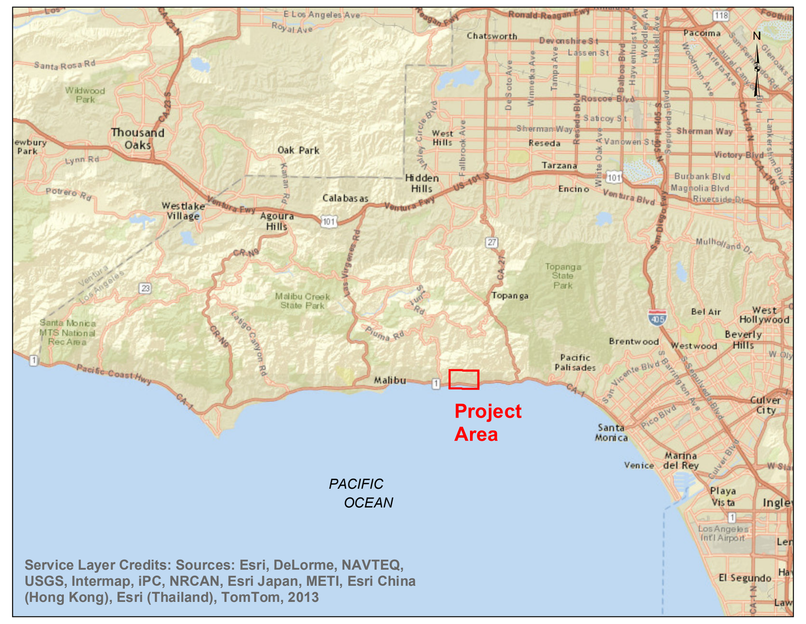
N:\Projects\04_2014\04_6214_0606_City_of_Malibu_BigRockMesa\Outputs\2014_01_02_AnnualReport\MXD\Plate-01_SiteLocation.mxd, 4/13/2015, wcupples



ASSESSMENT DISTRICT 98-1
BIG ROCK MESA
MALIBU, CALIFORNIA

ASSESSMENT DISTRICT MAP

FUGRO CONSULTANTS, INC.
4820 McGrath St., Suite 100, Ventura, California 93003
Tel: (805) 650-7000, Fax: (805) 650-7010



LEGEND

- Dewatering Well
- Slope Inclinometer that does not Penetrate Rupture Surface
- Slope Inclinometer that does Penetrate Rupture Surface
- Piezometer
- GPS Monument
- Hydrauger Discharge Point
- Storm Drain Outfall
- Catch Basin
- Hydrauger
- Approximate Limits of Primary Land Movement
- Western Extension Boundary
- Big Rock Mesa Landslide Assessment District Boundary
- Storm Drain
- Trees/Brush
- Streams
- Building
- Coordinate Grid: California State Plane, Zone 7, NAD 27, Feet
  Vertical Datum: NAVD88 Feet

N

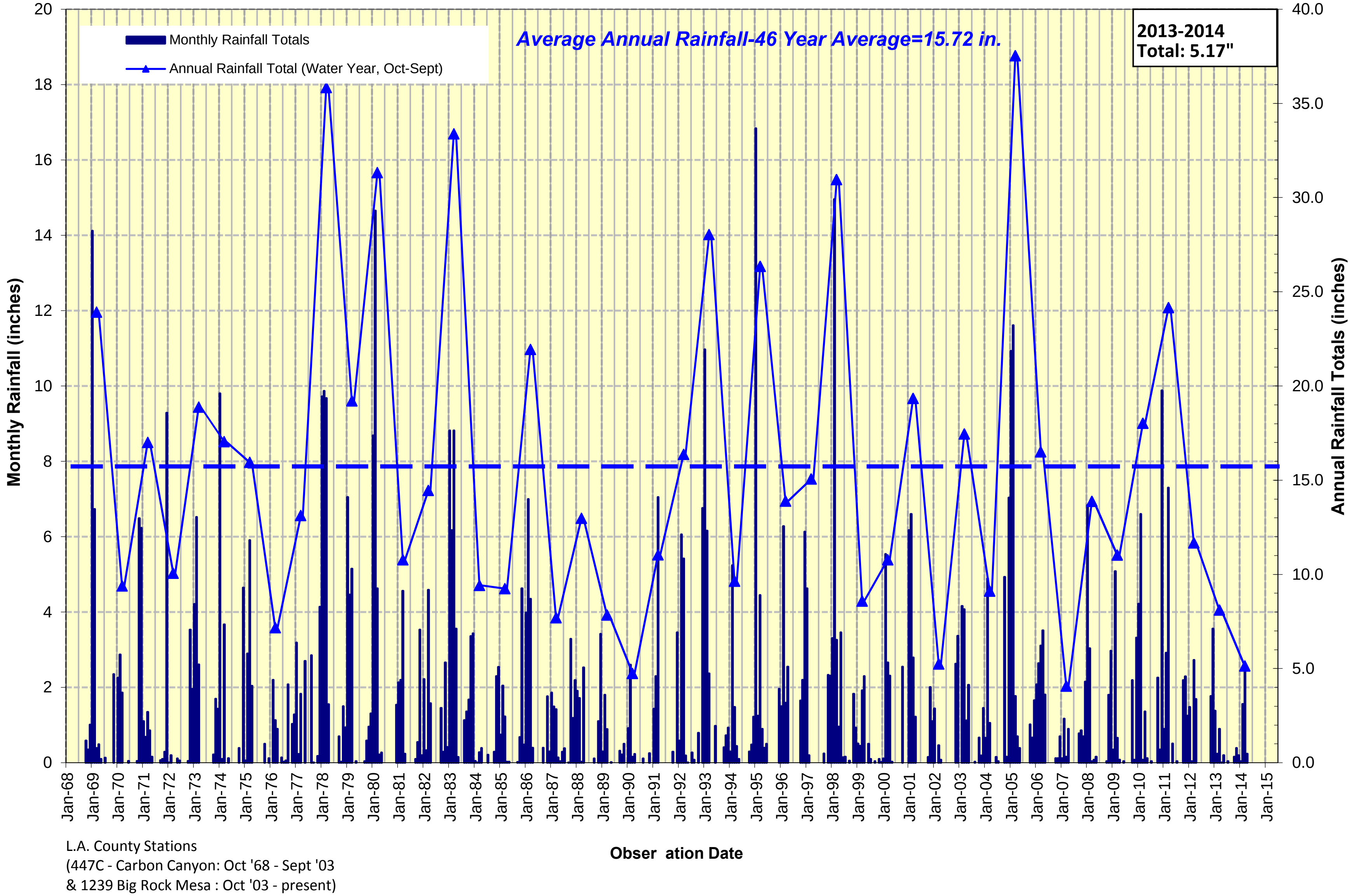
SCALE: 1:2,400

200 100 0 200 Feet

REVISIONS

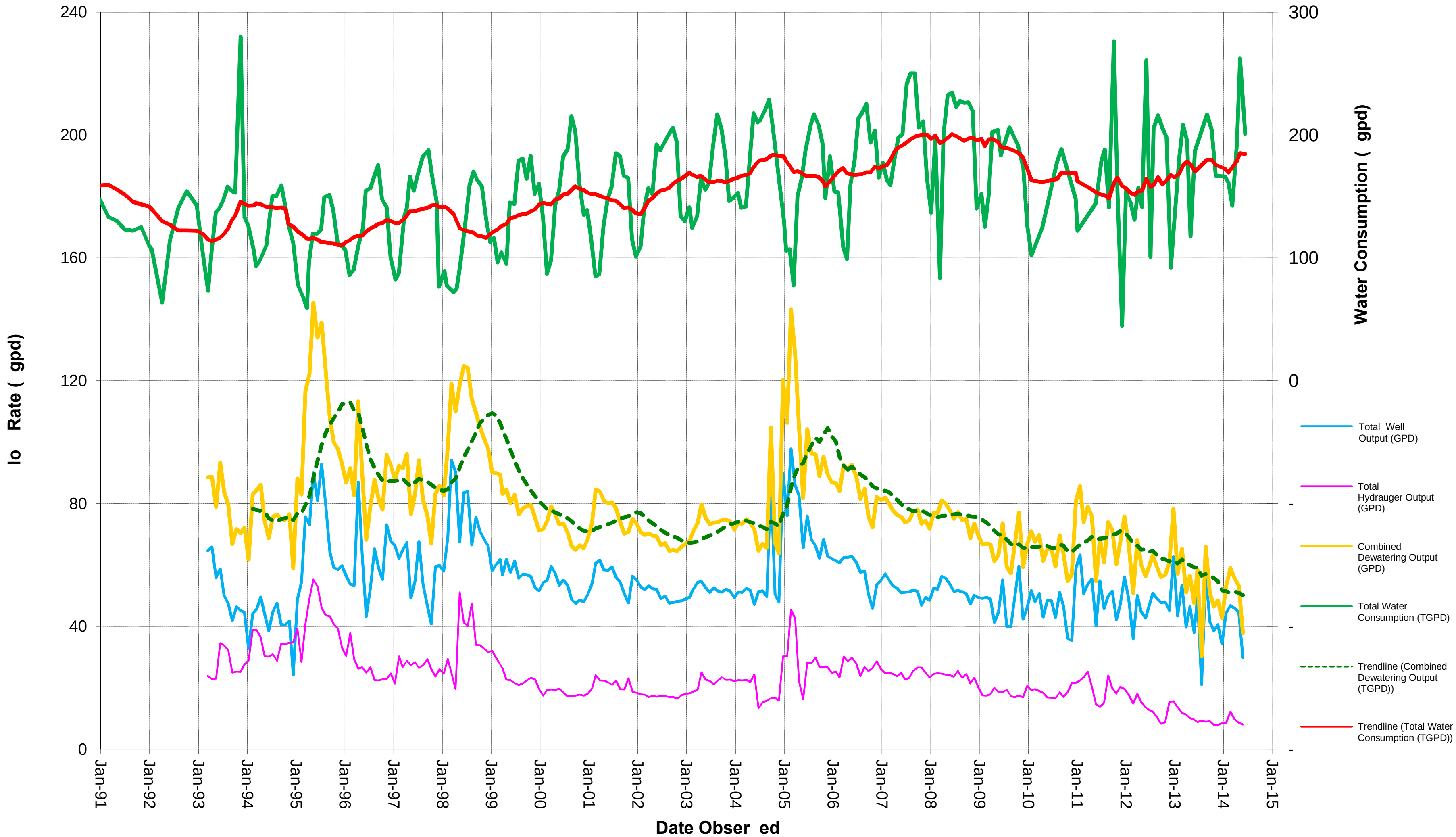
No.	DATE	DESCRIPTION	BY	No.	DATE	DESCRIPTION	BY
1							
2							
3							

DATE:	WORK ORDER:		PLATE NO.:
4/17/15	04.62140606		2
DRAWN BY:	CHECKED BY:	APPROVED BY:	
WBC	TC	CD	



MALIBU AREA MONTHLY AND AVERAGE RAINFALL
Big Rock Mesa Landslide Assessment District
Malibu, California

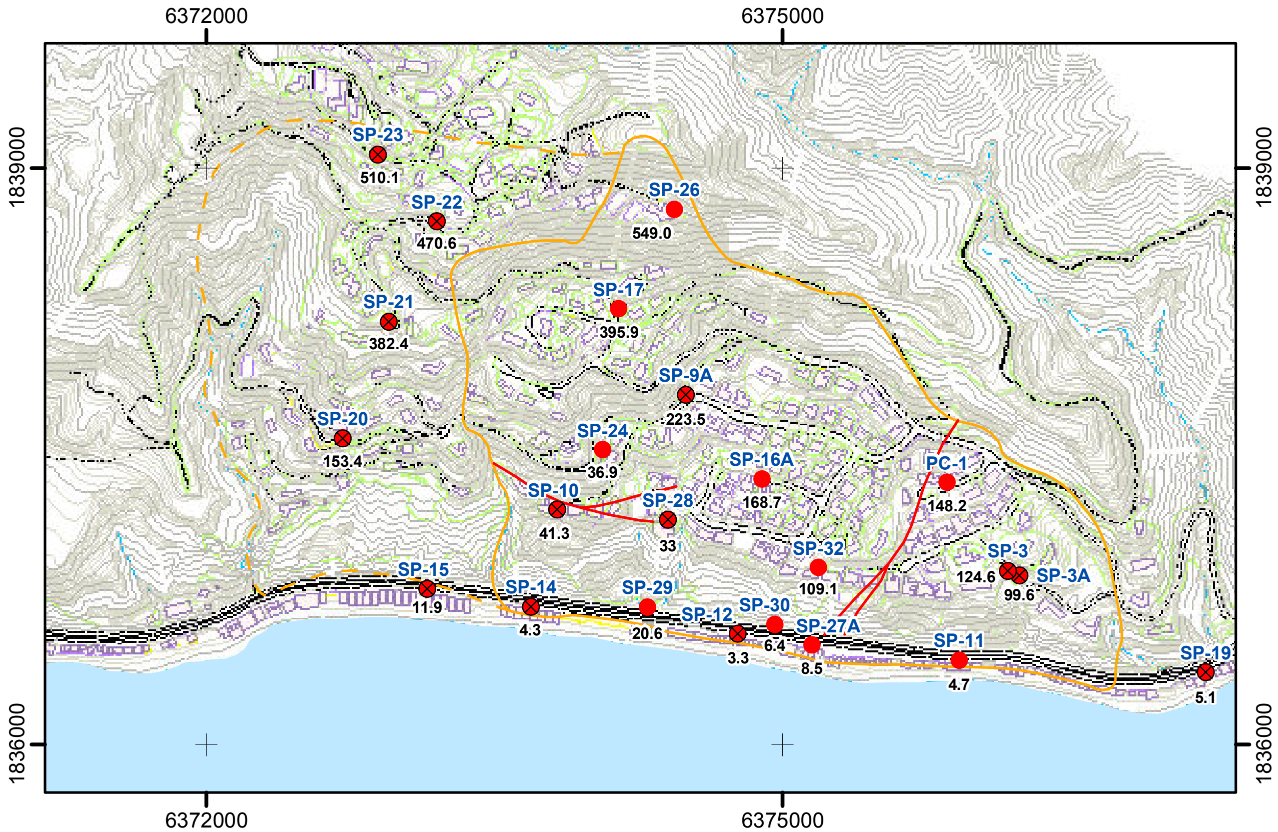
PLATE 3



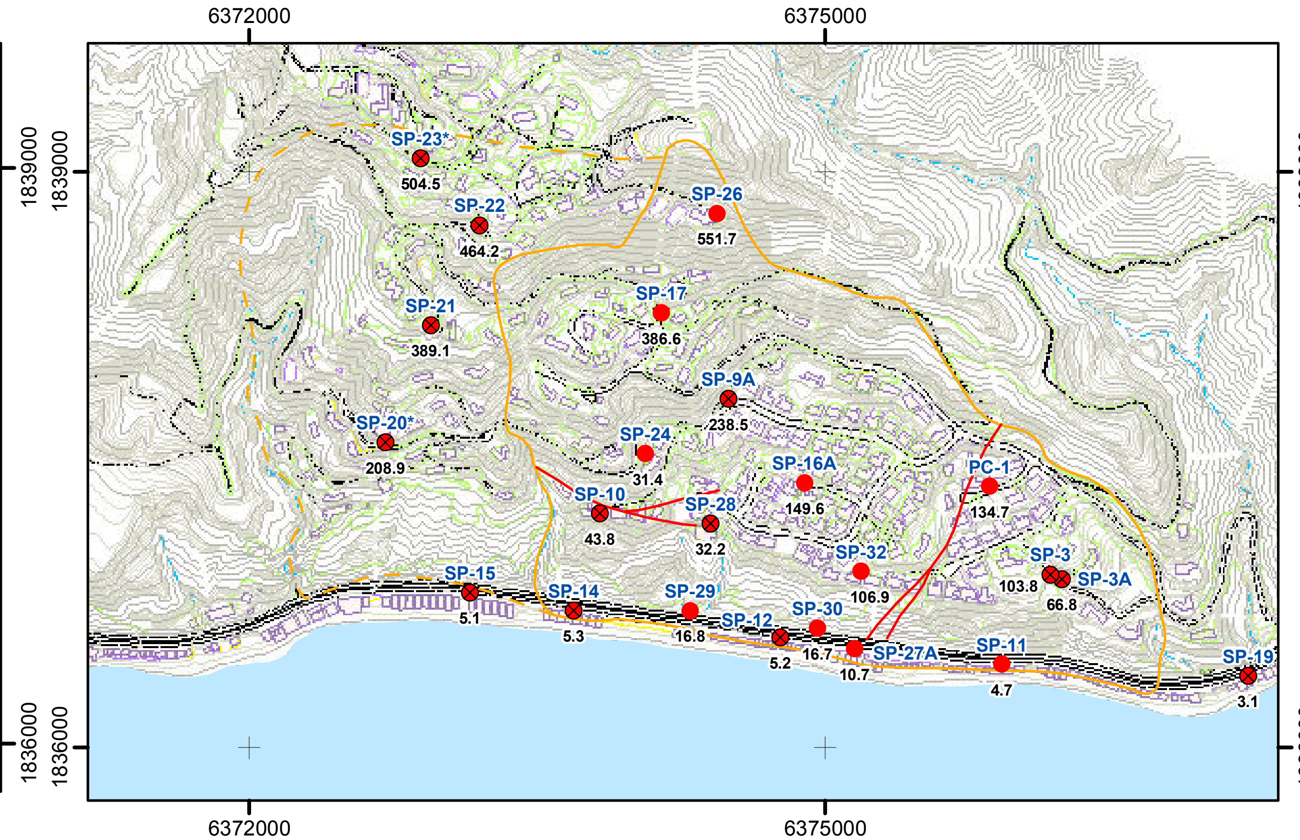
TOTAL DEWATERING RATE VS. TOTAL WATER CONSUMPTION
Wells & Hydraugers (Combined)/Total Water Consumption
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE 4

Groundwater Elevation (May 8, 1995)

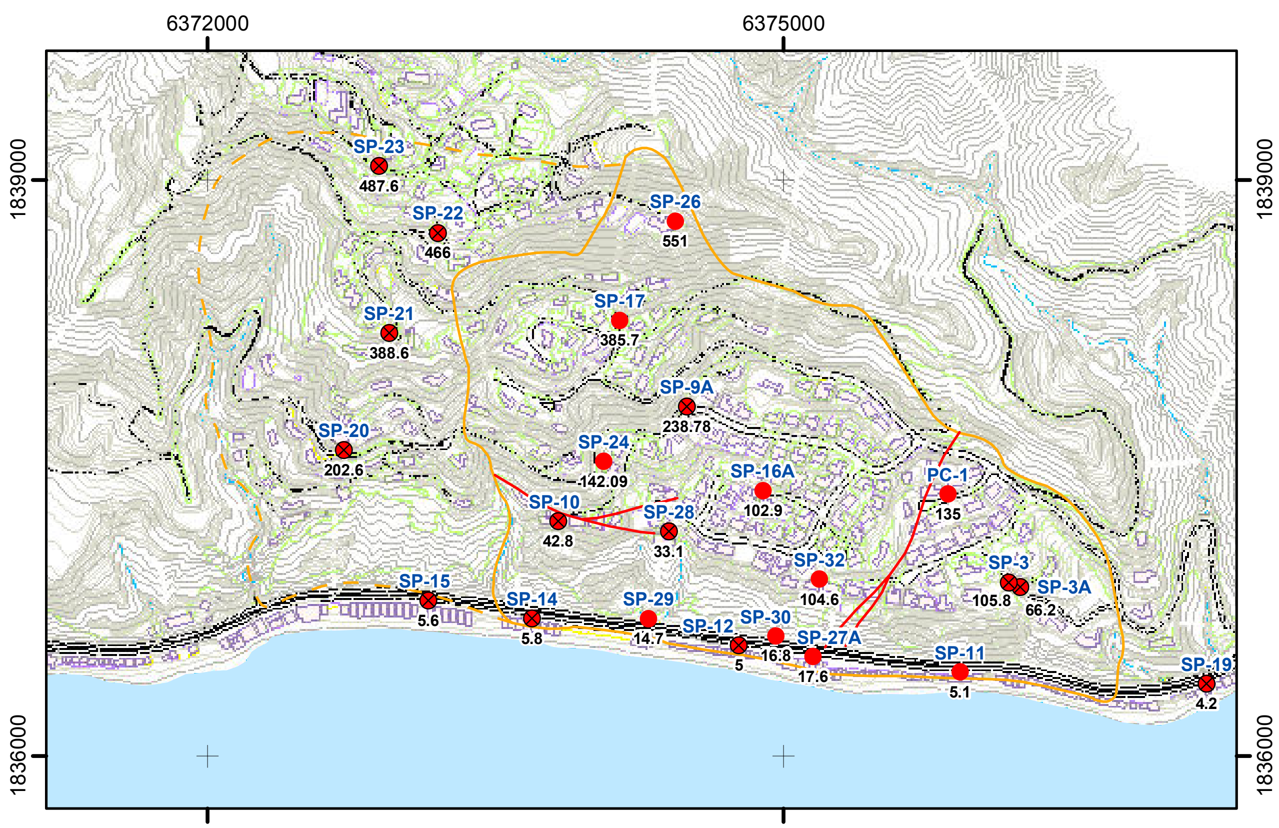


Groundwater Elevation (May 3, 2013)



*SP-20 and SP-23- Date of last accurate reading is 4/16/2012

Groundwater Elevation (May 2, 2014)



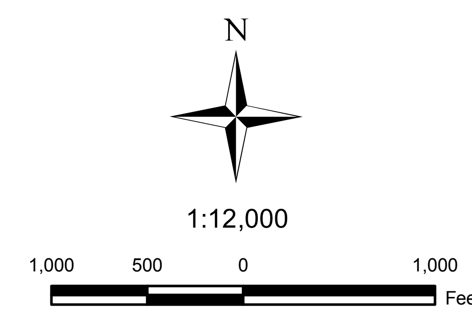
Legend

Instrumentation

- Slope Inclinometer/Standpipe Piezometer does not Penetrate Rupture Surface
- Slope Inclinometer/Standpipe Piezometer does Penetrate Rupture Surface
- SP-16 / 400 — Instrument Label and Ground Water Elevation in feet

Site Map Features

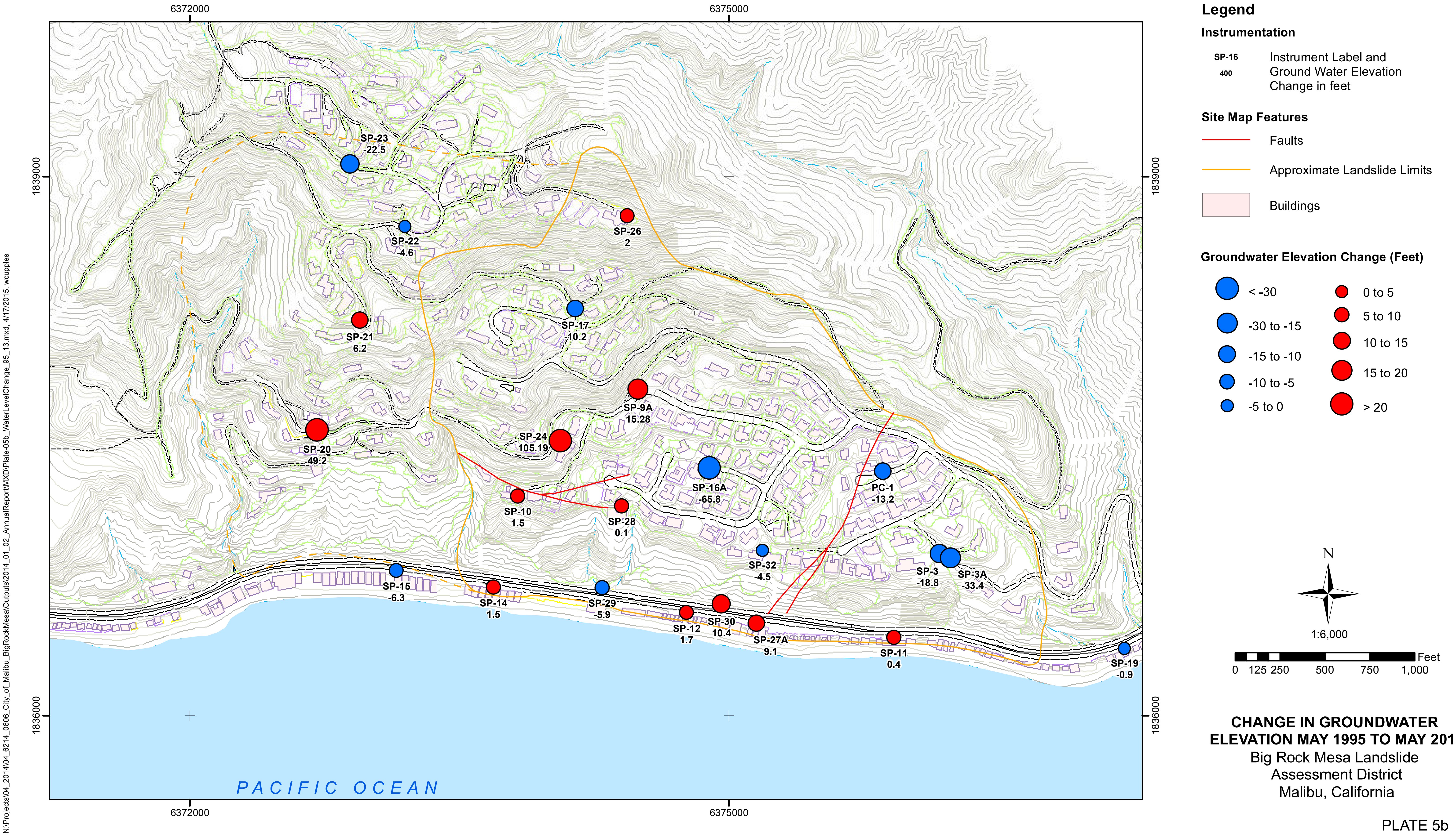
- Faults
- Approximate Landslide Limits
- Buildings



GROUNDWATER ELEVATION MAP
MAY 1995 AND MAY 2014
Big Rock Mesa Landslide
Assessment District
Malibu, California

PLATE 5a

N:\Projects\04_2014\04_6214_0606_City_of_Malibu_BigRockMesa\Outputs\2014_01_02_AnnualReport\MXD\Plate-05a_WaterLevel_95_13.mxd, 4/17/2015, wcupples

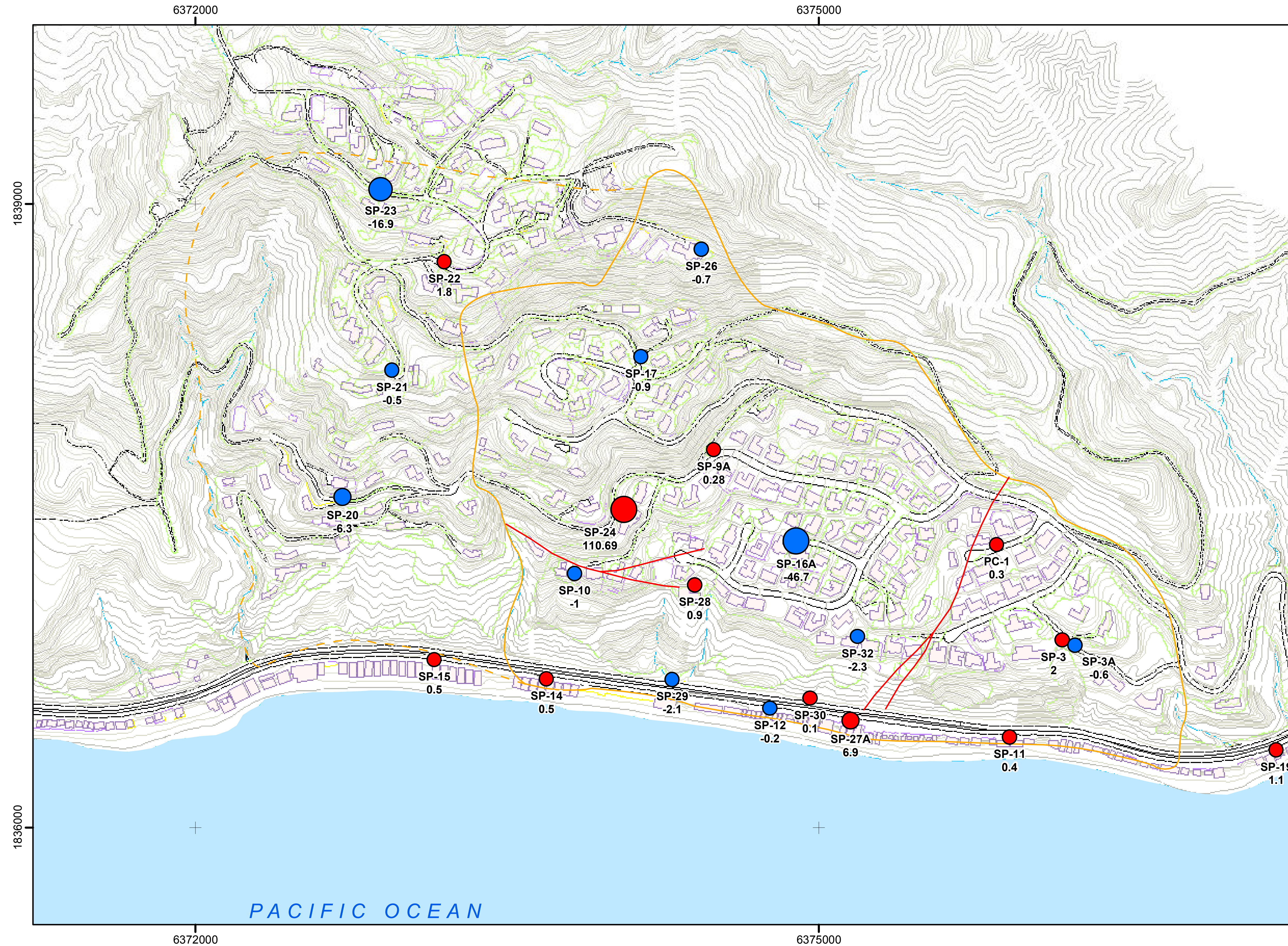


CHANGE IN GROUNDWATER ELEVATION MAY 1995 TO MAY 2014

Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE 5b

Big Rock Mesa Landslide Assessment District, City of Malibu
Project No. 04.62140606



Legend

Instrumentation

SP-16 400 — Instrument Label and Ground Water Elevation Change in feet

Site Map Features

Faults

Approximate Landslide Limits

Buildings

Groundwater Elevation Change (Feet)

< -30
-30 to -15
-15 to -10
-10 to -5
-5 to 0
0 to 5
5 to 10
10 to 15
15 to 20
> 20

N

1:6,000

0 125 250 500 750 1,000 Feet

CHANGE IN GROUNDWATER ELEVATION MAY 2013 TO MAY 2014

Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE 5c

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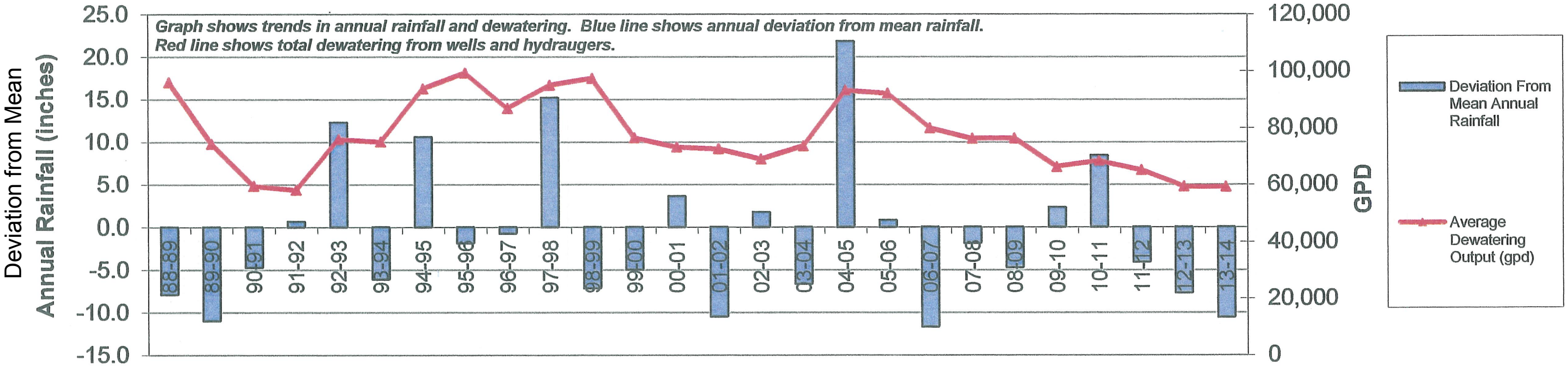
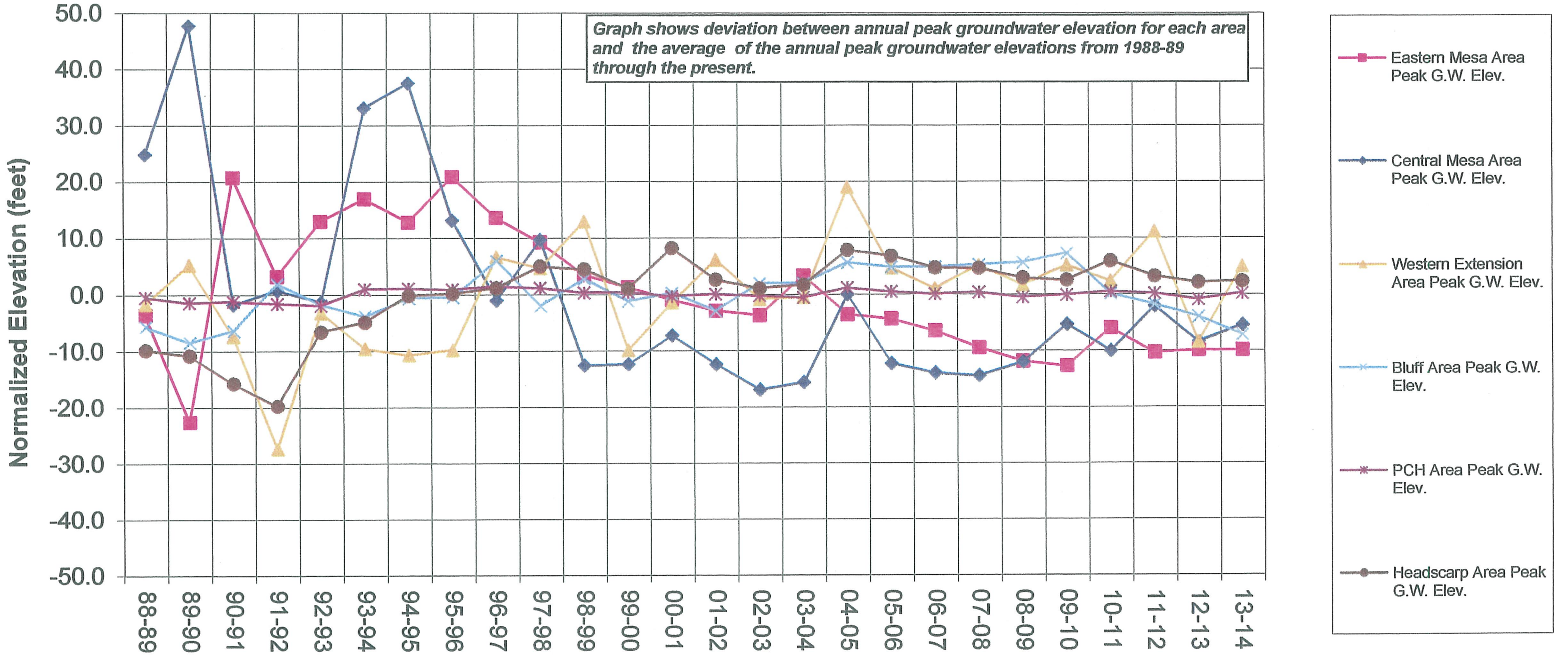




SUMMARY OF GROUNDWATER LEVELS, DEWATERING, AND RAINFALL
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE 6

APPENDIX A
GROUNDWATER LEVEL DATA

Big Rock Mesa: Standpipe Piezometer Information				
Piezometer ID	**Surface Elev. (ft)**	**Depth (ft)**	**Perforation Interval**	**Installer**
PCH Standpipe Piezometers				
SP-11	27	58	Unknown	BYA
SP-12	26	40	Unknown	BYA
SP-14	25	30	Unknown	BYA
SP-15	20	82	Unknown	BYA
SP-19	25	82	Unknown	BYA
SP-27A	29	94	Unknown	BYA
SP-29	27	138	Unknown	BYA
SP-30	29	128	Unknown	BYA
Bluff Standpipe Piezometers				
SP-10	295	332	Unknown	BYA
SP-28	270	358	Unknown	BYA
SP-32	233	354	Unknown	BYA
SP-34	270	382	Unknown	BYA
Headscarp Piezometers				
SP-26	745	346	Unknown	BYA
Central Standpipe Piezometers				
SP-9A	365	300	Unknown	BYA
SP-16	285	240	Unknown	BYA
SP-16A	285	392	Unknown	BYA
SP-17	540	192	Unknown	BYA
SP-17A	540	238	Unknown	BYA
SP-24	370	382	Unknown	BYA
SP-35	345	396	Unknown	BYA
SP-36	380	254	Unknown	BYA
Western Standpipe Piezometers				
SP-20	430	326	Unknown	BYA
SP-21	660	280	Unknown	BYA
SP-22	780	332	Unknown	BYA
SP-23	860	398	Unknown	BYA
Eastern Standpipe Piezometers				
PC-1	250	158	Unknown	BYA
SP-3	212	132	Unknown	BYA
SP-3A	203	246	Unknown	BYA
SP-33[1]	208	374	Unknown	BYA

1 - Data not presented

PIEZOMETER IN ORMATION
Standpipe Pie ometers
Big Rock Mesa Landslide Assessment District
Malibu, California

PIEZOMETER INFORMATION					
Pie ometer ID	**Surface Ele (ft)**	**Tip No**	**TIP DEPTH (ft)**	**INSTALL B**	**STAT S**
W-10*	432	230	230	BYA	Malfunctioning
W-11*	507	214	214	BYA	Malfunctioning
W-15*	295	164	164	BYA	Malfunctioning
		TIP-1	120		Functioning, reported
		TIP-2	90		No data after 11/11/2011, above estimated water level
PC-1	250	TIP-3	70	BYA	No data after 06/03/2013, above estimated water level
		TIP-4	40		No data reported, above estimated water table,
		TIP-5	20		No data reported, above estimated water table
		TIP-1			Non-functioning - Covered by asphalt pavement
SP-5A*	NA	TIP-2	NA	BYA	
		TIP-3			
		TIP-1			Non-functioning - Covered by landslide
SP-8A*	NA	TIP-2	NA	BYA	
		TIP-3			
		TIP-1	Unknown		Functioning, results questionable, data not presented
		TIP-2	Unknown		Functioning, results questionable, data not presented
SP-17A	540	TIP-3	Unknown	BYA	Functioning, results questionable, data not presented
		TIP-4	Unknown		Functioning, results questionable, data not presented
		TIP-5	Unknown		Functioning, results questionable, data not presented
		TIP-1	381		Functioning, reported
SP-34	270	TIP-2	282	BYA	Suspect data after 12/02/2013 not reported
		TIP-3	182		No data reported, above estimated water level
		TIP-4	82		No data reported, above estimated water level
		TIP-1	393		Suspect data after 12/02/2013 not reported
SP-35	345	TIP-2	293	BYA	Functioning, reported
		TIP-3	193		No data reported, above estimated water level
		TIP-4	98		No data reported, above estimated water level
		TIP-1	255		Functioning, reorted
SP-36	380	TIP-2	195	BYA	Functioning, reported
		TIP-3	95		No data reported, above estimated water level
		TIP-1	Unknown		Malfunctioning
BYA-2*	665	TIP-2	Unknown	BYA	
		TIP-3	Unknown		
		TIP-1			Malfunctioning
BYA-3A*	NA	TIP-2		BYA	
		TIP-3	NA		
		TIP-4			
		TIP-1			Malfunctioning
		TIP-2			
		TIP-3	NA		
BYA-4A*	NA	TIP-4		BYA	
		TIP-5			
		TIP-6			
		TIP-1			Malfunctioning
BYA-5A*	NA	TIP-2	NA	BYA	
		TIP-3			
		TIP-4			
		TIP-1			Malfunctioning
GEO-2 (OB-2)*	305	TIP-2	NA	GS	
		TIP-3			
		TIP-1			Restricted Access (possibly malfunctioning)
GEO-1*	NA	TIP-2	NA	GS	
		TIP-3			

NOTE: * Not functioning or no longer monitored peizometer
Additional data for standpipe peizometers is presented in Appendix D, PLATE D-1

PIEZOMETER INFORMATION
Big Rock Mesa Landslide Assessment District
Malibu, California

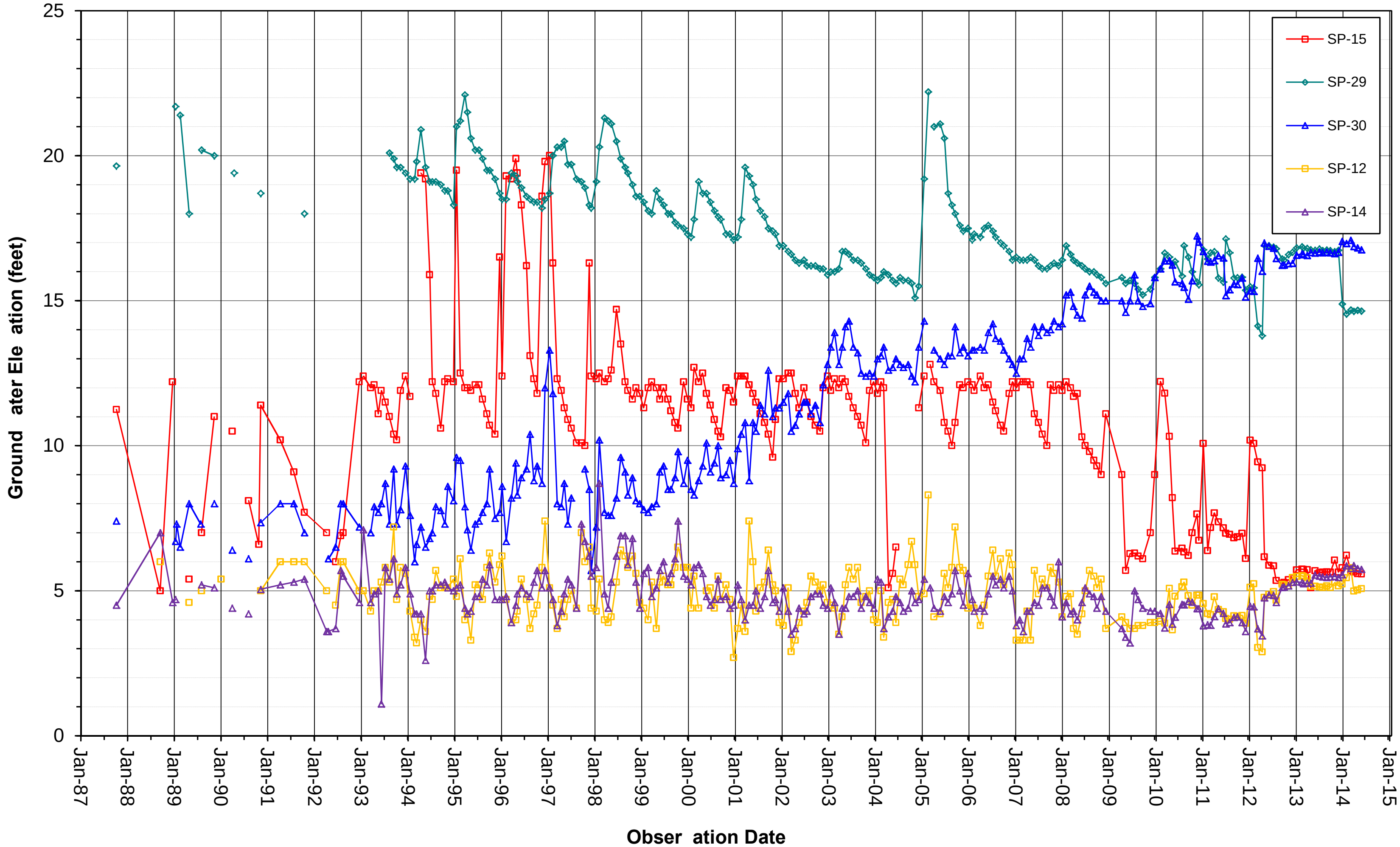
Piezometer I.D.		1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	1 - 1	Highest Recorded	Mean '91 - '14	Stand Dev.	13-14 vs 97-98	13-14 vs 12-13	13-14 vs mean
PCH REGION																																						
SP-11	Mean El.						5.7	5.3	4.7	4.5	5.7	5.7	5.5	5.8	5.5	5.8	6.3	5.5	4.8	5.4	5.4	5.2	5.3	5.1	5.4	4.9	4.6	5.1	8.4	7.8	4.7	4.8	Feb-11	*5.5*	*0.9*	*-1.0*	*0.1*	*-0.7*
	Highest El.						6.4	5.8	5.5	5.0	6.0	7.4	6.9	7.5	6.7	7.3	8.1	6.5	5.5	8.3	7.0	5.7	5.8	5.9	7.6	5.9	5.2	5.6	11.8	8.8	5.0	5.1	11.8	*6.7*	*1.6*	*-2.2*	*0.1*	*-1.6*
SP-12	Mean El.						4.6	5.4	5.5	5.4	5.2	4.8	4.9	5.1	4.8	5.0	5.3	5.3	4.7	4.5	4.8	4.6	5.5	5.2	4.9	4.8	4.7	4.0	4.7	4.2	5.2	5.2	Feb-05	*4.9*	*0.4*	*0.2*	*0.0*	*0.3*
	Highest El.						4.6	5.4	6.0	6.0	6.0	7.2	6.1	6.3	7.4	7.0	6.4	6.5	7.4	6.4	6.4	6.4	8.3	7.2	6.4	5.8	5.7	5.1	5.3	5.2	5.5	5.8	8.30	*6.3*	*0.8*	*-1.2*	*0.3*	*-0.6*
SP-14	Mean El.					4.5	4.7	4.4	4.8	4.3	4.8	4.9	4.9	4.9	5.0	5.9	5.8	5.6	4.7	4.5	4.6	4.6	4.7	4.8	4.7	4.7	4.3	4.3	4.3	4.1	5.2	5.6	Feb-98	*4.8*	*0.5*	*-0.3*	*0.4*	*0.8*
	Highest El.					4.5	4.7	4.4	5.2	5.4	7.1	6.1	5.3	5.9	5.7	8.7	6.9	7.4	5.4	5.7	5.1	5.4	5.4	5.7	5.5	6.0	5.1	5.0	4.6	4.9	5.5	5.5	8.7	*5.8*	*0.9*	*-3.2*	*0.0*	*-0.3*
SP-15	Mean El.					11.3	8.8	10.5	9.1	7.5	10.7	13.4	12.6	15.1	14.5	12.2	12.0	11.7	11.6	11.5	11.7	10.0	11.9	11.6	11.6	11.4	8.9	8.4	7.2	7.6	5.5	5.7	Jan-97	*10.6*	*2.6*	*-6.4*	*0.2*	*-4.9*
	Highest El.					11.3	12.2	10.5	11.4	9.1	12.4	19.4	19.5	19.9	20.0	16.3	13.5	12.7	12.4	12.5	12.4	12.2	12.8	12.4	12.2	12.2	11.1	12.2	10.1	10.2	5.9	6.2	20.0	*12.9*	*3.9*	*-10.1*	*0.4*	*-6.7*
SP-19	Mean El.							3.6	3.6	3.1	4.5	4.4	4.7	4.6	4.3	4.4	4.5	3.8	3.4	3.7	3.5	3.4	3.9	3.6	3.6	3.5	3.1	3.6	3.7	3.6	3.0	3.6	Mar-95	*3.8*	*0.5*	*-0.8*	*0.6*	*-0.2*
	Highest El.							4.1	4.0	3.4	5.0	5.0	5.9	5.4	4.9	5.2	5.0	4.5	3.9	4.3	4.1	4.0	4.2	4.5	4.4	4.1	3.6	4.6	4.0	4.3	3.3	4.2	5.9	*4.4*	*0.6*	*-1.0*	*0.8*	*-0.3*
SP-27A	Mean El.						7.1	9.1	8.8	8.7	9.3	9.4	9.7	9.5	9.5	9.7	9.6	10.1	9.2	9.0	9.5	9.3	10.2	9.7	9.5	10.0	9.5	10.0	10.0	9.7	10.5	17.1	Jun-15	*10.0*	*1.6*	*7.4*	*6.6*	*7.1*
	Highest El.						7.1	10.1	9.2	10.2	10.0	10.2	10.8	10.3	10.4	10.7	10.4	13.7	9.6	9.7	9.9	9.8	13.5	12.5	10.2	13.7	10.1	10.6	10.5	10.5	10.8	17.8	17.8	*11.1*	*1.9*	*7.1*	*7.0*	*6.6*
SP-29	Mean El.					19.7	20.4	19.4	18.7	18.0		19.7	20.0	19.2	19.2	19.7	18.8	18.0	18.1	17.0	16.2	16.0	18.0	17.7	16.7	16.3	15.8	15.9	16.2	15.8	16.7	15.7	Feb-05	*17.5*	*1.5*	*-4.0*	*-1.0*	*-1.8*
	Highest El.					19.7	21.7	19.4	18.7	18.0		20.9	22.1	20.2	20.5	21.3	19.9	19.1	19.6	18.1	16.7	16.4	22.2	18.7	17.4	16.9	16.1	16.6	16.9	17.1	16.9	16.8	22.2	*18.6*	*2.0*	*-4.5*	*-0.1*	*-1.8*
SP-30	Mean El.					7.4	7.1	6.4	7.2	6.9	7.7	7.3	7.9	8.1	9.6	8.0	8.5	9.0	9.7	11.3	12.6	12.9	13.0	13.4	13.4	14.4	15.1	15.7	16.2	15.8	16.5	16.8	Nov-10	*11.7*	*3.4*	*8.8*	*0.3*	*5.1*
	Highest El.					7.4	8.0	6.4	8.0	8.0	8.0	9.3	9.6	9.4	13.3	10.2	9.6	10.1	10.8	12.6	14.3	13.4	14.3	14.1	14.2	15.3	15.5	16.4	17.2	17.0	16.8	17.1	17.2	*12.9*	*3.1*	*6.9*	*0.3*	*4.2*
Area Average	Mean El.					10.7	8.3	8.0	7.8	7.3	6.8	8.7	8.8	9.1	9.1	8.8	8.8	8.6	8.3	8.4	8.5	8.2	9.1	8.9	8.7	8.7	8.2	8.4	8.8	8.6	8.4	9.3		*8.5*	*0.6*	*0.5*	*0.9*	*0.8*
	Highest El.					10.7	9.2	8.3	8.5	8.1	7.8	10.7	10.8	10.6	11.1	10.8	10.0	10.1	9.3	9.7	9.5	9.2	10.8	10.1	9.7	10.0	9.1	9.5	10.1	9.8	8.7	9.8		*9.8*	*0.9*	*-1.0*	*1.1*	*0.0*
Change vs Prior	Mean El.						-2.4	-0.3	-0.2	-0.5	-0.4	1.8	0.1	0.3	0.0	-0.2	0.0	-0.2	-0.3	0.1	0.2	-0.3	0.8	-0.2	-0.2	0.0	-0.5	0.2	0.4	-0.3	-0.1	0.9						
	Highest El.						-1.5	-1.0	0.2	-0.4	-0.4	2.9	0.1	-0.2	0.5	-0.3	-0.9	0.1	-0.7	0.4	-0.2	-0.3	1.7	-0.7	-0.4	0.3	-0.9	0.5	0.5	-0.3	-1.0	1.1						
BL REGION																																						
SP-10	Mean El.	144.7	76.0	50.0	50.5	49.2	47.4	45.9	48.8	55.3	44.6	42.9	41.6	42.0	41.6	41.3	42.4	42.8	42.9	43.3	43.7	44.3	45.5	45.2	45.2	44.8	43.7	44.0	43.9	42.6	43.7	43.5	Dec-83	*43.9*	*2.7*	*2.2*	*-0.2*	*-0.4*
	Highest El.	174.2	130.0	50.0	50.5	50.0	52.0	46.0	55.5	74.0	45.9	44.4	42.2	42.6	41.9	41.6	44.8	43.4	43.3	43.6	44.1	44.4	47.2	45.4	45.4	45.2	44.9	44.6	46.0	44.7	44.1	44.0	174.2	*45.6*	*6.3*	*2.4*	*-0.1*	*-1.5*
SP-28	Mean El.						36.4	33.7	37.5	33.7	33.6	33.7	33.0	32.7	32.2	31.9	32.6	33.2	33.1	33.0	32.9	32.9	34.9	34.7	33.3	33.1	32.8	33.1	32.8	35.2	32.8	32.8	Jan-12	*33.2*	*0.8*	*0.9*	*0.0*	*-0.4*
	Highest El.						40.5	33.8	40.0	36.0	35.2	35.2	33.1	33.1	32.4	32.2	34.9	33.6	33.2	33.3	33.0	32.9	36.1	36.0	33.6	33.1	33.1	33.4	33.8	42.0	33.7	33.6	42.0	*34.2*	*2.1*	*1.4*	*-0.1*	*-0.6*
SP-32	Mean El.						75.3	79.1	72.6	76.1	90.1	85.9	92.5	92.5	94.9	76.5	84.2	79.7	88.2	70.1	89.9	91.1	99.9	100.2	102.3	102.4	104.4	105.1	102.3	104.8	106.4	105.6	Apr-96	*93.2*	*10.8*	*29.1*	*-0.7*	*12.4*
	Highest El.						78.2	82.3	72.8	83.2	101.0	96.2	110.2	110.2	130.9	107.4	95.3	88.4	97.0	83.6	106.0	105.8	106.7	105.9	105.9	105.8	105.8	105.8	105.9	106.9	106.9	107.1	130.9	*103.4*	*9.9*	*-0.3*	*0.2*	*3.7*
SP-34	Mean El.																74.4	77.6	76.2	76.4	73.5	73.8	80.0	79.7	82.8	84.5	86.0	88.6	53.2	44.7	37.1	35.9	Nov-09	*70.3*	*17.4*	*35.9*	*-1.2*	*-34.3*
	Highest El.																85.9	79.5	77.3	77.7	74.4	74.5	82.1	81.4	83.8	86.1	88.0	94.5	64.5	48.8	48.7	36.2	94.5	*74.0*	*16.3*	*36.2*	*-12.5*	*-37.8*
Area Average	Mean El.	144.7	76.0	50.0	50.5	49.2	53.0	52.9	53.0	55.0	56.1	54.2	55.7	55.7	56.2	49.9	58.4	58.3	60.1	55.7	60.0	60.5	65.1	64.9	65.9	66.2	66.7	67.7	58.0	56.8	55.0	54.5		*59.0*	*4.9*	*4.6*	*-0.5*	*-4.5*
	Highest El.	174.2	130.0	50.0	50.5	50.0	56.9	54.0	56.1	64.4	60.7	58.6	61.8	62.0	68.4	60.4	65.2	61.2	62.7	59.6	64.4	64.4	68.0	67.2	67.2	67.6	68.0	69.6	62.5	60.6	58.4	55.2		*63.4*	*3.8*	*-5.2*	*-3.1*	*-8.2*
Change vs Prior	Mean El.		-68.7	-26.0	0.5	-1.3	3.8	-0.2	0.1	2.0	1.1	-1.9	1.5	0.1	0.5	-6.3	8.5	-0.1	1.8	-4.4	4.3	0.5	4.6	-0.1	0.9	0.3	0.5	0.9	-9.6	-1.2	-1.8	-0.5						
	Highest El.		-44.2	-80.0	0.5	-0.5	6.9	-2.9	2.1	8.3	-3.7	-2.1	3.2	0.1	6.4	-8.0	4.8	-4.0	1.5	-3.2	4.8	0.0	3.6	-0.8	0.0	0.4	0.4	1.6	-7.0	-2.0	-2.2	-3.1						
HEADSCARP REGION																																						
SP-26	Mean El.				541.9	540.2	538.9	535.8	532.4	527.0	532.6	543.6	543.3	547.8	547.1	549.9	551.9	549.8	550.7	550.6	549.1	550.7	553.1	554.7	553.8	552.9	551.4	551.2	552.5	551.9	551.0	551.4	Apr-01	*548.6*	*6.6*	*1.6*	*0.4*	*2.8*
	Highest El.				542.0	540.2	540.0	539.0	534.0	530.0	543.2	544.9	549.6	549.9	550.9	554.7	554.2	550.8	557.9	552.3	550.8	551.4	557.5	556.5	554.4	554.3	552.6	552.2	555.6	552.9	551.8	552.0	557.9	*551.3*	*5.8*	*-2.7*	*0.2*	*0.6*
Change vs Prior	Mean El.		0.0	0.0	541.9	-1.6	-1.4	-3.1	-3.3	-5.4	5.6	11.0	-0.3	4.4	-0.7	2.8	2.1	-2.1	0.9	-0.1	-1.5	1.6	2.5	1.5	-0.9	-0.9	-1.5	-0.2	1.4	-0.6	-0.9	0.4						
	Highest El.		0.0	0.0	542.0	-1.8	-0.2	-1.0	-5.0	-4.0	13.2	1.7	4.7	0.3	1.0	3.8	-0.5	-3.4	7.1	-5.6	-1.5	0.6	6.1	-1.0	-2.1	-0.1	-1.7	-0.4	3.4	-2.8	-1.1	0.2						

GROUNDWATER ELEVATION DATA ANALYSIS

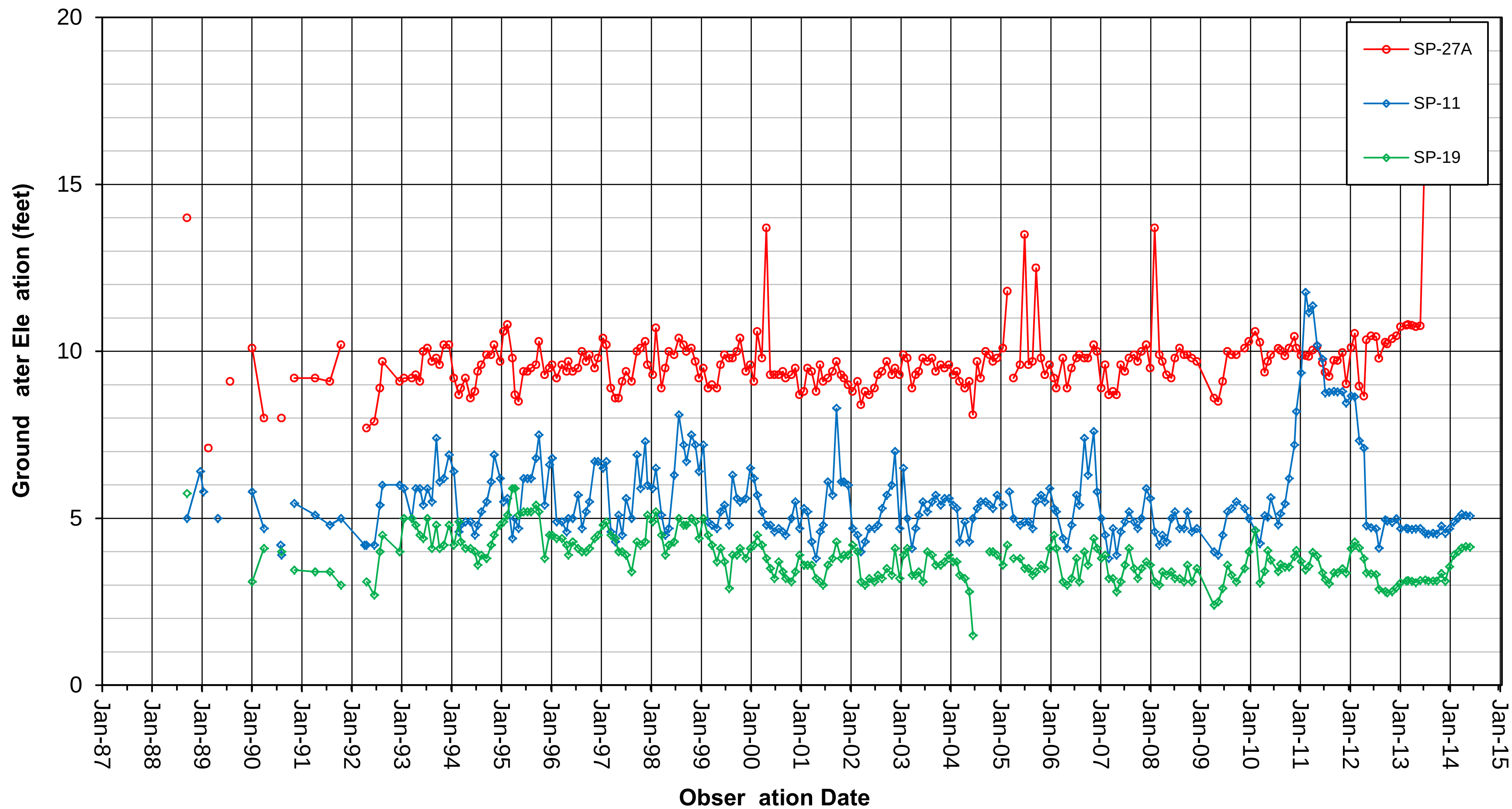
Big Rock Mesa Landslide Assessment District
Malibu, California

Piezometer I.D.		1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	1 - 1	Highest Recorded	Mean '91 - '14	Stand Dev.	13-14 vs 97-98	13-14 vs 12-13	13-14 vs mean
CENTRAL MESA																																						
SP-9A	Mean El.	254.7	232.0	232.0	227.5	236.3	222.2	220.0	233.3	215.1	221.9	226.8	220.8	222.0	222.0	224.6	226.8	226.4	228.0	229.3	229.5	230.0	229.7	229.9	228.3	227.5	227.1	227.7	226.6	230.6	230.6	238.6	Dec-83	226.9	4.6	14.1	8.1	11.7
	Highest El.	270.0	232.0	232.0	232.0	236.3	224.0	222.2	235.2	222.9	228.5	228.5	225.5	223.8	223.7	231.1	229.0	226.9	231.0	230.6	232.3	231.5	232.5	231.9	229.7	229.7	228.4	229.2	227.5	238.6	238.6	238.9	270.0	230.0	4.4	7.8	0.3	8.9
SP-16	Mean El.	226.5	195.4	174.3	171.9	171.5	161.8	113.0	86.5	95.7				68.2	47.9	48.0	46.5	48.4	53.1	47.9	46.0	46.6	87.0	51.6	50.1	50.1	53.7	107.8	117.4	81.8	63.3	56.9	Mar-84	63.4	22.2	9.0	-6.4	-6.5
	Highest El.	226.5	214.7	180.3	174.2	177.1	182.5	147.8	89.5	121.0				117.8	61.3	66.5	53.5	78.7	89.7	64.4	46.6	49.2	124.0	57.7	50.9	61.8	79.4	121.3	121.1	120.5	75.4	58.2	226.5	80.9	28.9	-8.3	-17.2	-22.7
SP-16A	Mean El.					181.2	153.3	122.0	108.4	108.3	122.2	125.7	147.9	127.6	113.4	126.0	126.8	149.2	180.8	146.0	105.0	133.0	185.1	182.1	180.1	165.8	173.7	166.3	136.0	106.3	149.4	130.0	Jan-05	142.9	26.1	4.1	-19.4	-12.9
	Highest El.					181.2	180.3	148.8	124.5	124.5	184.5	169.1	186.3	182.3	154.9	185.5	182.4	189.4	184.5	183.9	170.0	183.0	196.2	183.8	182.8	184.4	181.8	183.1	153.7	131.9	149.7	149.6	196.2	172.9	19.3	-35.9	-0.1	-23.3
SP-17	Mean El.	406.0	401.8	395.3	399.1	398.3	393.3	392.0	385.1	382.7		385.5	390.1	389.3	388.3	393.6	390.0	385.6	389.1	386.9	387.9	388.6	393.8	393.6	391.9	388.4	386.8	386.1	387.5	385.4	386.0	385.9	Jan-84	388.3	3.0	-7.7	-0.1	-2.4
	Highest El.	410.0	403.0	395.3	400.1	400.0	401.0	394.1	386.0	383.2		389.8	404.3	396.5	396.5	408.8	395.5	386.9	399.2	389.1	396.4	392.0	406.5	398.1	401.5	392.5	394.8	397.0	393.0	388.0	386.1	386.8	410.0	394.7	6.8	-22.0	0.6	-7.9
SP-17A	Mean El.						360.1	377.4	376.6	374.5	379.2	379.8	377.8	379.3	377.2	379.1	379.1	375.3	376.6	375.6	374.9	376.0	378.0	379.4	378.4	375.3	374.2	372.8	373.4	374.6	376.5	375.2	Feb-94	376.6	2.1	-3.9	-1.3	-1.4
	Highest El.						372.4	378.5	377.7	375.7	385.0	389.8	384.4	381.6	380.5	386.7	382.9	376.4	381.1	377.3	376.5	377.2	385.2	383.4	380.7	376.3	376.3	373.7	375.0	376.2	377.0	376.8	389.8	379.8	4.4	-9.9	-0.1	-3.0
SP-24	Mean El.	195.3	102.1	49.0	49.2		49.0		35.1	38.6	38.5	38.9	37.2	39.0	39.1	40.0	41.6	41.4	41.7	42.3	41.4	43.3	46.3	47.6	46.1	45.3	45.6	47.0	46.7	43.0	36.8	87.9	Mar-84	44.1	10.1	47.9	51.1	43.7
	Highest El.	220.6	170.0	50.0	52.0		52.0		39.6	40.0	38.9	41.0	39.6	39.6	39.8	42.0	43.3	42.2	43.0	43.7	41.8	44.0	51.0	50.2	48.2	46.0	46.0	49.0	47.5	45.1	38.9	142.6	220.6	48.0	20.9	100.6	103.7	94.6
SP-35	Mean El.																92.2	88.3	93.6	97.4	90.5	89.4	90.8	88.2	86.8	85.9	86.0	89.4	88.1	104.1	94.8	94.1	Jul-11	91.2	4.8		-0.7	2.9
	Highest El.																101.3	91.0	104.0	102.9	92.7	90.6	95.2	89.0	87.2	86.4	90.2	95.8	94.1	112.9	96.9	94.7	112.9	95.3	7.0		-2.3	-0.6
SP-36	Mean El.																193.3	193.0	192.8	192.3	191.4	191.0	191.4	191.3	191.0	190.7	190.1	190.4	190.6	201.3	196.5	191.2	Jun-12	192.4	2.9		-5.3	-1.2
	Highest El.																195.2	193.4	193.0	192.7	191.9	191.2	192.2	191.8	191.3	190.9	190.5	191.4	191.3	253.0	253.1	192.2	253.1	199.7	20.9		-60.9	-7.5
Area Average	Mean El.	270.6	232.8	212.6	211.9	246.8	223.3	244.9	204.1	202.5	190.4	231.3	234.7	204.2	198.0	201.9	187.0	188.4	194.5	189.7	183.3	187.2	200.3	195.4	194.1	191.1	192.1	198.4	195.8	190.9	191.7	195.0		197.3	12.7	-6.9	3.2	-2.3
	Highest El.	281.8	254.9	214.4	214.6	248.7	235.4	258.3	208.8	211.2	209.2	243.6	248.0	223.6	209.5	220.1	197.9	198.1	203.2	198.1	193.5	194.8	210.4	198.2	196.5	196.0	198.4	205.1	200.4	208.3	202.0	205.0		207.4	14.7	-15.1	3.0	-2.5
Change vs Prior	Mean El.		-37.8	-20.2	-0.7	34.9	-23.5	21.6	-40.8	-1.7	-12.0	40.9	3.4	-30.5	-6.2	3.9	-14.8	1.4	6.0	-4.7	-6.4	3.9	13.0	-4.8	-1.4	-3.0	1.0	6.3	-2.7	-4.9	0.8	3.2						
	Highest El.		-26.9	-40.5	0.2	34.1	-13.3	22.9	-49.5	2.5	-2.0	34.4	4.4	-24.4	-14.2	10.7	-22.2	0.2	5.1	-5.1	-4.6	1.3	15.5	-12.1	-1.7	-0.5	2.4	6.6	-4.7	7.9	-6.3	3.0						
WESTERN E TENSION																																						
SP-20	Mean El.	317.0	254.6	220.5	213.3	194.5	217.5	186.2	198.8	160.3	184.9	175.1	149.8	155.0	162.1	165.5	231.8	196.9	204.6	195.8	186.4	183.1	219.7	228.8	230.9	237.6	221.0	215.9	214.3	202.2	151.2	177.1	Feb-84	193.5	28.2	-14.2	25.9	-16.4
	Highest El.	350.0	277.0	224.0	216.7	194.5	231.0	214.5	202.4	165.5	233.0	223.3	159.4	158.6	211.6	224.7	290.1	202.4	221.4	247.1	187.6	196.3	248.2	234.7	235.8	245.6	237.3	234.4	226.0	219.0	151.4	203.7	350.0	215.5	33.9	-73.3	52.3	-11.9
SP-21	Mean El.		436.7	407.0		404.0	403.1	402.2	390.5	351.1	353.5	356.0	369.8	368.9	368.7	372.4	374.6	379.5	388.5	387.7	379.4	378.6	390.4	394.0	391.2	388.1	383.9	385.8	386.3	392.3	389.7	389.2	Apr-94	379.1	12.8	17.3	-0.4	10.1
	Highest El.		450.9	407.0		405.0	407.0	410.4	399.1	358.9	361.2	358.0	393.9	374.3	377.1	396.4	379.3	389.6	401.2	393.0	385.5	381.9	408.9	403.3	396.4	393.2	387.5	392.5	394.7	395.0	389.9	389.9	450.9	387.0	13.6	-6.5	0.0	2.9
SP-22	Mean El.		461.1	450.5	451.9	447.5	450.5	451.4	451.0	454.3	457.5	455.3	463.9	462.1	468.9	466.0	468.6	468.8	469.2	470.8	473.0	471.2	471.9	470.2	469.9	469.1	467.9	470.0	470.7	466.9	464.8	465.1	Dec-96	466.8	5.2	-1.2	0.4	-1.6
	Highest El.		493.5	450.5	454.1	450.9	455.7	451.4	451.3	468.0	471.3	464.5	477.0	469.6	501.5	470.4	470.7	471.0	474.2	471.1	476.6	475.1	475.1	471.0	470.9	470.9	469.7	470.9	472.8	470.6	465.1	466.8	501.5	472.4	7.1	-5.3	1.7	-5.6
SP-23	Mean El.					514.2	491.0	499.2	495.6	486.0	496.6	500.8	508.6	511.6	501.5	500.4	486.7	478.0	473.9	476.2	488.9	486.1	496.1	490.7	489.8	494.1	499.8	503.6	495.4	511.1	550.8	519.2	May-12	497.6	16.3	50.4	-31.6	21.5
	Highest El.					514.2	491.0	536.0	509.1	489.4	513.1	507.3	518.2	549.6	527.6	518.4	502.7	488.7	488.6	504.5	538.1	535.7	534.6	500.5	492.0	502.0	503.1	514.0	506.7	551.1	551.0	550.4	551.1	516.8	21.3	32.6	-0.6	33.5
Area Average	Mean El.	317.0	384.2	359.3	332.6	390.0	390.5	384.7	384.0	362.9	373.1	371.8	373.0	374.4	375.3	376.1	390.4	380.8	384.0	382.6	381.9	379.8	394.5	395.9	395.5	397.2	393.1	393.9	391.7	393.1	389.1	387.7		384.3	9.7	13.1	-1.5	3.4
	Highest El.	350.0	407.1	360.5	335.4	391.2	396.2	403.1	390.5	370.5	394.7	388.3	387.1	388.0	404.5	402.5	410.7	387.9	396.4	403.9	397.0	397.3	416.7	402.4	398.8	402.9	399.4	402.9	400.1	408.9	389.3	402.7		397.9	9.7	-13.1	13.3	4.7
Change vs Prior	Mean El.		67.2	-24.8	-26.7	57.4	0.5	-5.8	-0.8	-21.0	10.2	-1.4	1.2	1.4	0.9	0.8	14.4	-9.6	3.2	-1.4	-0.7	-2.2	14.8	1.4	-0.5	1.7	-4.1	0.7	-2.2	1.4	-4.0	-1.5						
	Highest El.		57.1	-46.6	-25.1	55.8	5.0	6.9	-12.6	-20.0	24.2	-6.4	-1.1	0.9	16.4	-2.0	8.2	-22.8	8.4	7.6	-7.0	0.3	19.4	-14.3	-3.6	4.1	-3.5	3.5	-2.9	8.9	-19.6	13.3						
EASTERN MESA																																						
PC-1	Mean El.												148.0	142.4	148.1	139.4	138.4	136.6	137.6	138.4	138.3	139.1	140.2	141.9	139.8	136.2	136.7	138.9	139.1	137.4	134.8	134.8	Dec-96	139.3	3.6	-4.6	0.0	-4.5
	Highest El.												148.2	145.2	190.0	153.5	138.9	137.5	138.8	138.9	139.2	139.6	142.4	142.5	141.5	137.2	138.1	140.4	140.0	140.2	135.2	135.1	190.0	143.1	11.8	-18.3	-0.1	-8.0
SP-3	Mean El.	125.5	119.8	118.5	121.3	122.0	118.3			117.7		119.7	120.6	121.6	118.7	119.2	119.1	117.9	118.0	117.1	111.4	111.7	109.0	116.2	115.4	110.3	94.0	87.0	87.7	108.6	103.6	104.6	Nov-83	111.3	10.3	-15.6	1.0	-6.7
	Highest El.	126.1	120.0	118.5	121.5	125.9	120.0			118.4		120.7	124.6	123.7	120.7	120.6	120.2	118.4	118.4	118.5	114.8	114.9	117.9	117.1	116.9	115.5	100.6	91.7	91.0	113.2	103.8	105.9	126.1	114.0	9.4	-16.8	2.1	-8.1
SP-3A	Mean El.		105.0	74.0	79.5	75.7	79.2	80.5	82.5	89.5	86.3	88.6	87.6	99.1	94.1	96.1	96.8	79.2	77.0	75.1	72.3	62.5	67.8	68.7	68.5	67.1	65.7	64.7	64.1	67.0	64.7	66.5	Apr-85	76.9	12.4	-31.3	1.7	-10.4
	Highest El.		105.0	74.0	81.4	78.4	80.0	81.0	85.4	99.0	90.5	94.0	100.3	101.2	95.6	103.6	101.4	83.0	82.2	76.1	74.1	72.0	93.5	70.2	69.7	68.2	66.7	66.8	65.1	69.8	66.9	66.9	105.0	81.6	14.1	-36.7	0.0	-14.7
SP-33	Mean El.						151.6	149.0	148.3	144.4	118.7	126.5	100.2	93.8	89.2	88.7	87.1	84.4	78.2	75.7	73.8	72.1	71.2	69.5	68.1	66.8	67.9	67.4	66.9	64.9	66.7	66.3	May-92	83.0	21.5	-22.0	-0.4	-16.7
	Highest El.						156.7	149.8	148.5	155.5	123.1	134.9	109.0	95.4	91.3	90.9	90.7	89.2	79.9	77.0	74.5	72.9	73.5	70.1	68.7	67.5	70.9	67.9	67.1	67.0	66.9	66.6	156.7	85.7	24.1	-24.0	-0.3	-19.1
Area Average	Mean El.	125.5	112.4	96.3	100.4	98.8	116.3	114.8	115.4	117.2	102.5	111.6	114.1	114.2	112.6	110.8	110.3	104.6	102.7	101.6	98.9	96.4	97.1	99.1	98.0	95.1	91.1	89.5	89.4	94.5	92.5	93.1		101.6	8.7	-18.4	0.6	-8.5
	Highest El.	126.1	112.5	96.3	101.5	102.2	118.9	115.4	117.0	124.3	106.8	116.5	120.5	116.4	124.4	117.2	112.8	107.0	104.8	102.6	100.7	99.9	106.8	100.0	99.2	97.1	94.1	91.7	90.8	97.5	93.2	93.6		105.1	10.5	-24.0	0.4	-11.5
Change vs Prior	Mean El.		-13.1	-16.1	4.1	-1.6	17.5	-1.6	0.6	1.8	-14.7	9.1	2.5	0.1	-1.6	-1.7	-0.5	-5.8	-1.8	-1.2	-2.6	-2.6	0.7	2.0	-1.1	-2.9	-4.0	-1.6	-0.1	5.0	-2.0	0.6						
	Highest El.		-13.6	-16.3	5.2	0.7	16.8	-3.5	1.6	7.3	-17.5	9.7	4.0	-4.1	8.0	-7.2	-4.4	-5.8	-2.2	-2.2	-2.0	-0.8	7.0	-6.9	-0.8	-2.1	-3.0	-2.4	-0.9	6.7	-4.3	0.4						

GROUNDWATER ELEVATION DATA ANALYSIS
Big Rock Mesa Landslide Assessment District
Malibu, California

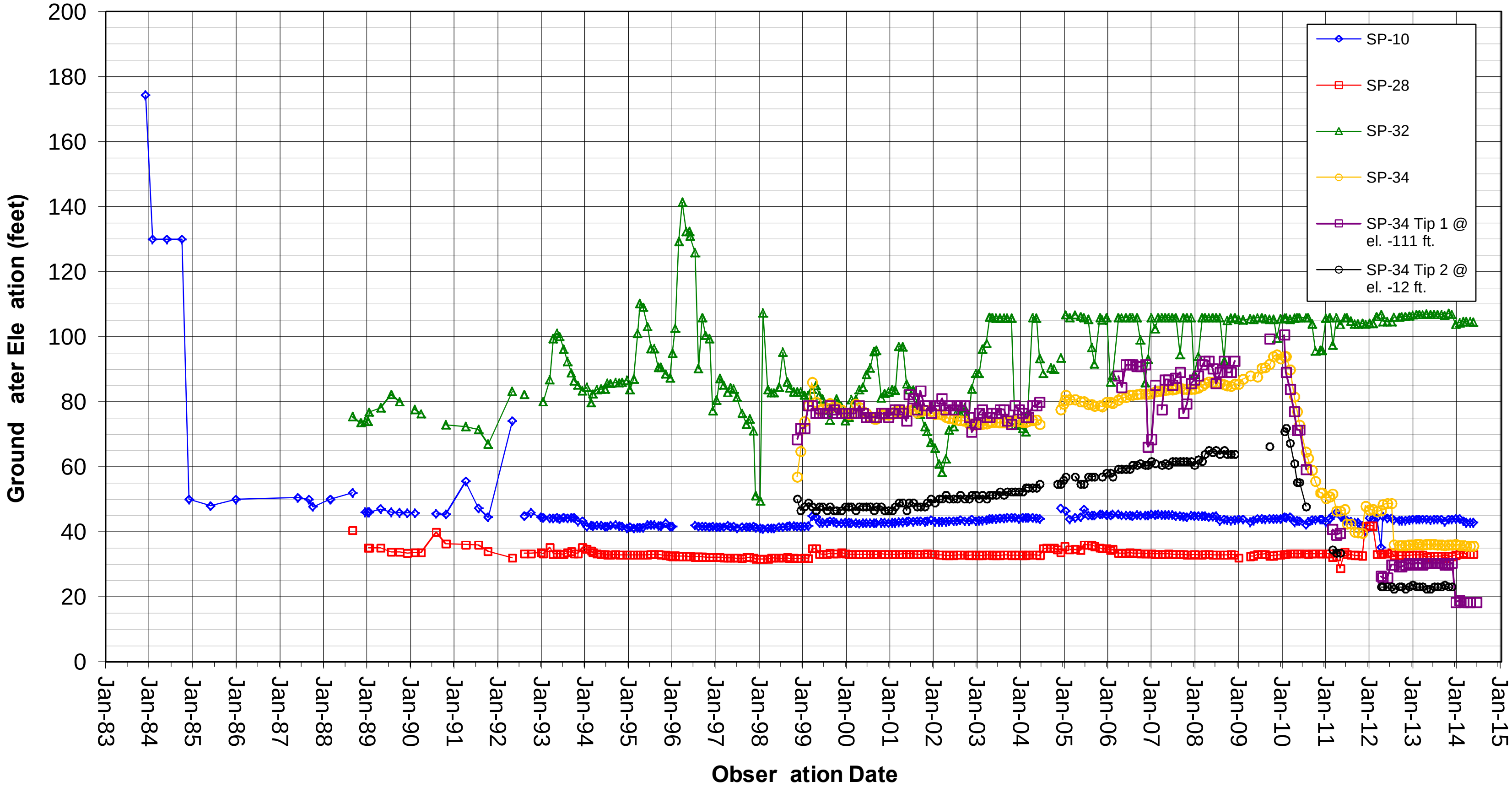


GROUNDWATER ELEVATION DATA
Pacific Coast Highway (Western Half)
Big Rock Mesa Landslide Assessment District
Malibu, California



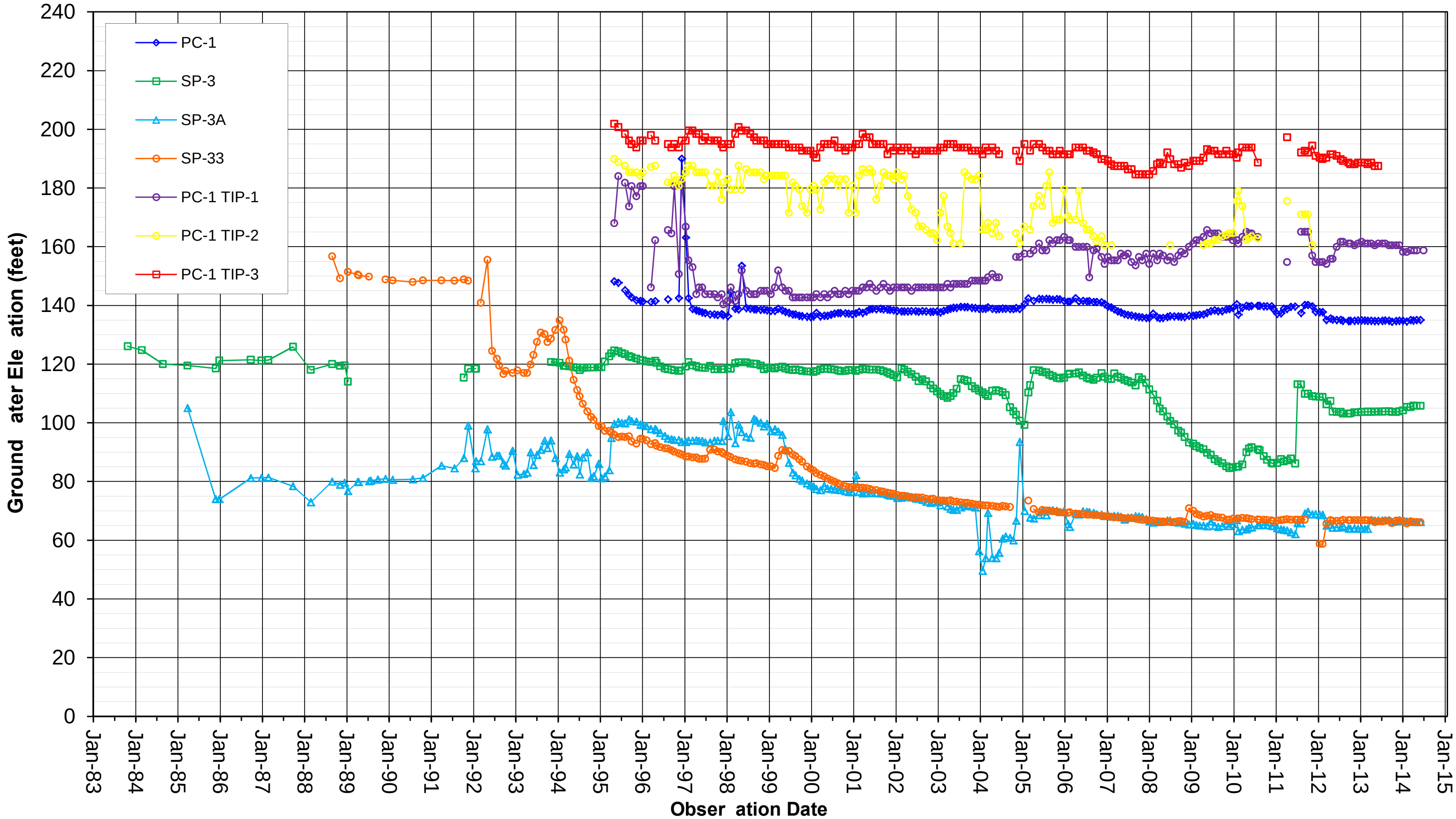
GROUNDWATER ELEVATION DATA
Pacific Coast Highway (Eastern Half)
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE A-3b



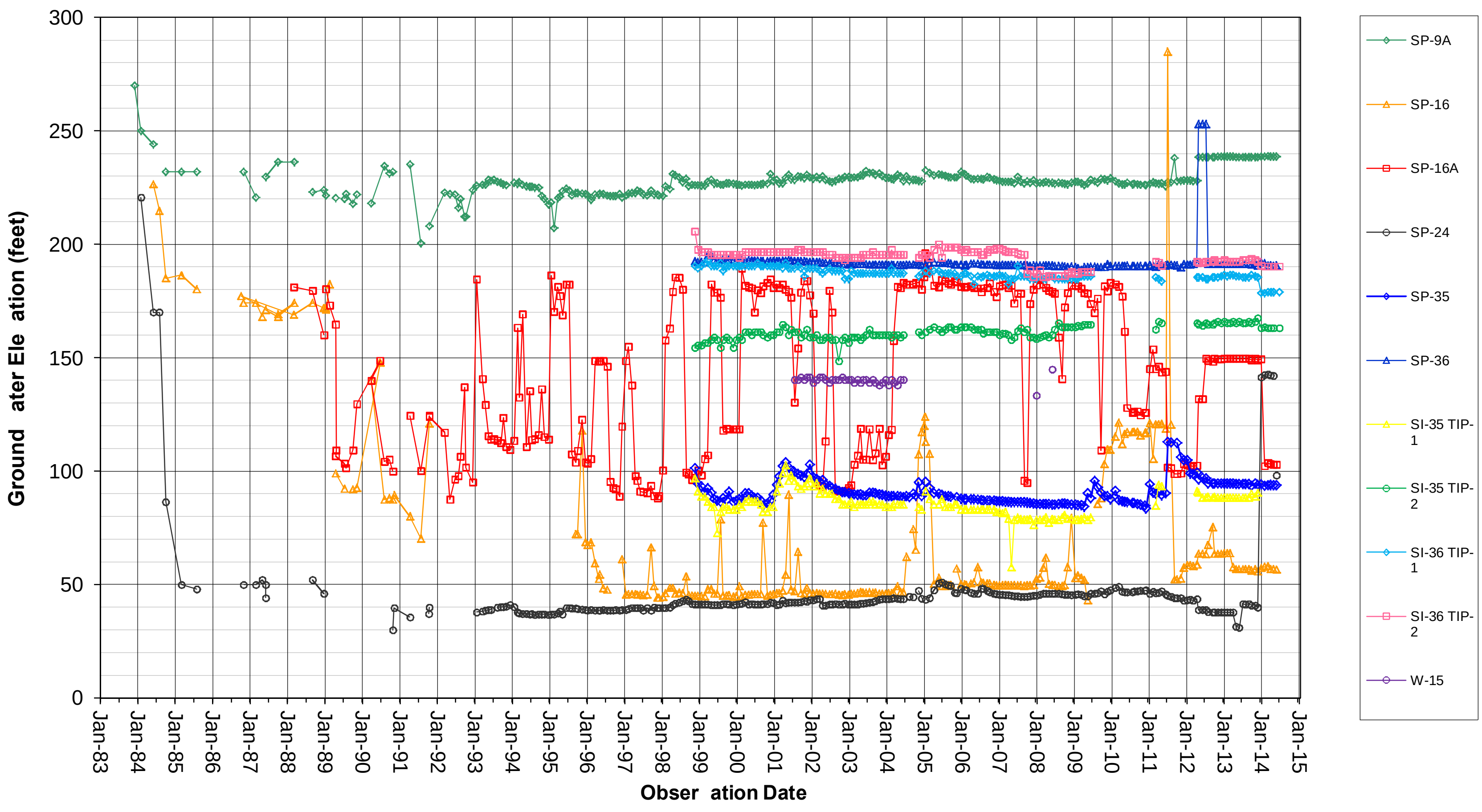
GROUNDWATER ELEVATION DATA
Bluff Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE A-4



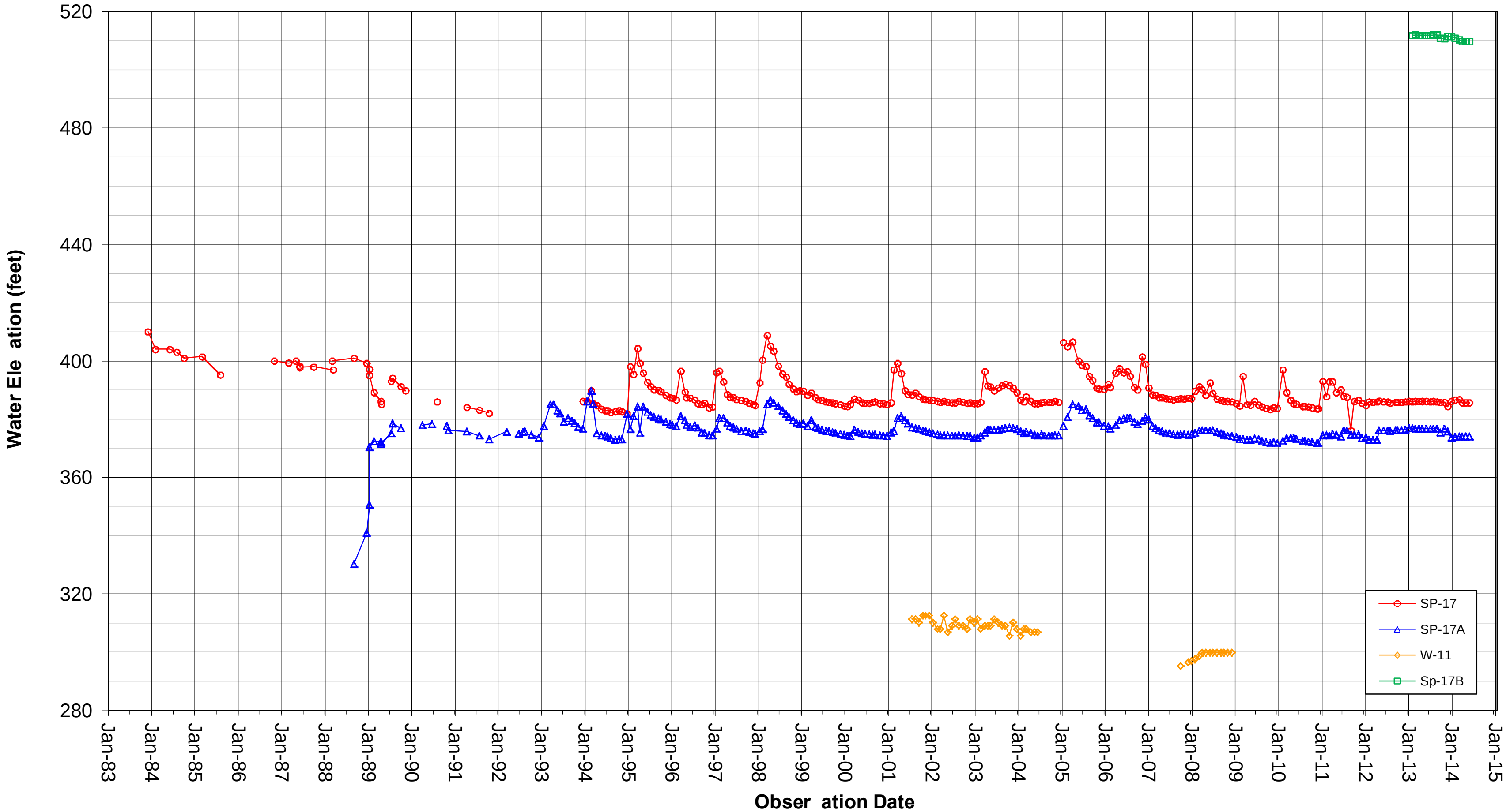
GROUNDWATER ELEVATION DATA
Eastern Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE A-5

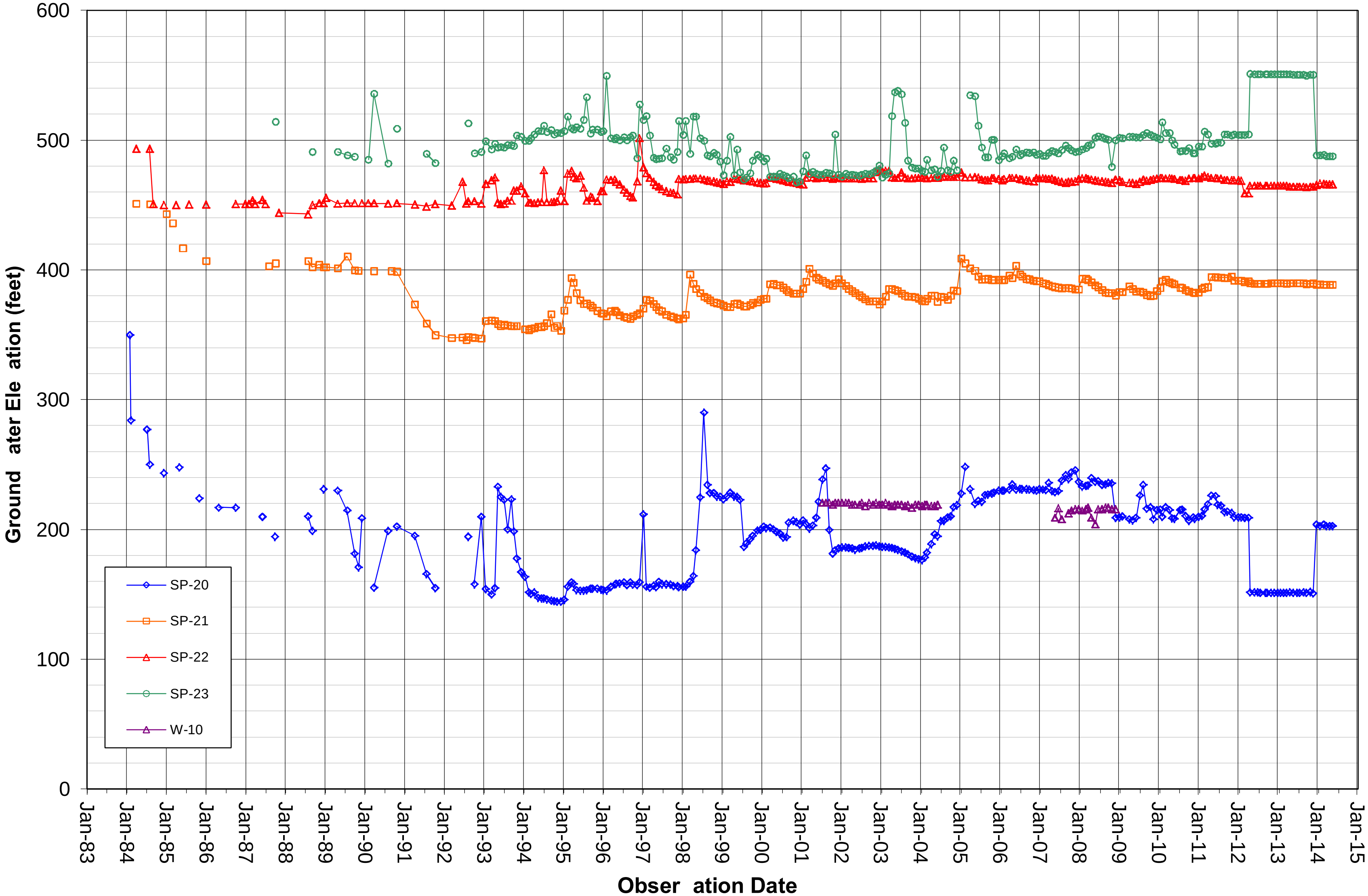


GROUNDWATER ELEVATION DATA
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE A-6a

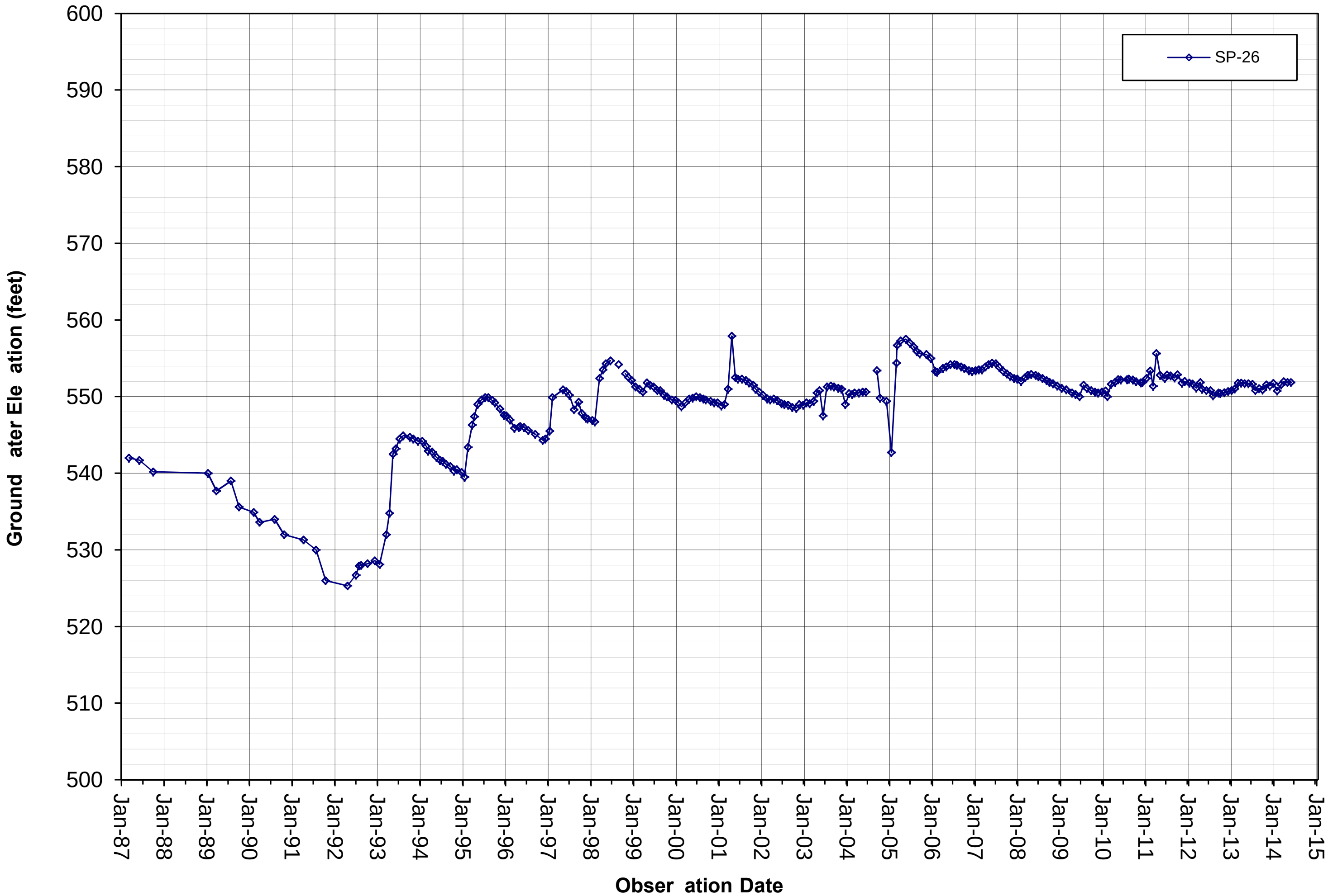


GROUNDWATER ELEVATION DATA
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California



GROUNDWATER ELEVATION DATA
Western Extension
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE A-7



GROUNDWATER ELEVATION DATA
Headscarp Area
Big Rock Mesa Landslide Assessment District
Malibu, California

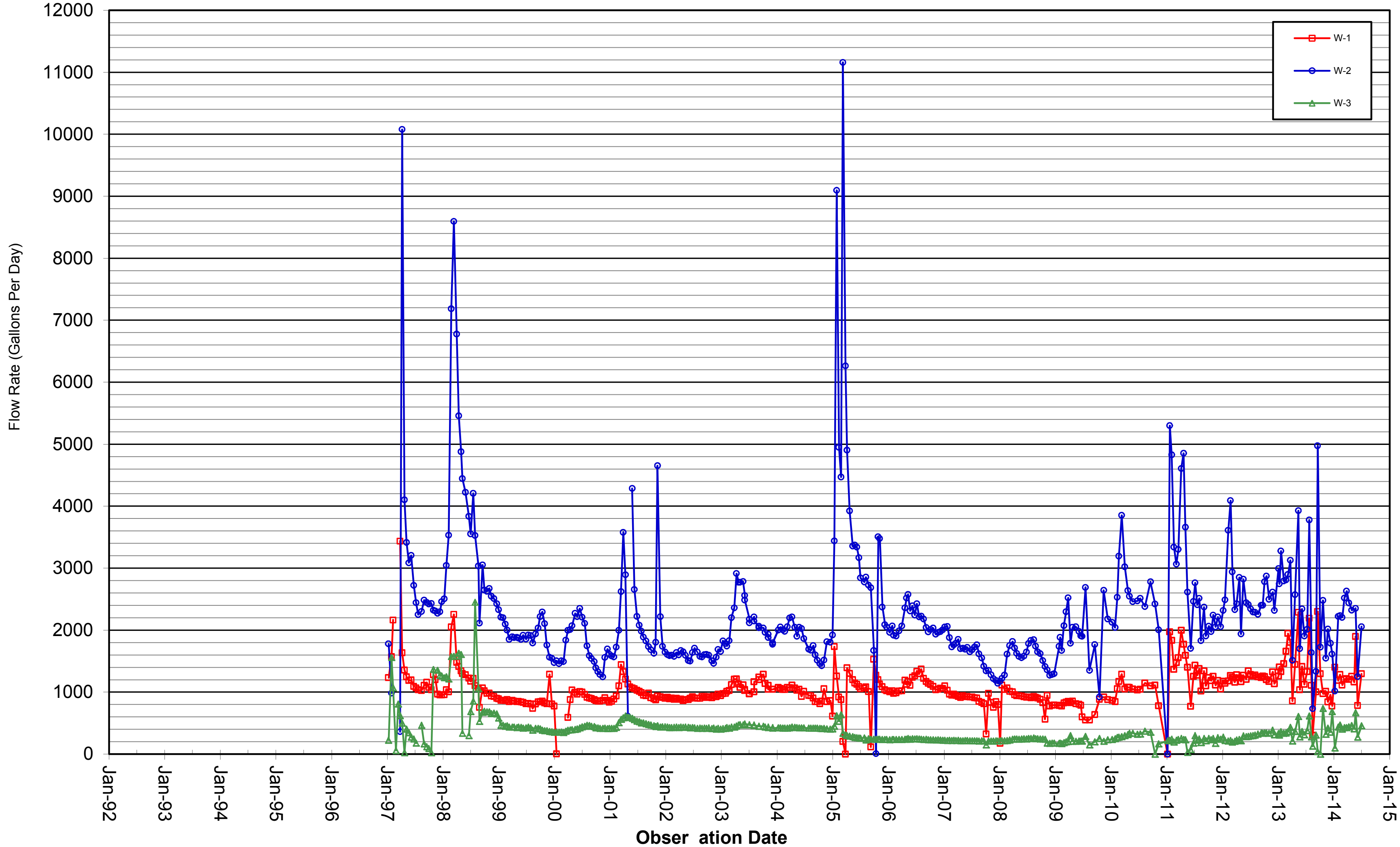
APPENDIX B
DEWATERING WELL DATA

SUMMARY OF DEWATERING WELL INFORMATION

Well I D	TOP ELE (ft)	BOTTOM ELE (ft)	P MP ELE (ft)	P MP SI E (HP)	1 -1 P MPING RATE (GPD)	of TOTAL PROD CTION	Ran	Drainage Port	COMMENT
W-1	210.5	-30	14.5	1.5	1,395	3%	11	3	
W-2	219	41	44	1.5	2,590	5%	7	3	
W-3	243.5	65.5	70.5	3/4	359	1%	22	3	
W-4	248	-10	N/A	N/A	0	0%	24	N/A	Casing Perforations closed due to siltation
W-5	280	252	N/A	N/A	0	0%	24	N/A	Capped 4/4/84
W-6	174	80	N/A	N/A	0	0%	24	N/A	Static water level at bottom of casing
W-7	257	171	N/A	N/A	0	0%	24	N/A	Static water level at bottom of casing
W-8	287	93	98	1	6,021	13%	2	4	
W-9	282	87	N/A	N/A	0	0%	24	N/A	Static water level at bottom of casing
W-10	432	192	194	3/4	0	0%	24	N/A	Static water level
W-11	507	285	292	3/4	0	0%	24	N/A	
W-12	375	195	N/A	N/A	0	0%	24	N/A	Casing sheared at static water level
W-13	361	184	193	1	1,566	3%	9	5	
W-14	283	131	N/A	N/A	0	0%	24	N/A	Static water level at bottom of casing
W-15	295	121	130	3/4	0	0%	24	N/A	Static water level at bottom of casing
W-16	325	107	113	3/4	5,386	11%	3	5	
W-17	270	41	50	3/4	2,782	6%	6	4	
W-18	750	179	225	3	8,115	17%	1	6	
BYA-1	281	-162	-128	3	1,149	2%	13	4	
BYA-2	665	215	242	1.5	596	1%	19	6	
BYA-3	510	-40	29	3	2,153	5%	8	6	
BYA-4	372	-68	-28	1.5	4,298	9%	4	5	
BYA-5	189	-231	-211	1.5	456	1%	20	1	
BYA-6	220	-280	-275	0.75	364	1%	21	1	
BYA-7	240	-120	-115	0.75	804	2%	15	2	
BYA-9	295	-105	-100	7.5(5)	2,925	6%	5	5	
BYA-10	510	210	215	1	800	2%	16	5A	
BYA-11	275	-125	-120	0.75	1,534	3%	10	5	
BYA-12	207	-140	-137	0.5	165	0%	23	1	Installed 4/99
BYA-13	329	-14	-18	0.5	981	2%	14	3	Installed 4/99
BYA-14	265	38	40	0.5	793	2%	17	1A	Installed 4/99
BYA-15	425				0	0%	24	N/A	
FW-1	170				650	1%	18	1A	Unable to remove plate for reading after 09/2014
FW-2	270	-130			1,226	3%	12	4	Installed 2/10

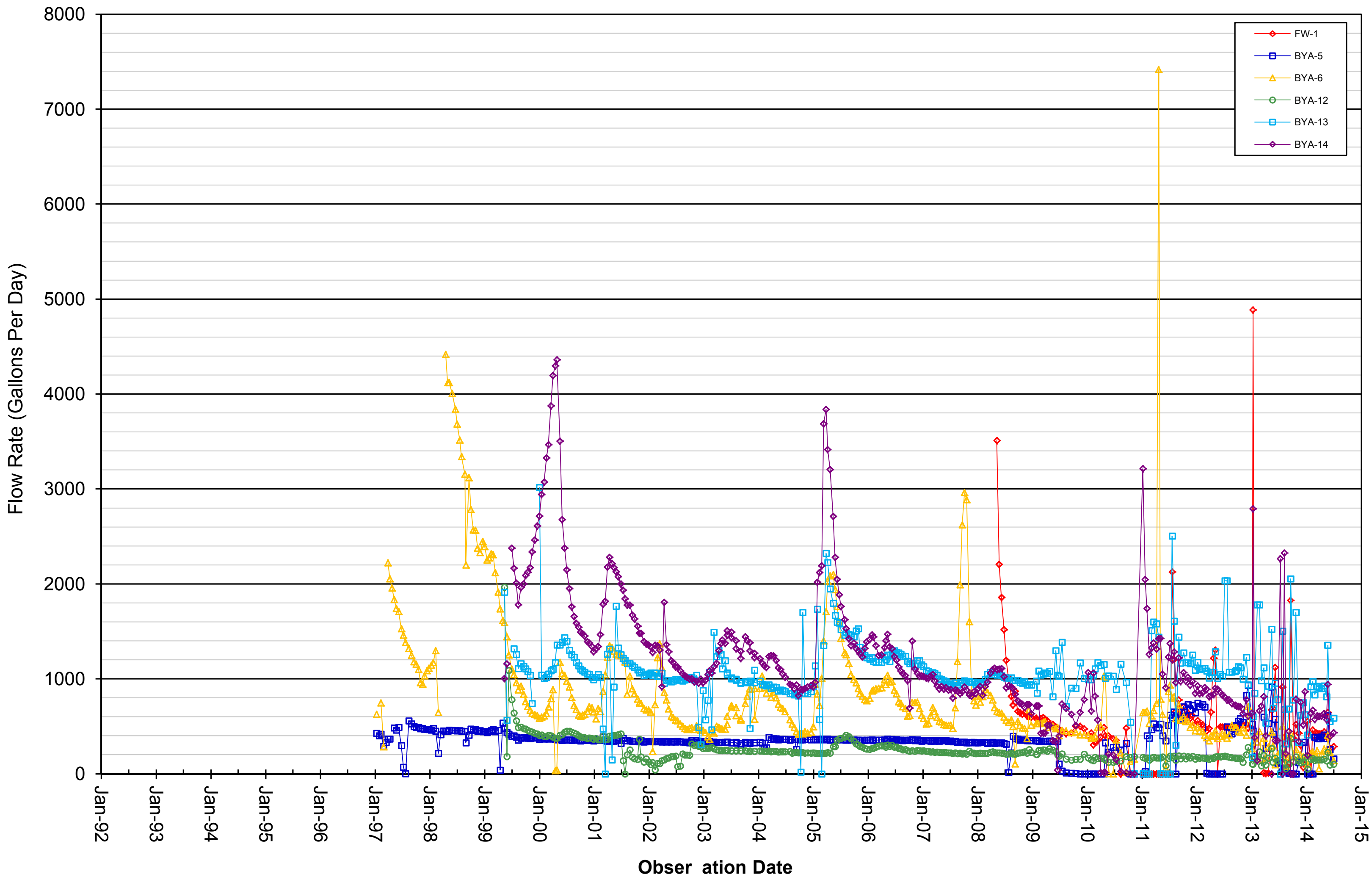
Note:
- Not functioning or no longer monitored dewatering well

DEWATERING WELL INFORMATION
Big Rock Mesa Landslide Assessment District
Malibu, California



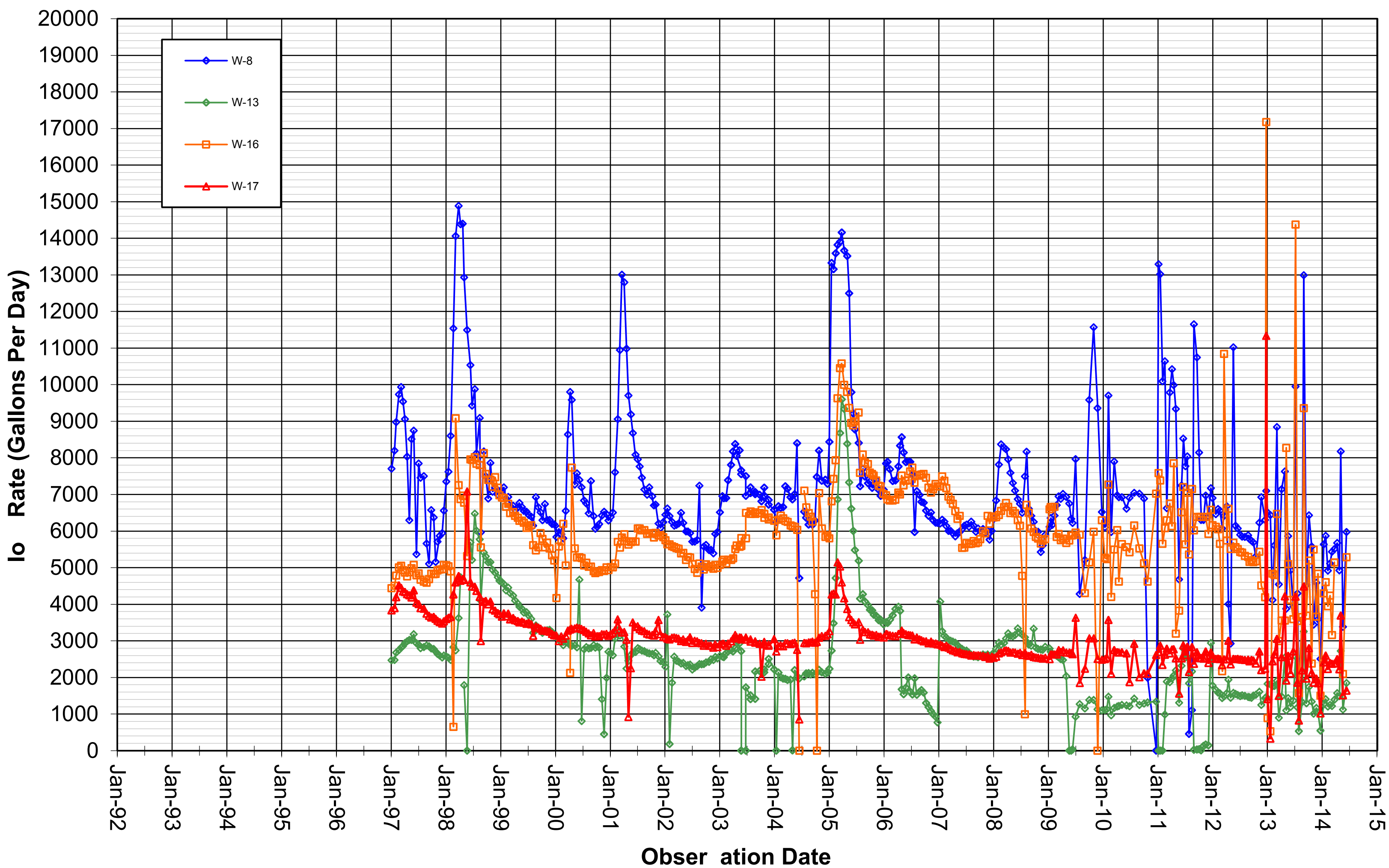
DEWATERING WELL HYDROGRAPHS
Eastern Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE B-2a



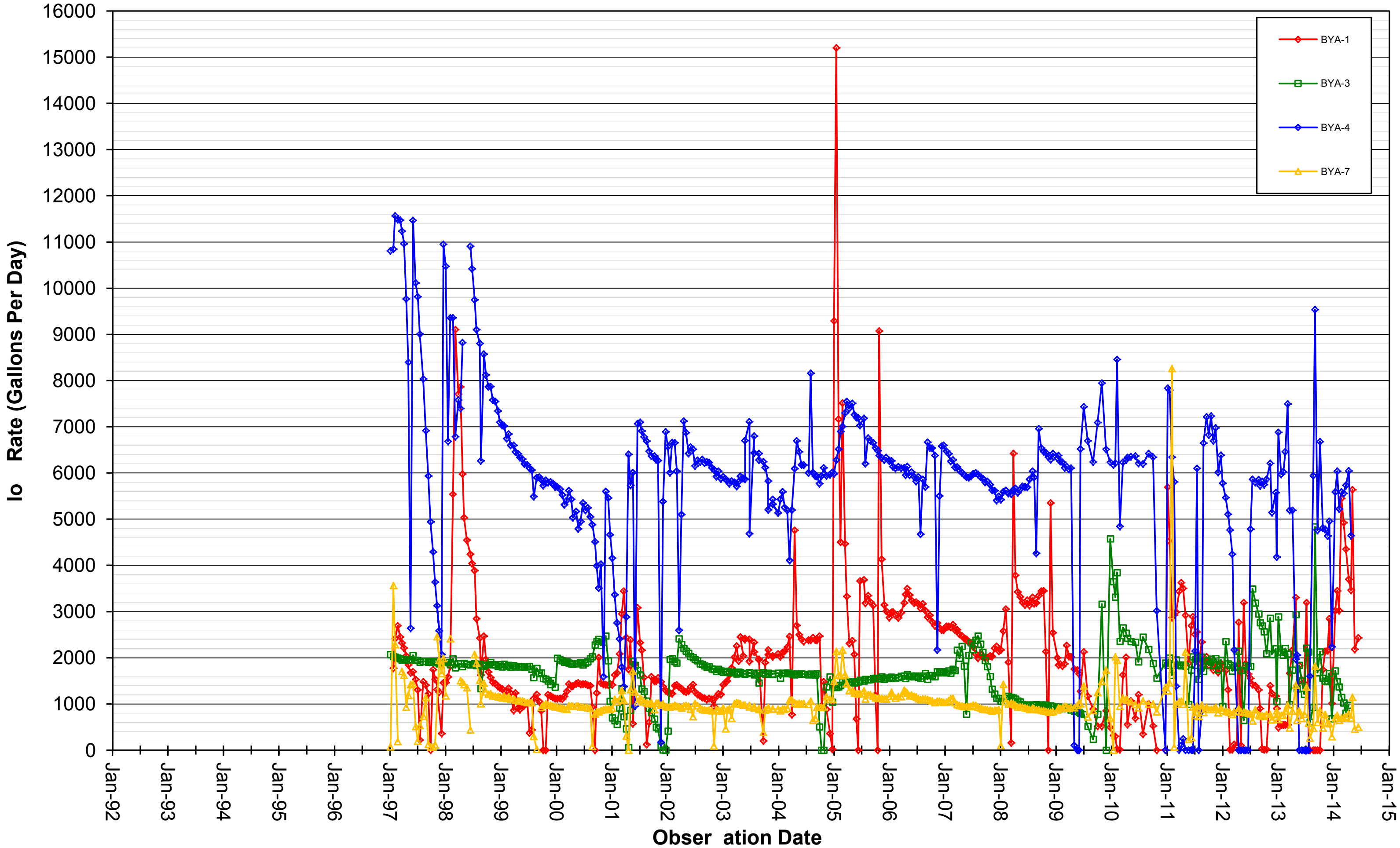
DEWATERING WELL HYDROGRAPHS
Eastern Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE B-2b



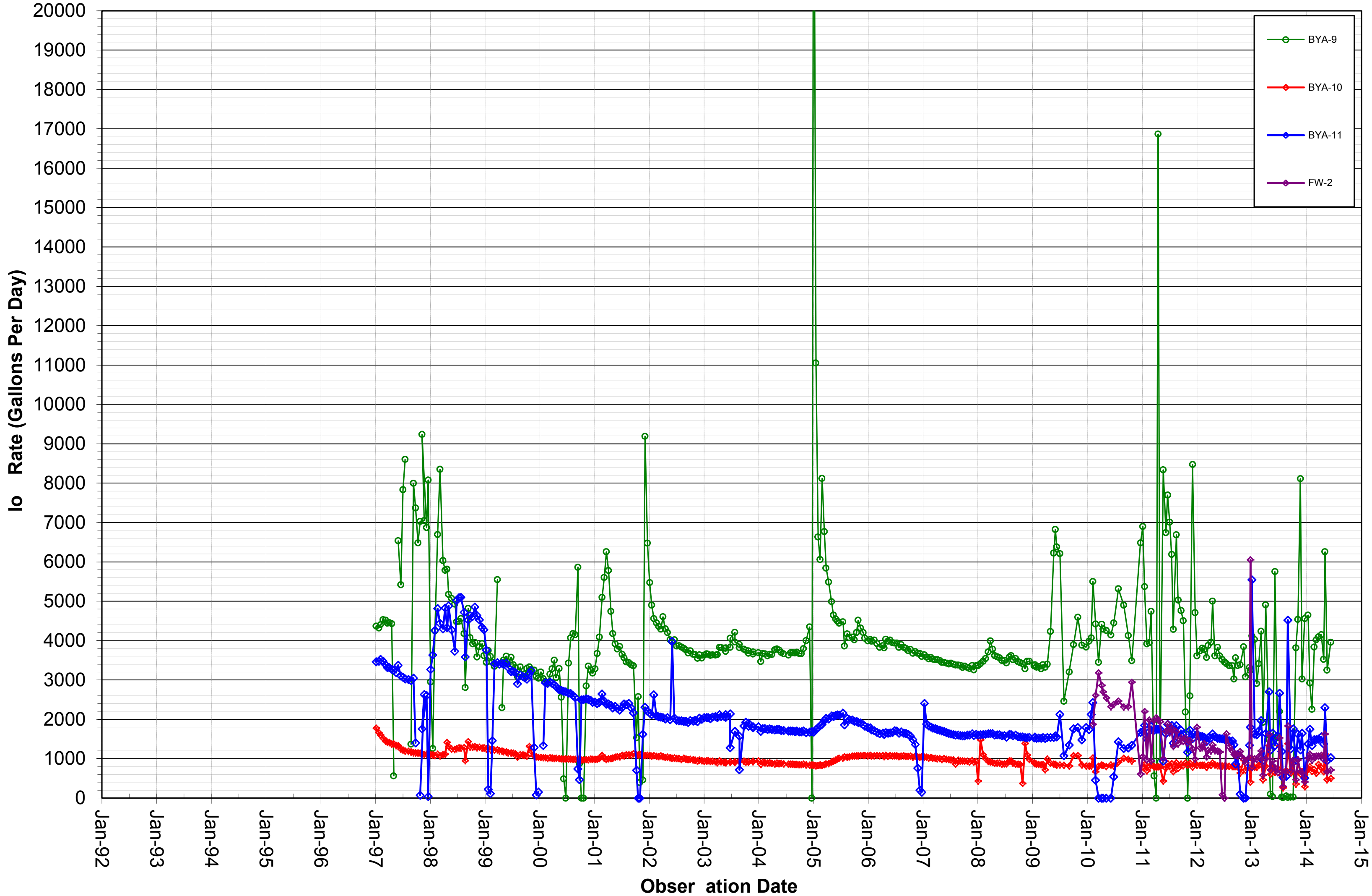
DEWATERING WELL HYDROGRAPHS
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE B-3a

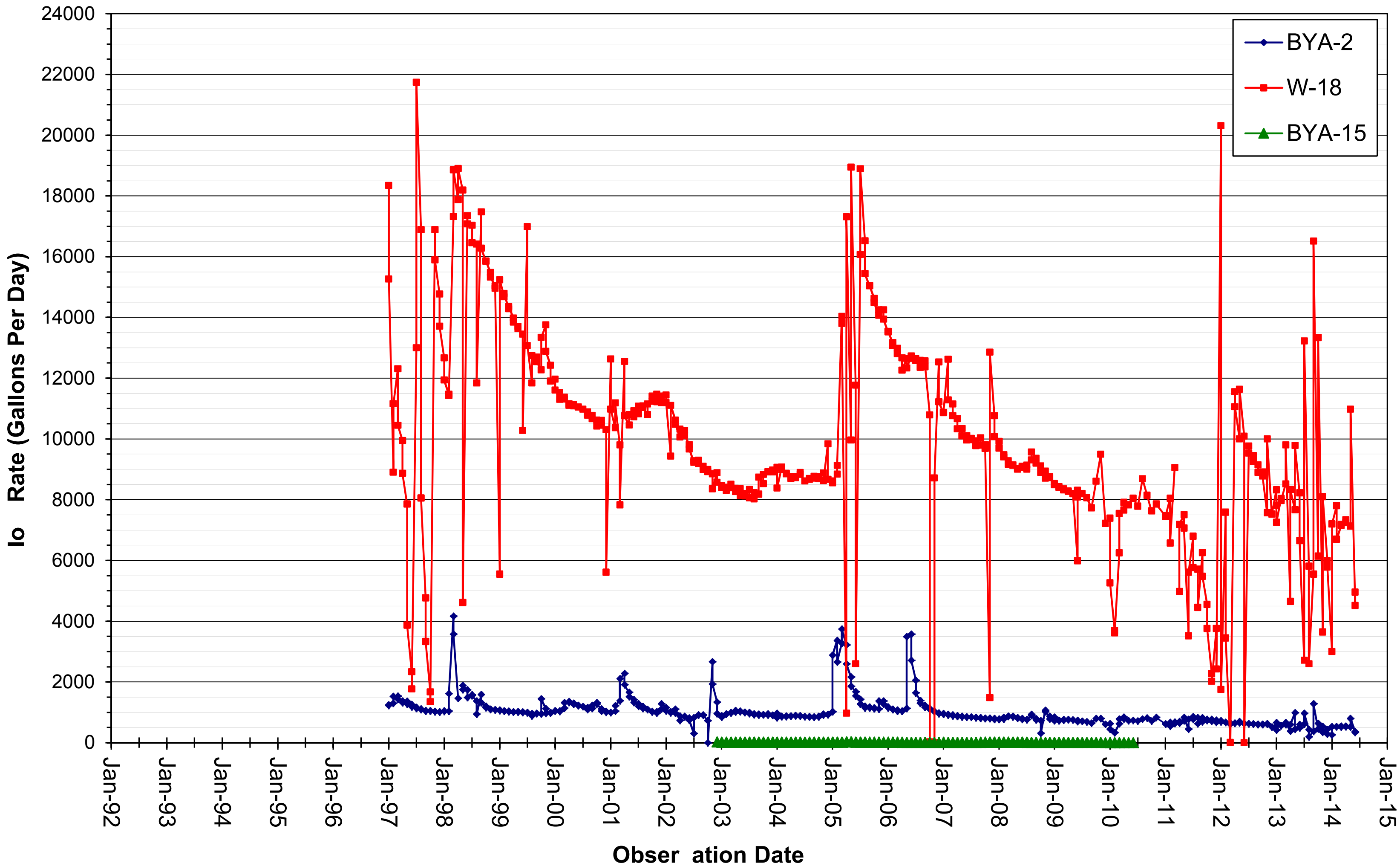


DEWATERING WELL HYDROGRAPHS
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE B-3b



DEWATERING WELL HYDROGRAPHS
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California



DEWATERING WELL HYDROGRAPHS
Western Extension
Big Rock Mesa Landslide Assessment
District Malibu, California

PLATE B-4

APPENDIX C
HYDRAUGER DATA

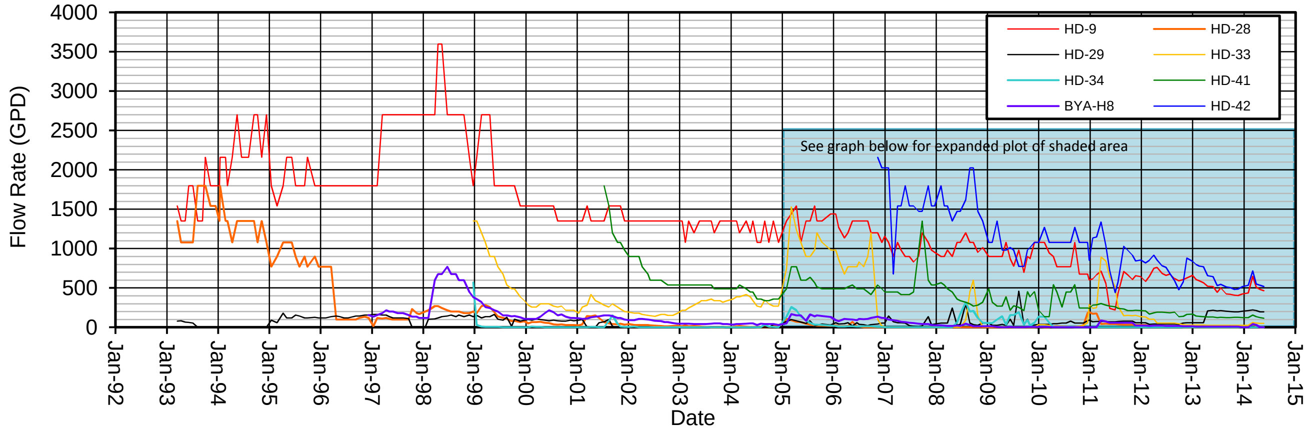
SUMMARY OF HYDRAUGER INFORMATION

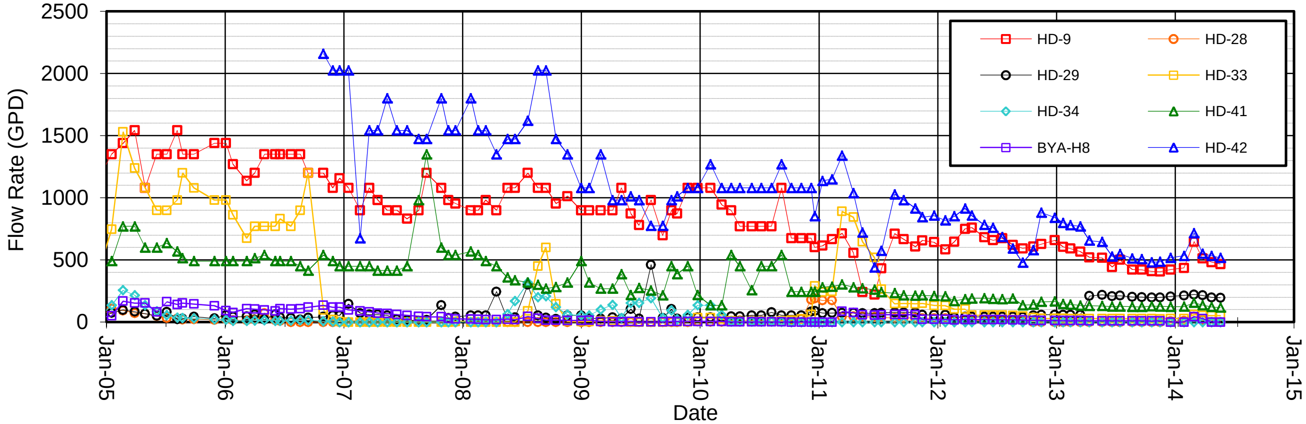
H DRA GER ID	INSTALLED LENGTH (ft)	OPEN LENGTH (ft)**	Orientation/ Slope	1 - 1 A erage lo (GPD)	O TOTAL PROD CTION	Ran	INSTALLED B
H-1	700	210**	S115W / 3	3	0.0%	24	MT
HD-4	760	10	-	815	9.1%	3	D.E.
HD-5	890	530**	-	465	5.2%	8	D.E.
HD-6	980	490**	-	380	4.2%	10	D.E.
HD-7	1160	420**	-	98	1.1%	18	D.E.
HD-9	205	205**	-	464	5.2%	9	D.E.
HD-10	990	170**	-	348	3.9%	12	D.E.
HD-11	540	540**	-	72	0.8%	19	D.E.
HD-12	690	385**	-	894	9.9%	2	D.E.
HD-15	200	200**	-	357	4.0%	11	D.E.
HD-22	568	540**	-	700	7.8%	4	D.E.
HD-23	1280	260**	-	1822	20.2%	1	D.E.
HD-24	1030	580**	-	234	2.6%	14	D.E.
HD-25	1005	360**	-	60	0.7%	20	D.E.
HD-26	1200	410**	S37W / 1	262	2.9%	13	D.E.
HD-28	1420	595**	-	6	0.1%	23	D.E.
HD-29	1150	450**	-	206	2.3%	15	D.E.
HD-30	1040	10**	S13W / 7	128	1.4%	17	D.E.
HD-33	340	340	S23W / 5	36	0.4%	21	BYA
HD-41	500	500	S18E / 3	128	1.4%	16	BYA
BYA-H8	500	345**	-	11	0.1%	22	BYA
BYA-H10	500	10**	-	470	5.2%	7	BYA
HD-42	700	700		536	6.0%	5	FWI
HD-43	700	700		505	5.6%	6	FWI
H-2*	Unknown	0	-		--		MT
H-3a*	Unknown	0	-		--		MT
H-3b*	Unknown	0	-		--		MT
H-3c*	Unknown	0	-		--		MT
H-4	680	115**	-	1	0.0%		MT
H-5a*	Unknown	0	-		--		MT
H-5b*	Unknown	0	-		--		MT
H-6a*	100	96	-		--		CT
H-6b*	100	96	-		--		CT
H-7a*	100	100	-		--		CT
H-7b*	100	96	-		--		CT
H-7c*	50	0	-		--		CT
H-8*	Unknown	0	-		--		CT
HD-1*	350	340**	-		--		D.E.
HD-2a*	70	33	-		--		D.E.
HD-2b*	Unknown	0	-		--		D.E.
HD-2c*	460	0	-		--		D.E.
HD-3	560	90**	-		--		D.E.
HD-8*	530	170**	-		--		D.E.
HD-13*	650	14	-		--		D.E.
HD-14*	130	130**	-		--		D.E.
HD-16	575	575**	-		--		D.E.
HD-17*	750	176	-		--		D.E.
HD-18*	870	285	-		--		D.E.
HD-19*	1000	182	-		--		D.E.
HD-20*	1000	446	-		--		D.E.
HD-21*	1560	147	-		--		D.E.
HD-27*	700	327	-		--		D.E.
HD-31*	140	113	-		--		D.E.
HD-32*	835	700**	-		--		D.E.
HD-34	150	150	S40W / 10	0	--		BYA
HD-35*	40	40	-		--		BYA
HD-36*	150	150	-		--		BYA
HD-37*	430	50	-		--		BYA
HD-38A*	140	140	S23W / 5		--		BYA
HD-38B*	140	140	S18W / 6		--		BYA
HD-39	400	400	S15E / 5		--		BYA
HD-40*	595	595	S25W / 6		--		BYA
BYA-6a*	350	20**	-		--		BYA
BYA-6b	60	60	-	0	--		BYA
BYA-7	400	375**	-	1	0.0%		BYA
BYA-H9*	550	550**	-		--		BYA
BYA-H11*	450	400**	S7E / 3		--		BYA

** Not functioning or no longer monitored hydrauger*
*** Open Length is Measured on 10-1997 by BYA*
Installed by: MT = Moore & Taber; CT = Caltrans; D.E. = D.A. Evans; BYA = Bing Yen & Associates; FWI = Fugro West, Inc.

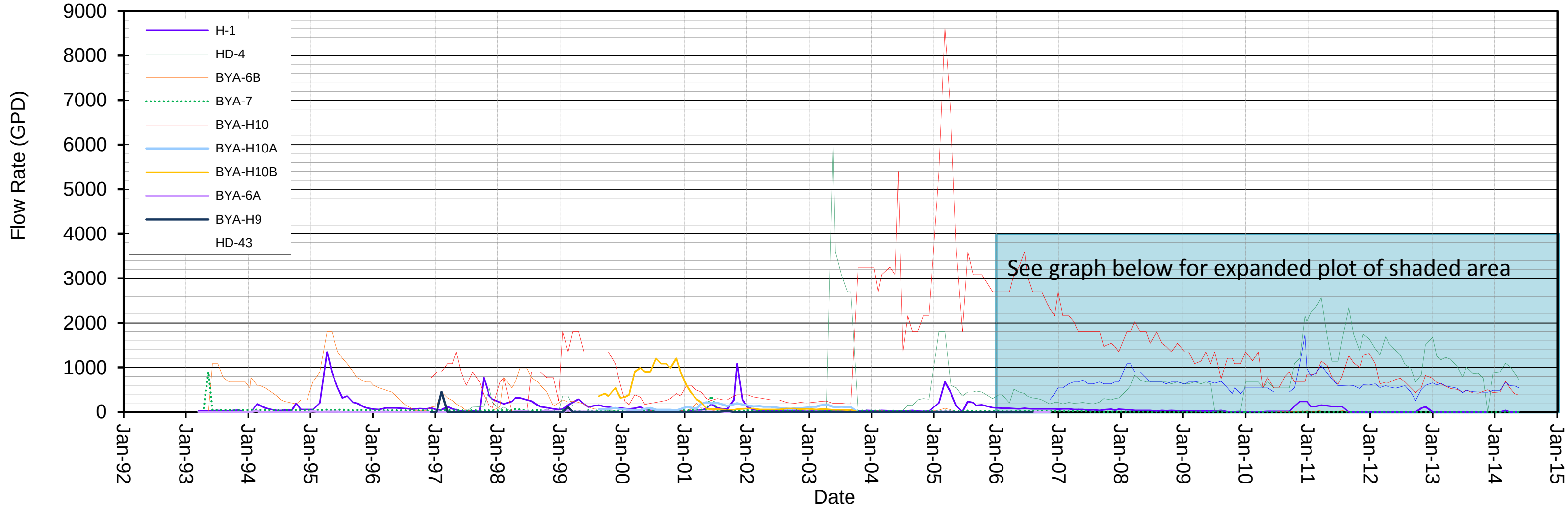
HYDRAUGER INFORMATION
Big Rock Mesa Landslide Assessment District
Malibu, California

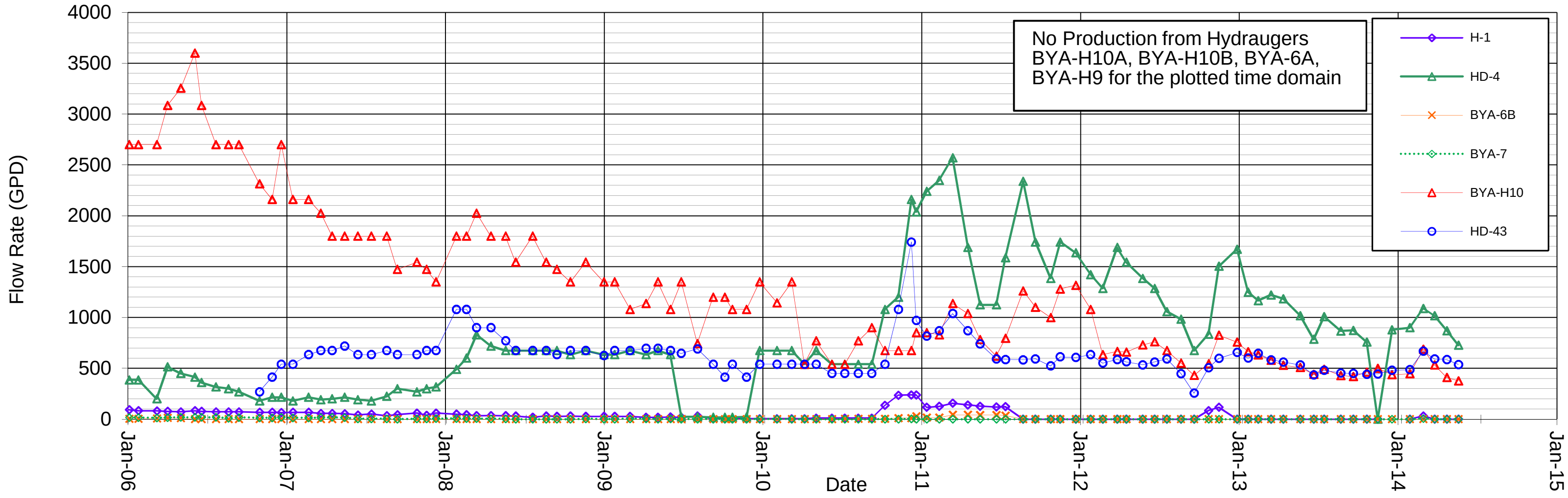
PLATE C-1





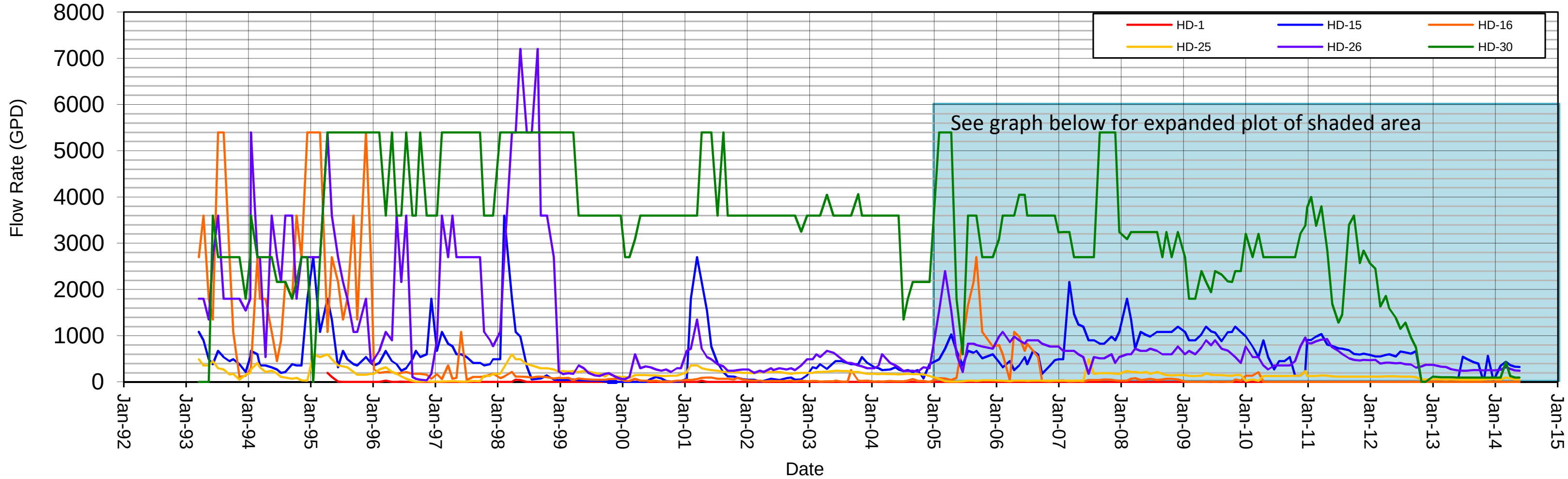
HYDRAUGER HYDROGRAPHS
Eastern Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

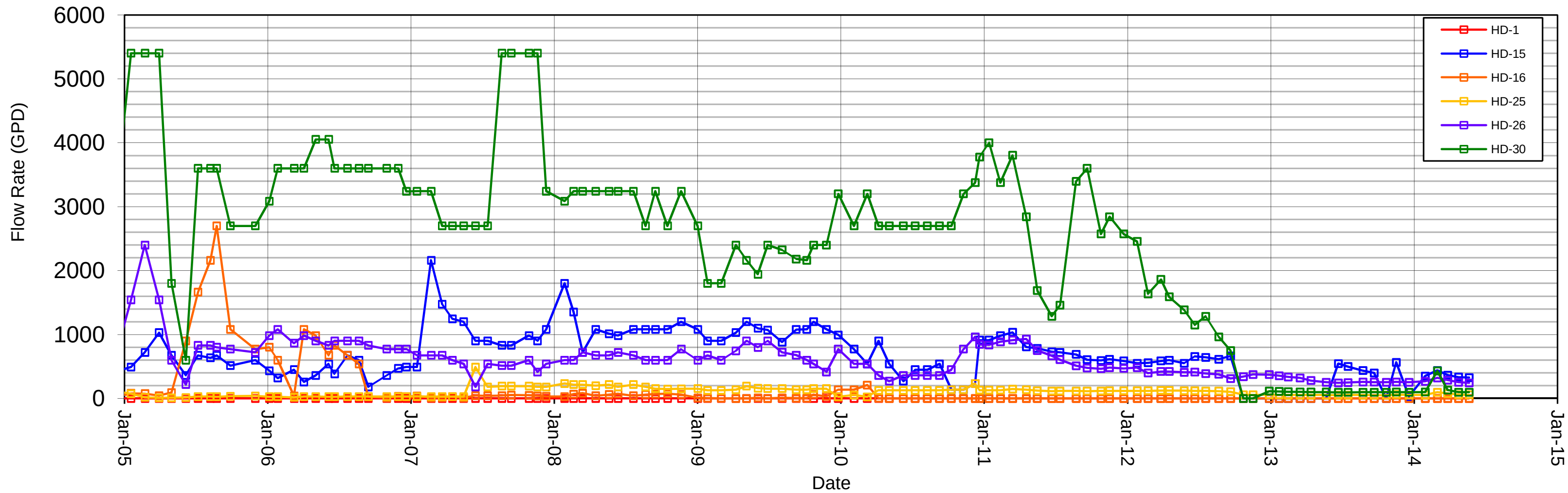




HYDRAUGER HYDROGRAPHS
Eastern Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

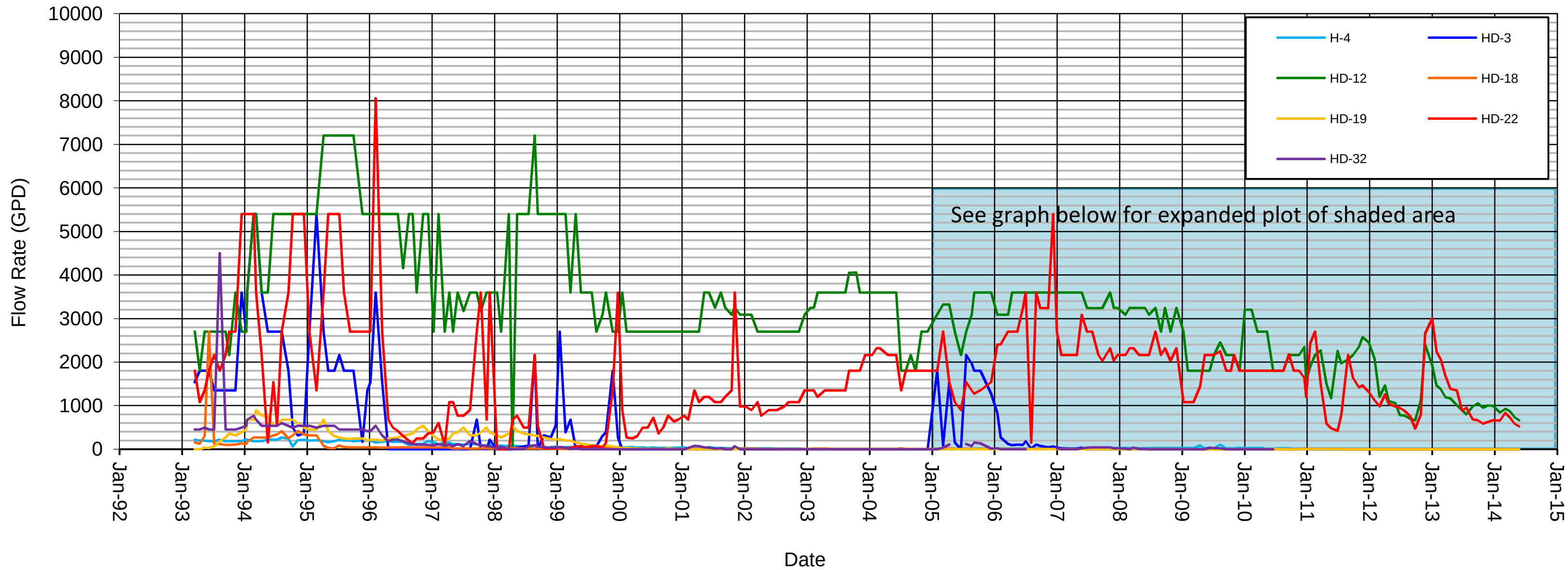
PLATE C-2b

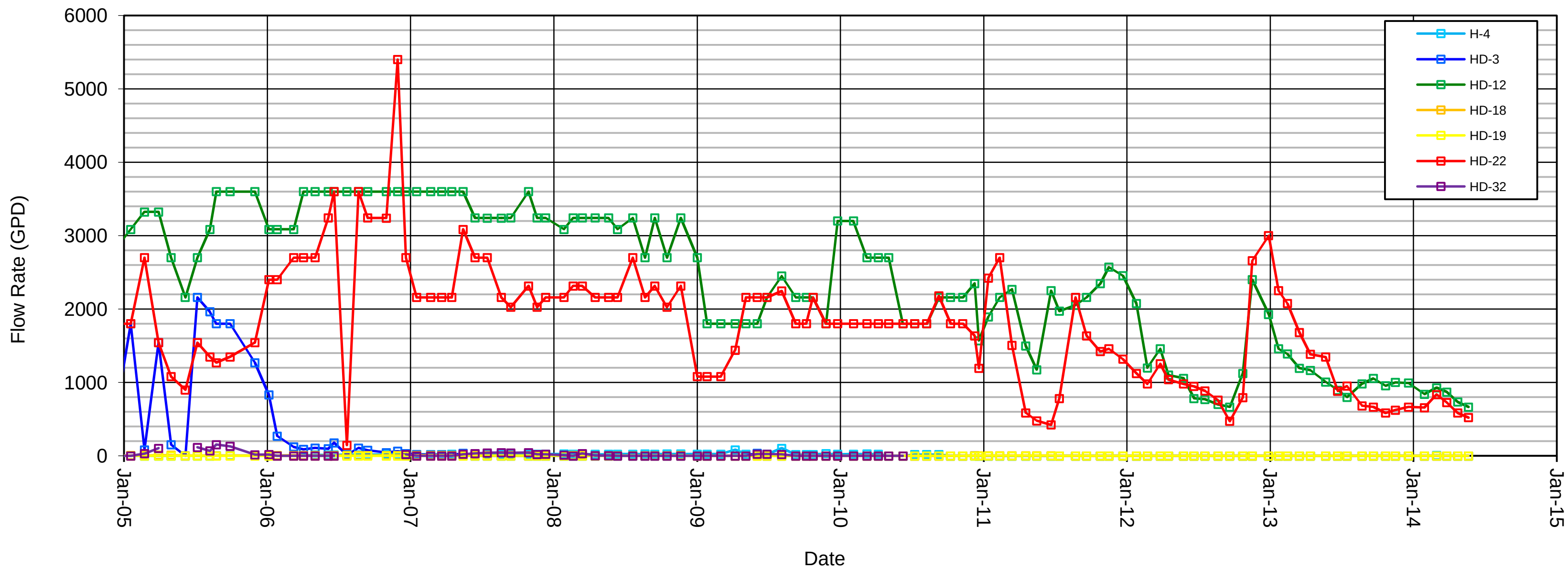




HYDRAUGER HYDROGRAPHS
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

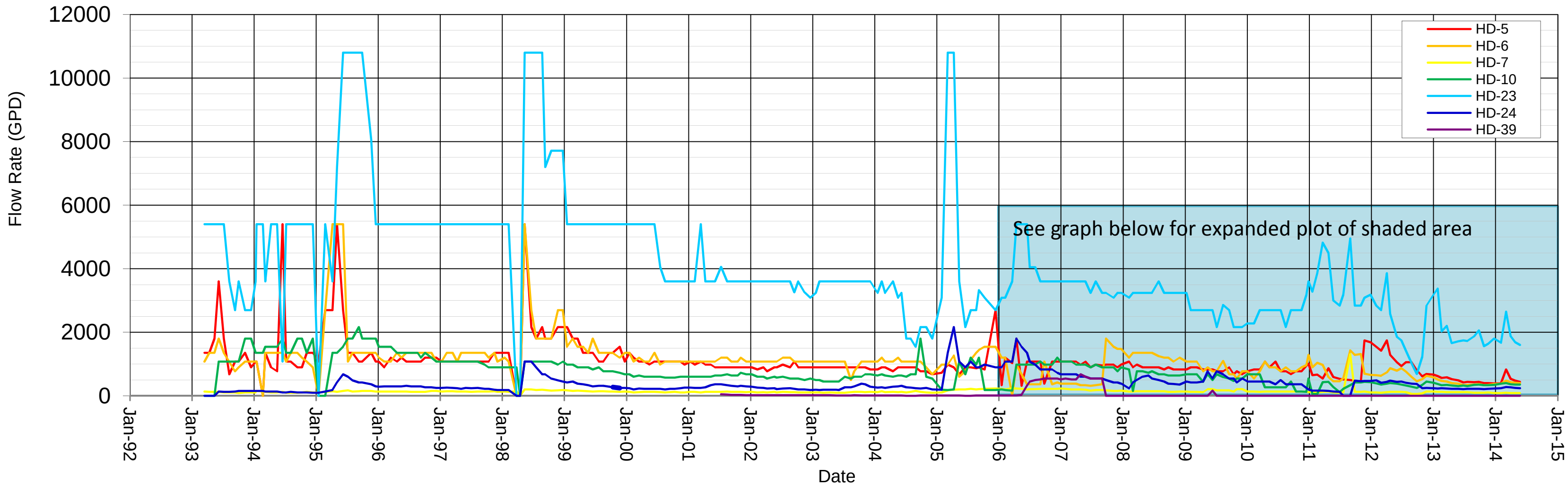
PLATE C-3a

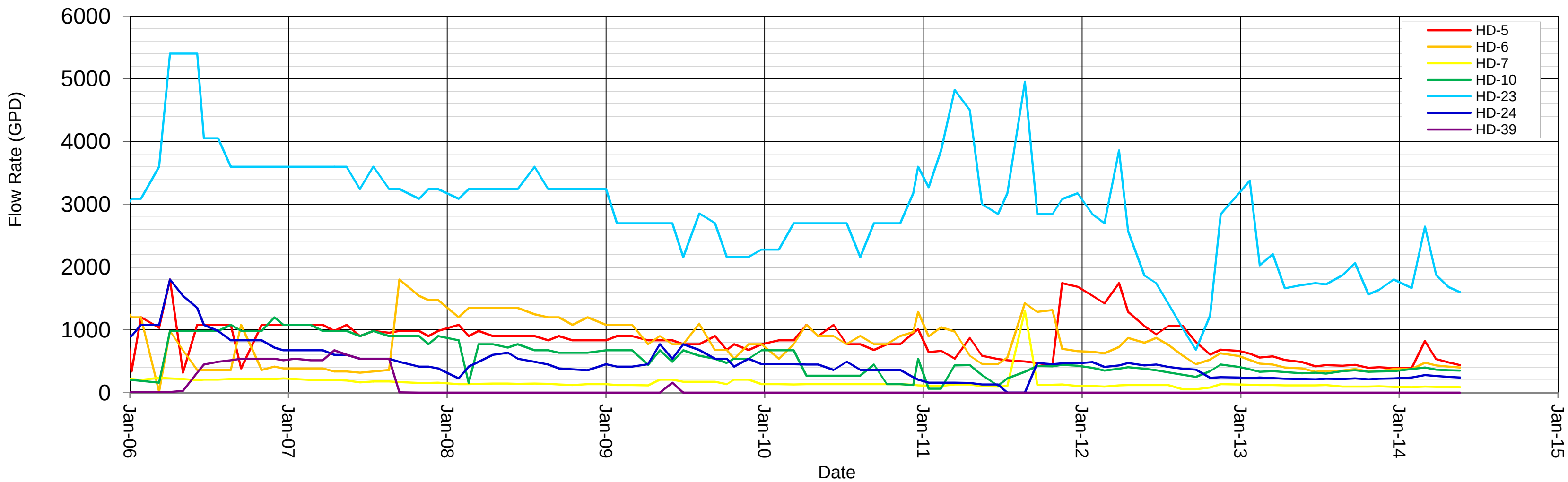




HYDRAUGER HYDROGRAPHS
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE C-3b





HYDRAUGER HYDROGRAPHS
Western Extension
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE C-4

APPENDIX D
SLOPE INCLINOMETER PLOT/DATA

SLOPE INCLINOMETER INTERPRETATION S MMAR

REGION	PCH							PACIFIC COAST HIGHWAY	
	SP-1	SP-11	SP-12	SP-14	SP-15	SP-19	SP-27A	SP-29	SP-30
Installation Details									
Surface Ele	NI	27	26	25	20	25	29	27	29
Original Depth (ft)	43	59	95	32	88	95	100	140	155
Measured Depth (ft)	NI	56	38	30	80	82	92	138	126
Casing Diameter	NI	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Casing Type	NI	SI/cc	Alum/cc	SI/cc	Alum/cc	Alum/cc	Alum/cc	SI	SI
Perforated inter al	NI	-31 to -26	-14 to -9	-5 to 0	-62 to -57	-57 to -52	-65 to -60	-111 to -106	-99 to -94
Bac fill	NI	Sand	NI	NI	NI	NI	NI	NI	NI
Installed By	KB	EVANS	EVANS	EVANS	EVANS	EVANS	EVANS	EVANS	EVANS
Reading Inter al	NR	Quart	Quart	Quart	Semi.	Semi.	Quart	Quart	Quart
Status	D	F	F	F	F	F	F	F	F
Date 1st Base Reading	10/31/83	9/13/88	9/13/88	9/13/88	3/10/88	9/3/89	12/10/87	10/19/88	NI
Displacement Depth		0 to 25	23, 43		58	60	25-30	48-54	39
A axis direction	NI	34	44	35	20	30	350	64	10
Region	PCH	PCH	PCH	PCH	PCH	PCH	PCH	PCH	PCH
Basal Surf Penetrated		YES	NO	NO	NO	NO	YES	YES	YES
Interpretation Mo ement (inches)									
1 - 1	NA	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1 - 1	NA	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
11- 1	NA	<0.1	--	--	--	--	<0.1	--	--
1 - 11	NA	<0.1	--	--	--	--	<0.1	--	--
- 1	NA	--	--	--	--	--	--	--	--
-	NA	--	--	--	--	--	--	--	--
-	NA	--	--	--	--	--	0.05	--	--
-	NA	--	--	--	--	--	--	--	--
-	NA	--	--	--	--	--	--	--	--
-	NA	0.09	0.03	--	0.03	0.01	0.04	0.04	--
-	NA	--	--	--	--	--	--	--	--
-	NA	--	--	--	--	--	--	--	--
1-	NA	--	--	--	--	--	--	--	--
- 1	NA	--	--	--	--	--	--	--	--
1 -	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 -1	NA	~0.1	--	--	--	--	--	--	--
1 -1	NA	0.3	--	--	--	--	0.08	0.04	--
1 -1	NA	<0.1	--	--	--	--	--	--	--
1 -1	NA	0.08	<0.1	--	--	--	--	--	--
1 -1	NA	0.1	0.08	--	--	--	0.15	--	--
1 -1	NA								
1/1 - /1	NA	0.08	--	--	--	--	--	--	--
/1 -1 /1	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 -1 1	NA	0.2	0.05	--	0.08	--	0.15	0.1	0.14
1 -1	2.28	3.4					1.4		

REGION	PACIFIC COAST HIGHWAY									BLUFF			EAST
	SP-2	SP-5	SP-5A	SP-6	SP-7	SP-8	SP-8A	SP-31	SP-37	SP-10	SP-28	SP-32	PC-1
Installation Details													
Surface Ele	NI	NI	NI	NI	NI	NI	NI	NI	NI	295	270	233	250
Original Depth (ft)	32	98	146	102	Unknown	Unknown	106	140	336	330	365	360	160
Measured Depth (ft)	NI	NI	146	NI	NI	NI	106	NI	NI	332	250	350	158
Casing Diameter	NI	NI	2.75	NI	NI	NI	2.75	NI	NI	2.75	2.75	2.75	2.75
Casing Type	NI	NI	NI	NI	NI	NI	NI	NI	NI	Alum/cc	Alum	Alum/cc/mod	SI/1.5"
Perforated inter al	NI	NI	bottom	NI	NI	NI	bottom	NI	NI	-37 to -32	-88 to -83	-121 to -116	92 to 97
Bac fill	NI	NI	Grout	NI	NI	NI	Grout	NI	NI	NI	NI	NI	Grout
Installed By	KB	CT	BYA	CT	CT	CT	BYA	EVANS	CT	EVANS	EVANS	EVANS	BYA
Reading Inter al	NR	NR	NR	NR	NR	NR	NR	NR	NR	Quart	Quart	Quart	Quart
Status	D	D	D	D	D	D	D	D	D	F	F	F	F
Date 1st Base Reading	NI	NI	NI	NI	NI	NI	NI	NI	NI	11/5/87	9/8/88	9/7/88	6/8/95
Displacement Depth	NI	NI	NI	NI	NI	NI	NI	NI	NI	>330	245	110,250	143, 50
A axis direction	NI	NI	NI	NI	NI	NI	NI	NI	NI	39	204	18	190
Region	PCH	PCH	PCH	PCH	PCH	PCH	PCH	PCH	PCH	BLUFF	BLUFF	BLUFF	EAST
Basal Surf Penetrated										NO	NO	YES	YES
Interpretation Mo ement (inches)													
1 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	<0.1	<0.1	<0.1
1 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	<0.1	<0.1
11- 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5	<0.1	0.2	0.05
1 - 11	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	<0.1	<0.1	--
- 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	0.1	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	NA	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	0.05	0.02	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
1-	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--
- 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	~0.02-0.04*	--	--
1 -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	<0.5
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	0.08
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	<0.1
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	0.07
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	0.04, 0.05
1 -1	NA	NA	NA	NA	NA	NA	NA	NA	NA				
1/1 - /1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	
/1 -1 /1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1 -1 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	
1 -1													

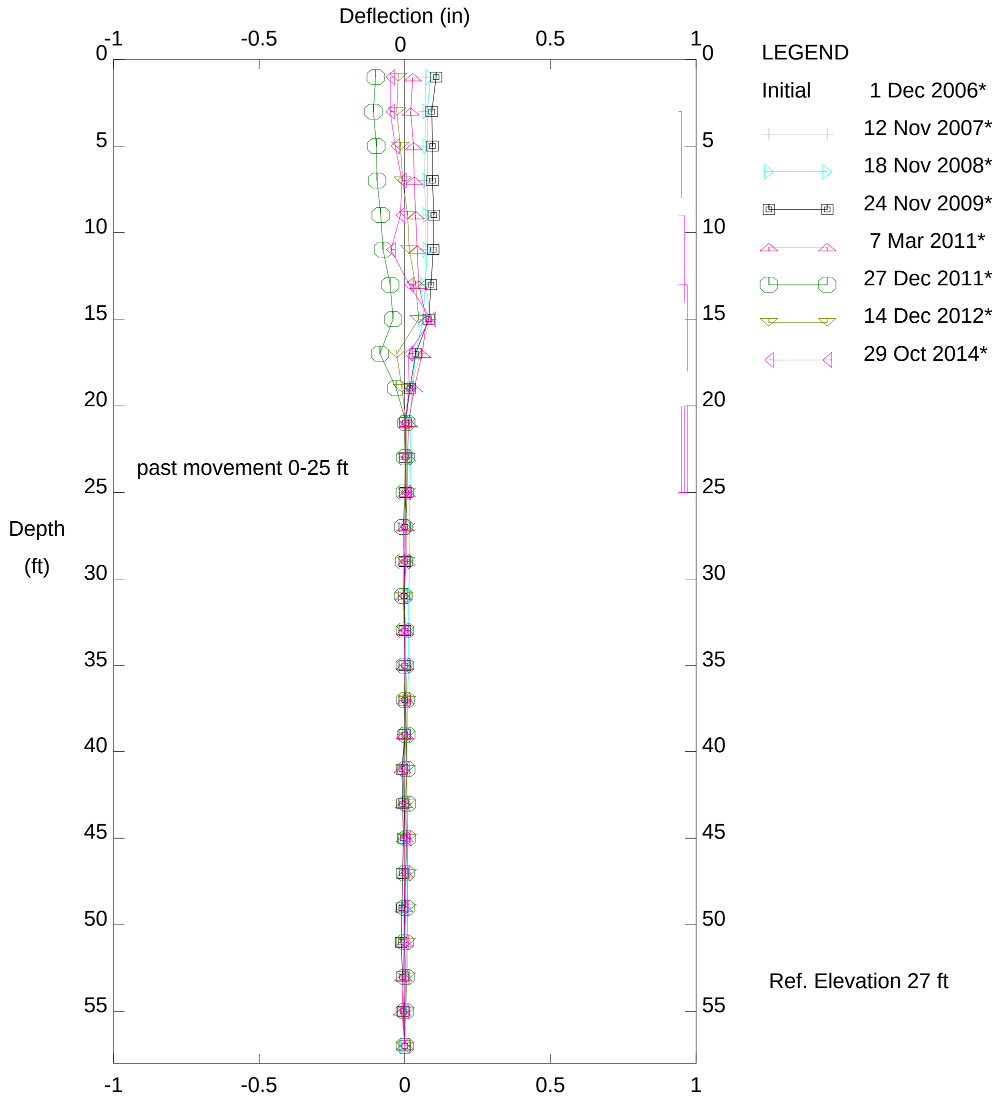
REGION	EAST					CENTRAL				
	SP-3	SP-3A	SP-33	BYA-5A	SP-18	SP-9A	SP-16A	SP-17	SP-17A	SP-17B
Installation Details										
Surface Ele	212	203	318	NI	NI	365	285	540	540	540
Original Depth (ft)	240	295	375	300	78	378	390	192	325	250
Measured Depth (ft)	132	244	374	186	NI	298	392	190	238	250
Casing Diameter	2.75	2.75	2.75	NI	NI	2.75	2.75	2.75	2.75	2.75
Casing Type	Alum/cc	Alum/cc	Alum/cc/mod	NI	NI	Alum	Alum/cc	SI/cc	SI	SI
Perforated inter al	80 to 85	-43 to -38	-56 to -51	NI	NI	65 to 70	-107 to -102	348 to 353	302 to 307	None
Bac fill	Sand	Sand	NI	NI	NI	NI	NI	NI	Grout	Grout
Installed By	EVANS	EVANS	EVANS	BYA	LS	EVANS	EVANS	EVANS	BYA	Fugro
Reading Inter al	Semi.	Quart	Quart	NR	NR	Semi.	Semi.	NR	NR	Quart
Status	F	F	F	D	D	F	F	F	F	F
Date 1st Base Reading	9/7/88	NI	6/3/87	NI	NI	3/10/88	3/10/88	NI	2/10/89	11/13/12
Displacement Depth	132, 170, 220	247, 200	210, 50	NI	NI	305	380	140,184	196	NI
A axis direction	32	60	20	NI	NI	340	330	10	60	NI
Region	EAST	EAST	EAST	EAST	EAST	CENT.	CENT.	CENT.	CENT.	CENT
Basal Surf Penetrated	NO	NO	YES			NO	NO	NO	YES	YES
Interpretation Mo ement (inches)										
1 - 1	<0.2	<0.1	0.2	NA	NA	<0.1	<0.1	NA	NA	<0.1
1 - 1	<0.1	<0.1	0.2	NA	NA	<0.1	<0.1	NA	NA	<0.1
11- 1	--	0.2	0.2	NA	NA	--	--	0.25	0.1	
1 - 11	--	0.2	<0.1	NA	NA	--	--	0.5	--	
- 1	--	--	<0.1	NA	NA	--	--	--	--	
-	0.10	--	0.1	NA	NA	--	--	--	--	
-	--	--	0.1	NA	NA	--	--	--	--	
-	--	--	0.1	NA	NA	--	--	--	--	
-	--	--	--	NA	NA	--	--	--	0.1	
-	--	0.10	0.06	NA	NA	?	0.06	0.09	0.09	
-	--	--	--	NA	NA	--	--	--	--	
-	--	--	--	NA	NA	--	--	--	--	
1-	--	--	--	NA	NA	--	--	--	--	
- 1	--	--	~0.05*	NA	NA	--	--	--	0.02-0.04*	
1 -	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1 -1	--	--	--	NA	NA	--	--	--	--	
1 -1	--	0.02	0.08	NA	NA	--	--	--	0.03	
1 -1	--	0.5	--	NA	NA	--	--	--	--	
1 -1	--	--	--	NA	NA	--	--	--	0.04	
1 -1	--	--	0.1, 0.2	NA	NA	--	--	--	--	
1 -1				NA	NA					
1/1 - /1	--	0.2	--	NA	NA	--	--	--	--	
/1 -1 /1	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1 -1 1	--	0.3	0.05	NA	NA	--	--	--	--	
1 -1	8.4							4.8		

REGION	CENTRAL						WESTERN				HEAD	
	SP-24	SP-34	SP-35	SP-36	SP-4	SP-16	SP-20	SP-21	SP-22	SP-23	SP-26	SP-38
Installation Details												
Surface Ele	370	270	345	380	NI	285	430	660	780	860	745	NI
Original Depth (ft)	390	360	360	200	245	380	330	380	335	390	350	Unknown
Measured Depth (ft)	384	380	394	254	96	240	322	280	330	396	342	NI
Casing Diameter	2.75	2.75	2.75	2.75	NI	NI	3.5	2.75	2.75	3.5	3.5	NI
Casing Type	Alum	SI	SI	SI	NI	NI	Alum/3.5"/cc	Alum/cc	Alum	Alum/3.5"	Alum/3.5"	NI
Perforated inter al	NI	-112 to -107	-51 to -46	126 to 131	NI	45 to 50	104 to 204	380 to 385	448 to 453	462 to 562	NI	NI
Bac fill	NI	Grout	Grout	Grout	NI	NI	Filter	NI	NI	NI	Sand	NI
Installed By	CONV	BYA	BYA	BYA	EVANS	EVANS	CONV	EVANS	CONV	CONV	CONV	EVANS
Reading Inter al	Semi.	Quart	Quart	Quart	NR	NR	Semi.	Semi.	Semi.	Semi.	Quart	NR
Status	F	F	F	F	D	D	F	F	F	F	F	D
Date 1st Base Reading	9/8/88	2/19/99	11/24/98	11/20/98	11/18/83	NI	11/5/87	7/2/87	7/2/87	9/8/88	9/13/88	NI
Displacement Depth				78	NI	251	142	NI	NI	NI	45,130	NI
A axis direction	326	210	184	164	NI	NI	1	300	345	5	45	NI
Region	CENT.	CENT.	CENT.	CENT.	CENT.	CENT.	WEST.	WEST.	WEST.	WEST.	HEAD	HEAD
Basal Surf Penetrated	YES	YES	YES	YES	NI	NI	NO	NO	NO	NO	YES	NI
Interpretation Mo ement (inches)												
1 - 1	<0.2	<0.1	<0.2	<0.1	NA	NA	<0.1	<0.1	<0.2	<0.2	<0.2	NA
1 - 1	<0.1	<0.1	<0.1	<0.1	NA	NA	<0.1	<0.1	<0.1	0.1	<0.1	NA
11- 1	--	--	--	0.3	NA	NA	0.2	0.2	0.4	0.1	0.1	NA
1 - 11	--	--	--	--	NA	NA	--	--	--	<0.1	--	NA
- 1	--	--	--	--	NA	NA	--	--	--	0.1	<0.05	NA
-	--	--	--	--	NA	NA	--	--	--	--	--	NA
-	--	--	--	--	NA	NA	--	--	--	--	--	NA
-	--	--	--	--	NA	NA	--	--	--	--	--	NA
-	--	--	--	--	NA	NA	--	--	--	--	0.22	NA
-	0.15	--	--	--	NA	NA	--	--	--	--	0.35	NA
-	--	--	--	--	NA	NA	--	--	--	--	--	NA
-	--	--	--	--	NA	NA	--	--	--	--	--	NA
1-	--	--	--	--	NA	NA	--	--	--	--	--	NA
- 1	--	--	--	--	NA	NA	--	--	--	--	0.2	NA
1 -	NA	NA	NA	NA	NA	NA	--	--	--	--	NA	NA
1 -1	--	--	--	--	NA	NA	--	--	--	--	1.9	NA
1 -1	--				NA	NA	--	--	--	--	1	NA
1 -1	--				NA	NA	--	--	--	--	0.7	NA
1 -1	--				NA	NA	--	--	--	--	3.5	NA
1 -1	--				NA	NA	--	--	--	--	5	NA
1 -1					NA	NA						NA
1/1 - /1	--				NA	NA	--	--	--	--	1.1	NA
/1 -1 /1	NA				NA	NA	NA	NA	NA	NA	NA	NA
1 -1 1	0.1				NA	NA	--	--	--	--	0.3	NA
1 -1					4.7							

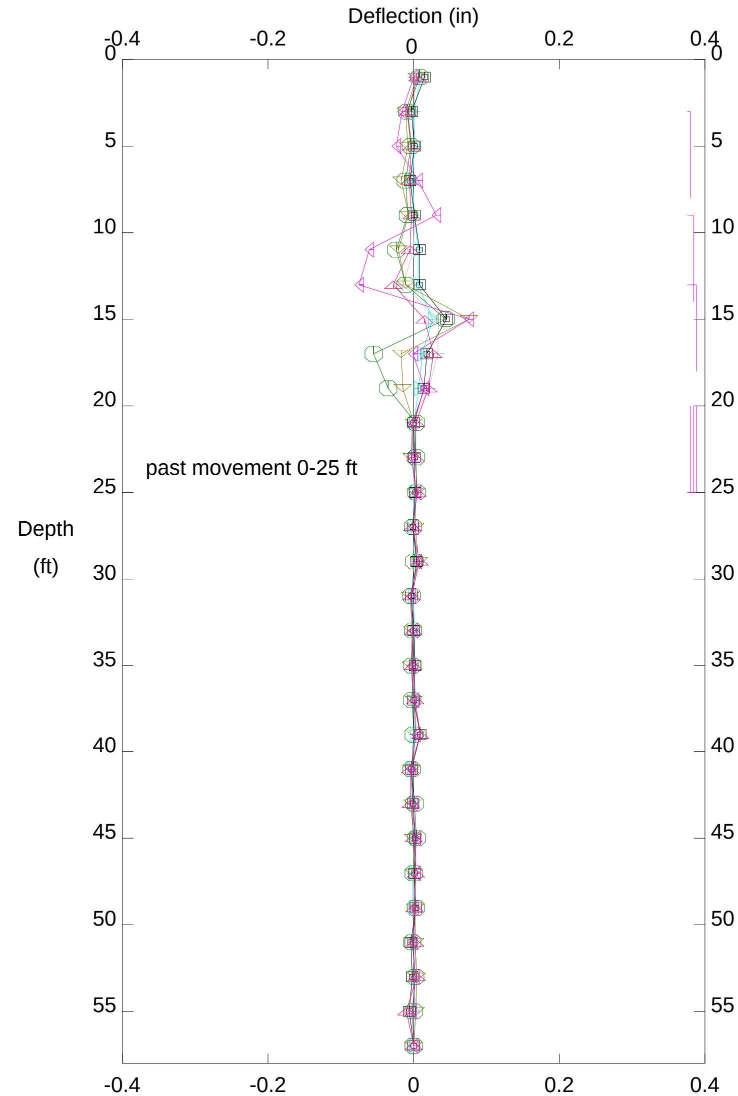
NI	No Information	--	No quanitifiable measurement	Installation Designations: KB	Kovacs-Byer, Inc.
Semi	Semi-Annually	NA	Data not available	EVANS	D.A. Evans
Quart	Quarterly	NR	No Reading	CT	Caltrans
F	Functioning			CONV	Converse Consultants
D	Destroyed				

GS	GeoSoils	--	Shaded Blue to indicate inclinometer does NOT penetrate the basal rupture
BYA	Bing Yen & Associates	--	Shaded yellow to indicated inclinometer does penetrate basal rupture
LS	Lockwood-Singh	--	Shaded gray to indicated inclinometer is no longer monitored

SLOPE INCLINOMETER INFORMATION
Big Rock Mesa Landslide Assessment District
Malibu, California



Cumulative Deflection
Direction A



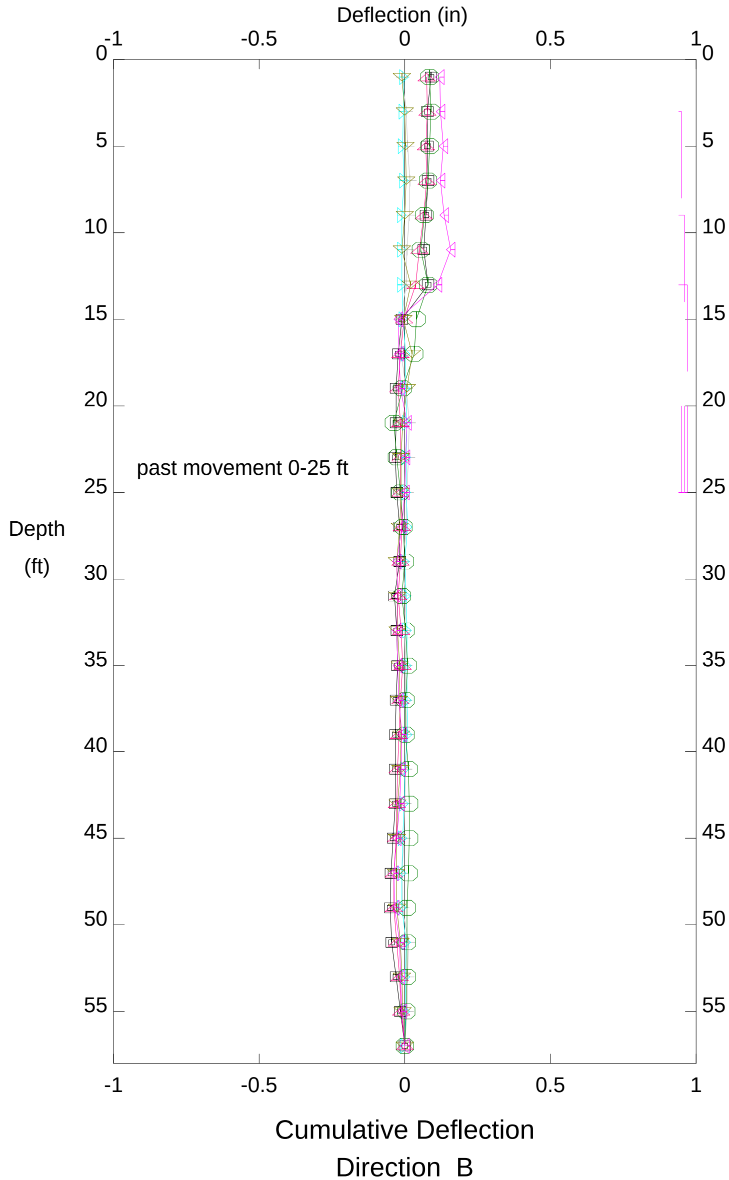
Incremental Deflection
Direction A

BIG ROCK MESA, Inclinometer SP-11

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

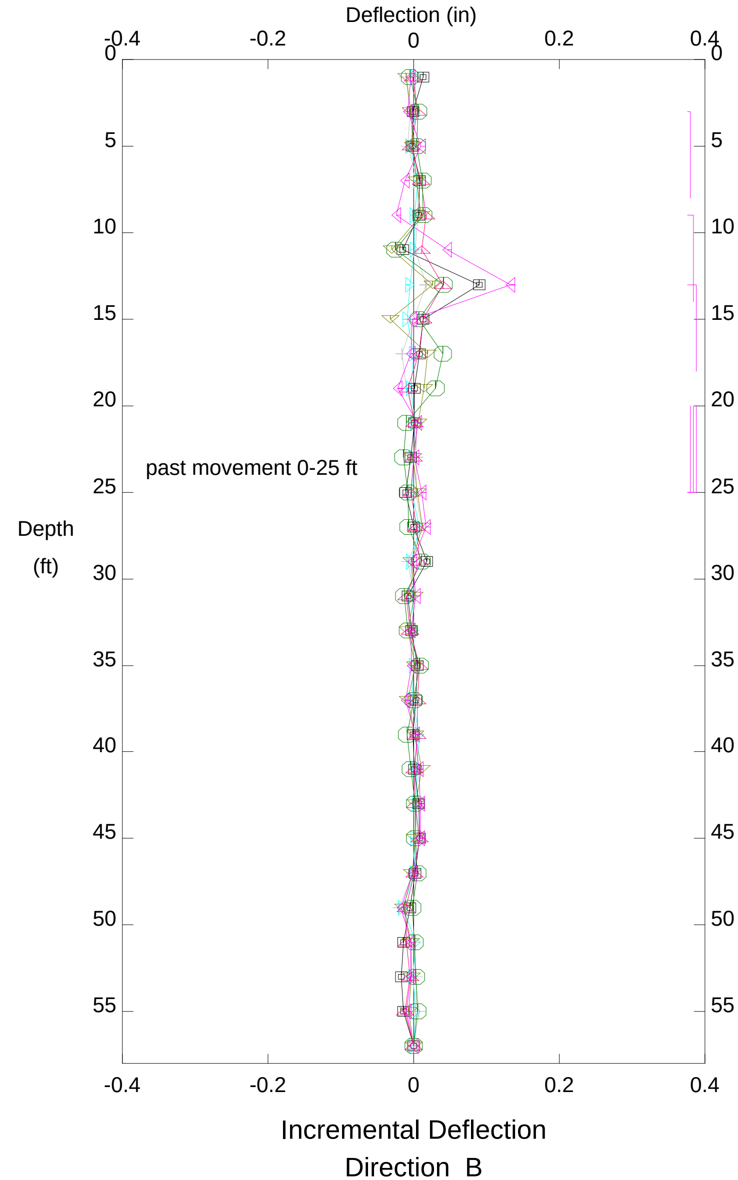
PLATE D-2a



LEGEND

Initial	1 Dec 2006*
	12 Nov 2007*
	18 Nov 2008*
	24 Nov 2009*
	7 Mar 2011*
	27 Dec 2011*
	14 Dec 2012*
	29 Oct 2014*

Ref. Elevation 27 ft

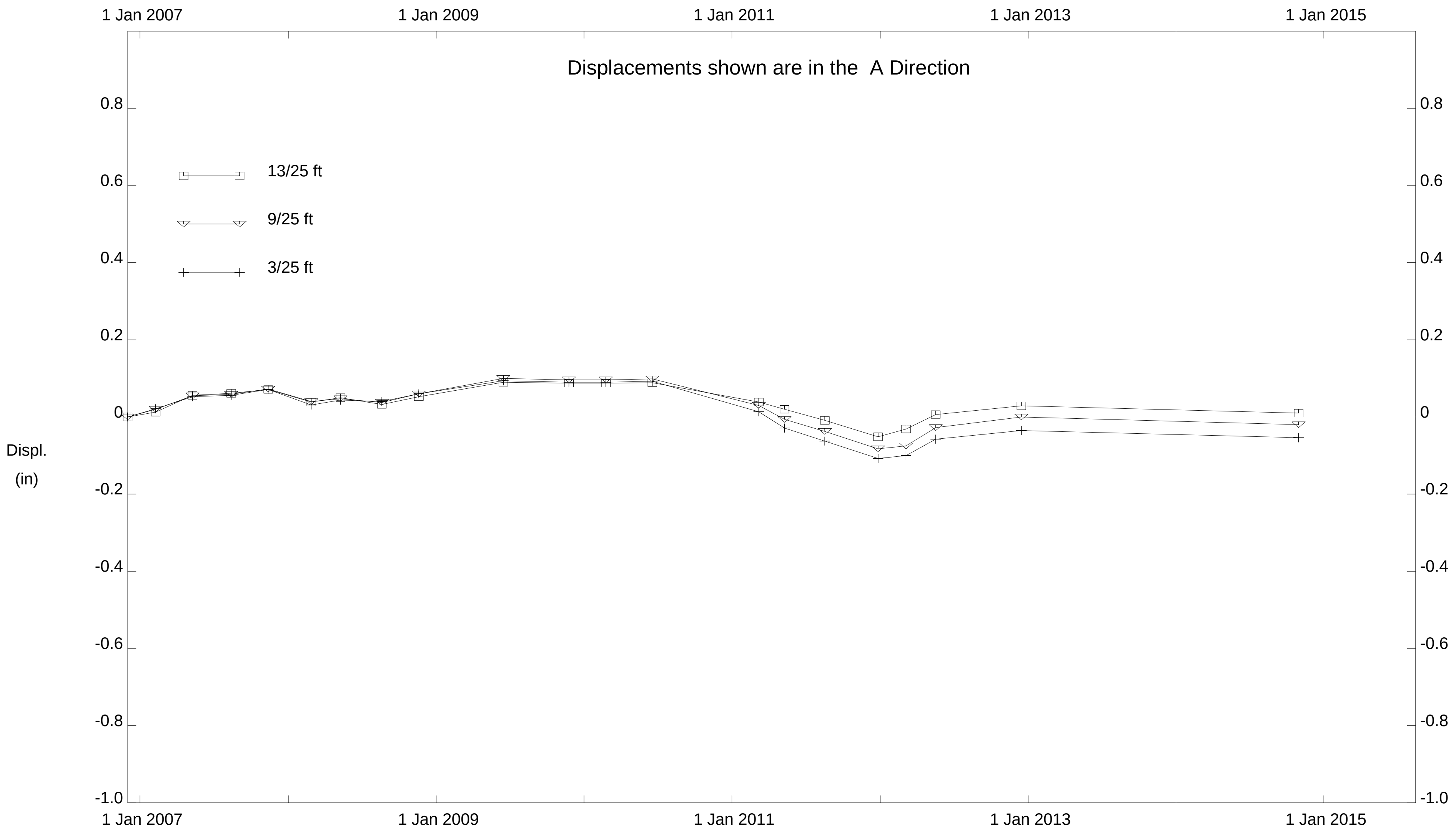


BIG ROCK MESA, Inclinometer SP-11

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-2b

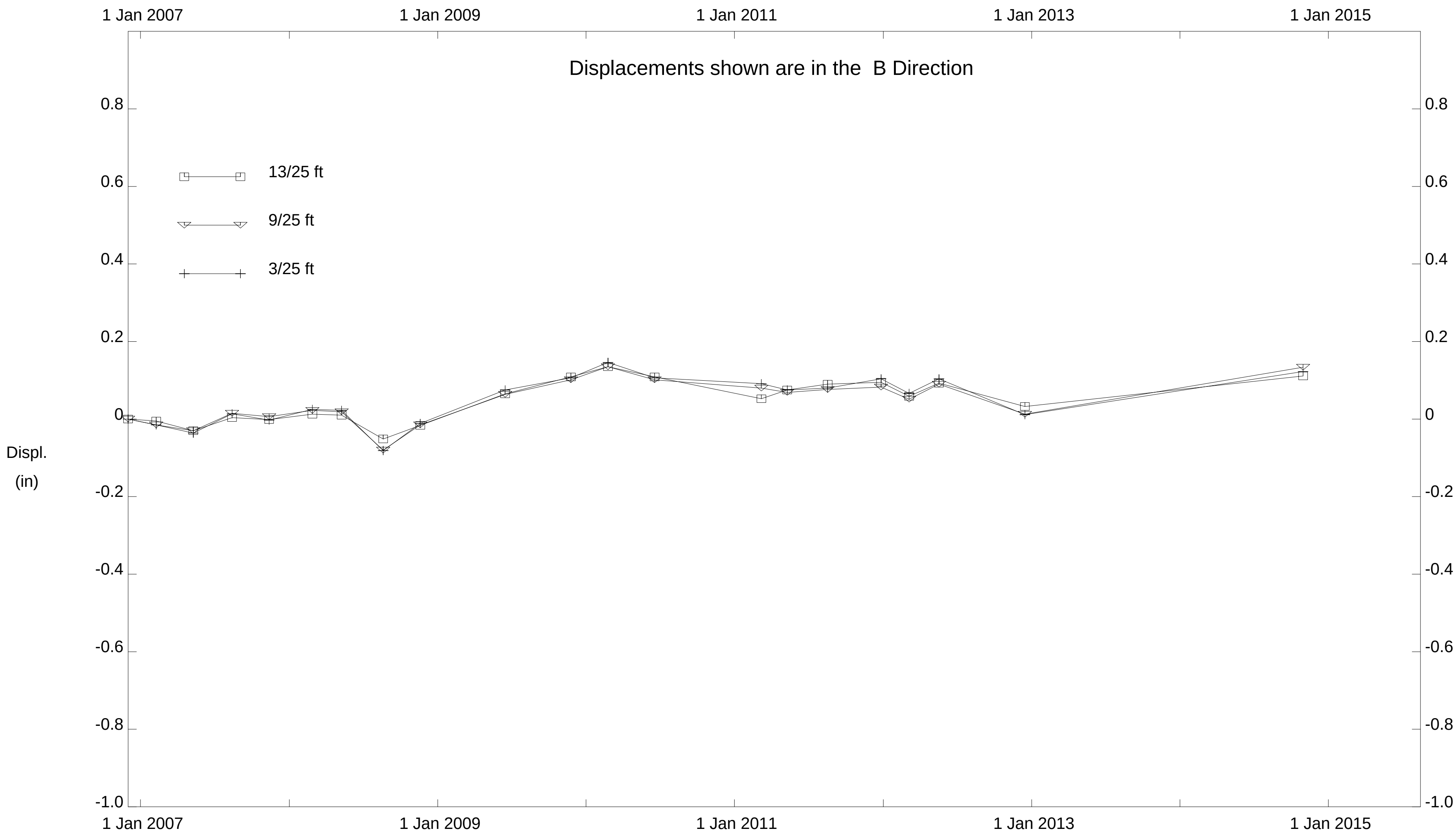


BIG ROCK MESA, Inclinometer SP-11

PCH REGION

PLATE D-2c

Fugro Consultants, Inc. - Ventura, CA

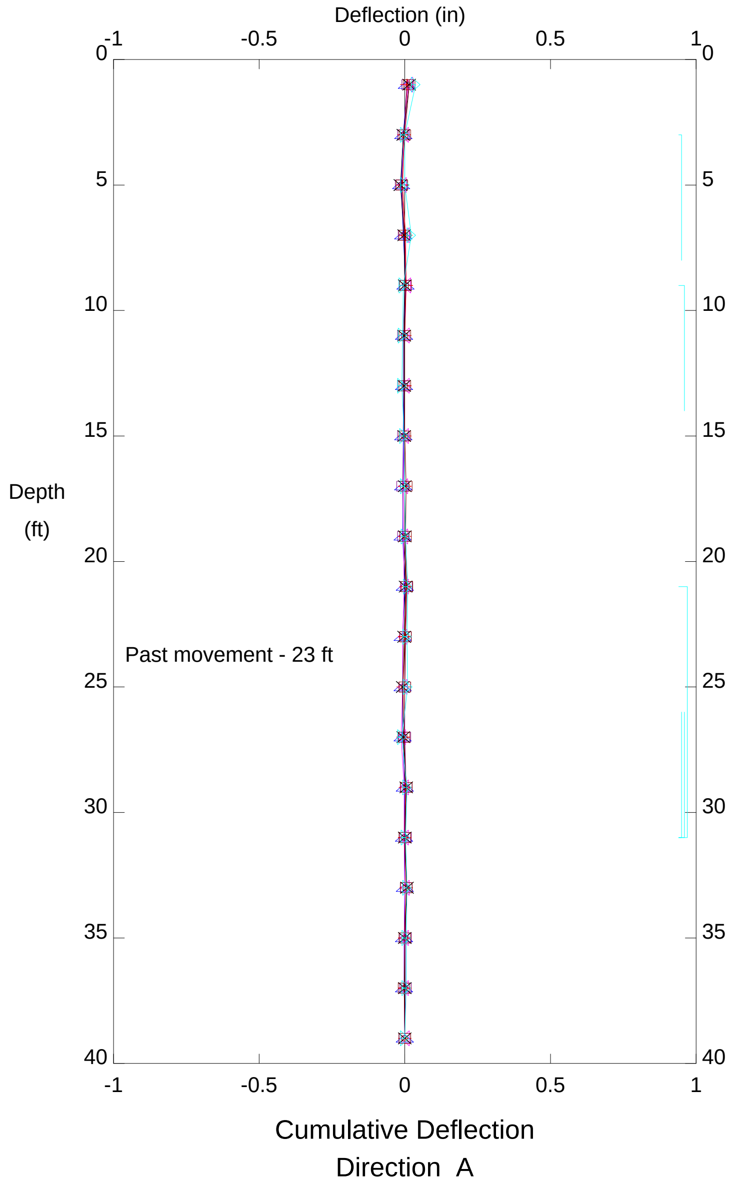


BIG ROCK MESA, Inclinometer SP-11

PCH REGION

PLATE D-2d

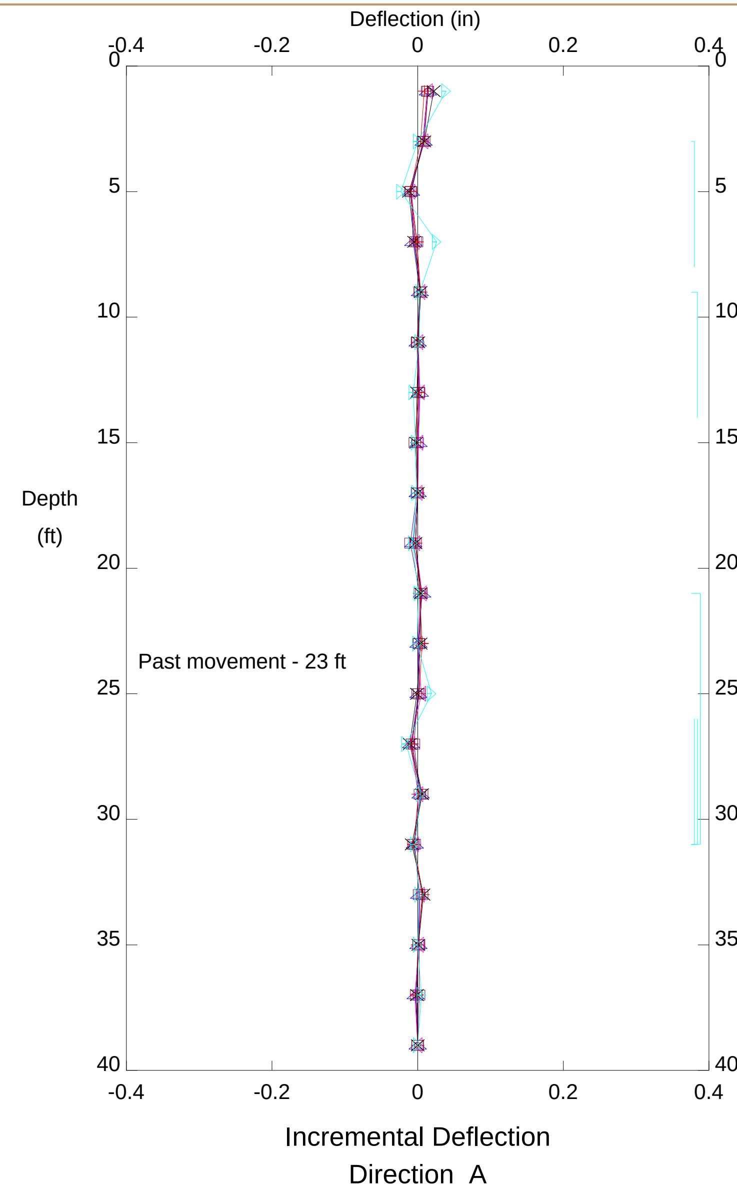
Fugro Consultants, Inc. - Ventura, CA



LEGEND

Initial	30 Nov 2006*
	13 Nov 2007*
	18 Nov 2008*
	4 Nov 2009*
	7 Mar 2011*
	27 Dec 2011*
	14 Dec 2012*
	29 Oct 2014*

Ref. Elevation 26 ft



BIG ROCK MESA, Inclinometer SP-12

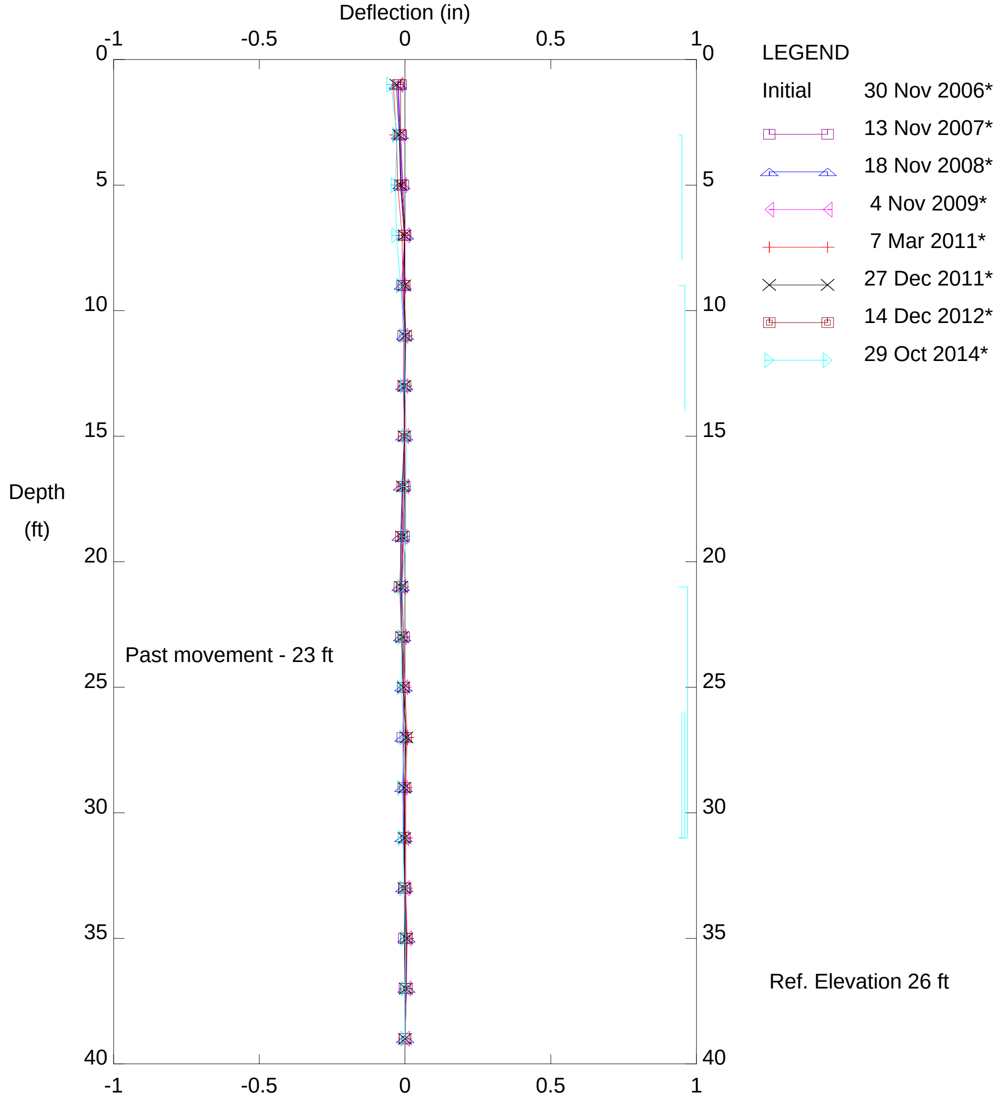
PCH REGION

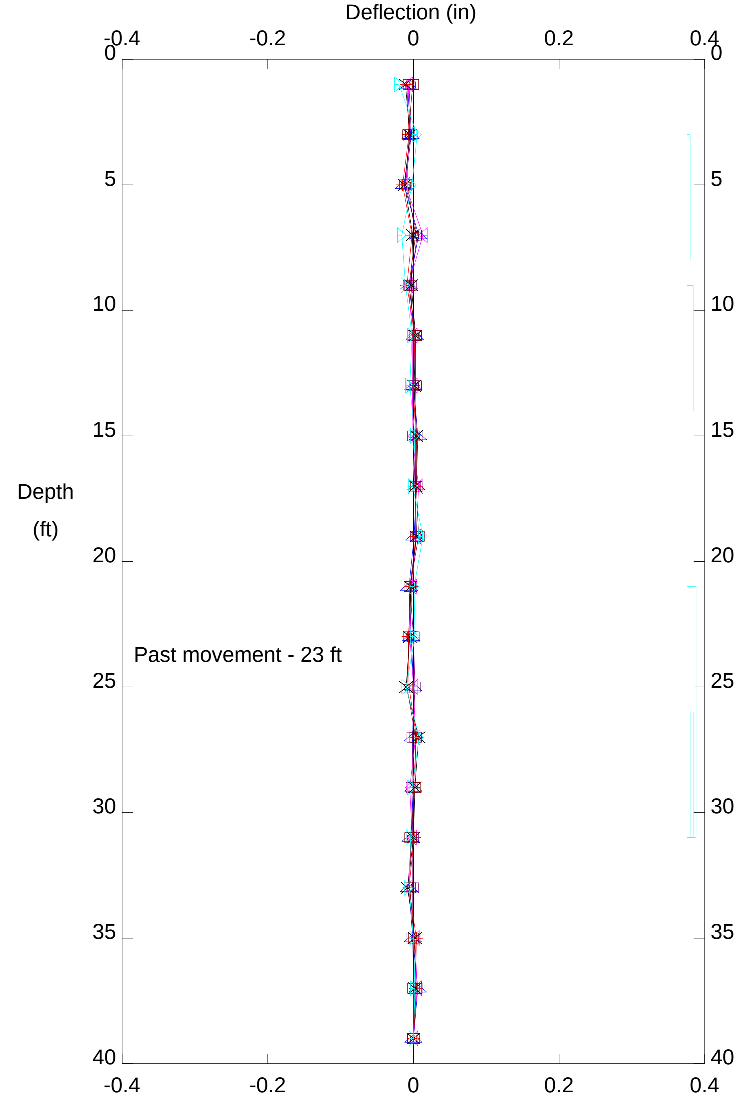
Sets marked * include zero shift and/or rotation corrections.

PLATE D-3a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP12.gtl

Fugro Consultants, Inc. - Ventura, CA





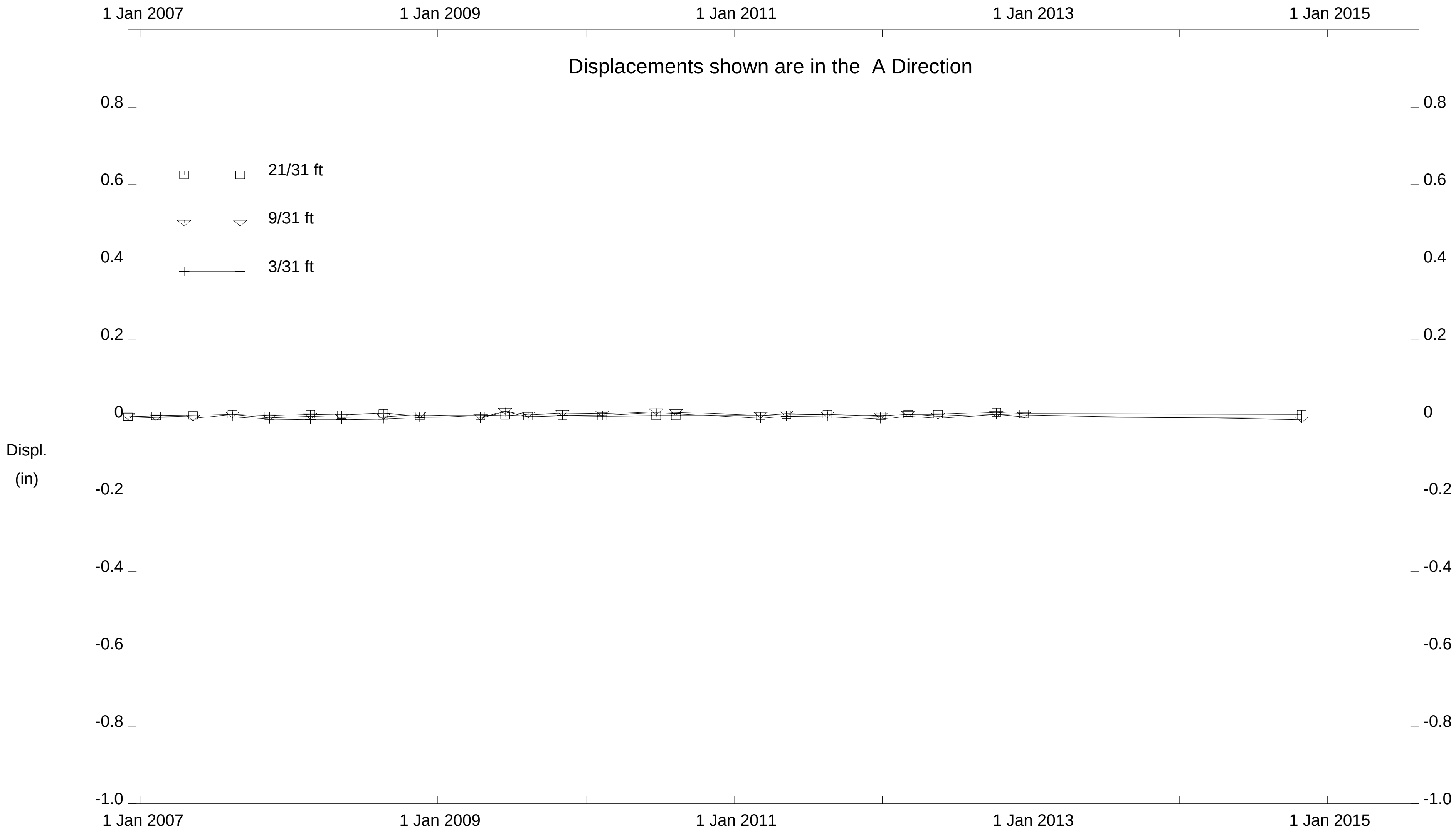
BIG ROCK MESA, Inclinometer SP-12

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-3b

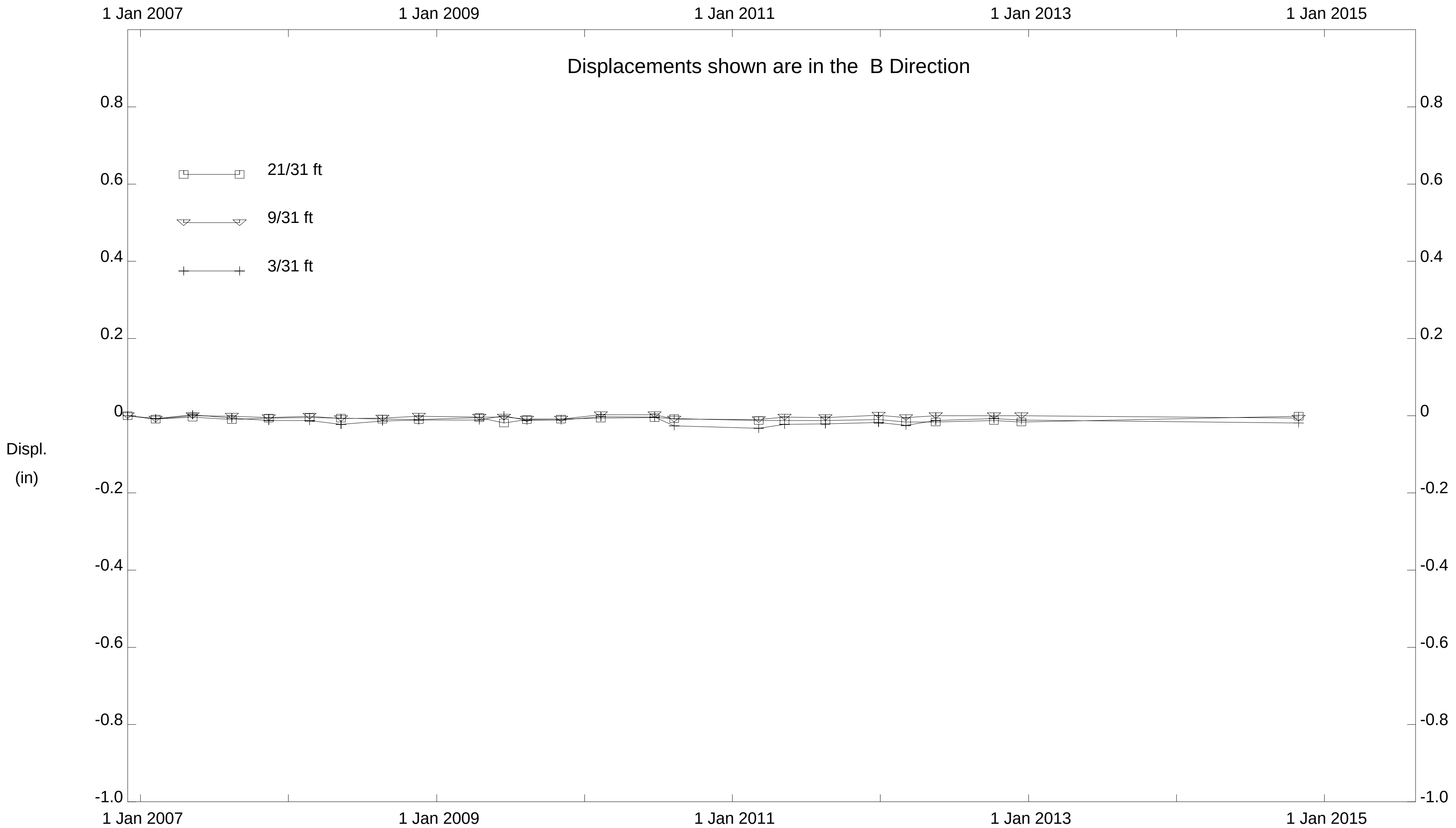
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP12.gtl



BIG ROCK MESA, Inclinometer SP-12

PCH REGION

PLATE D-3c

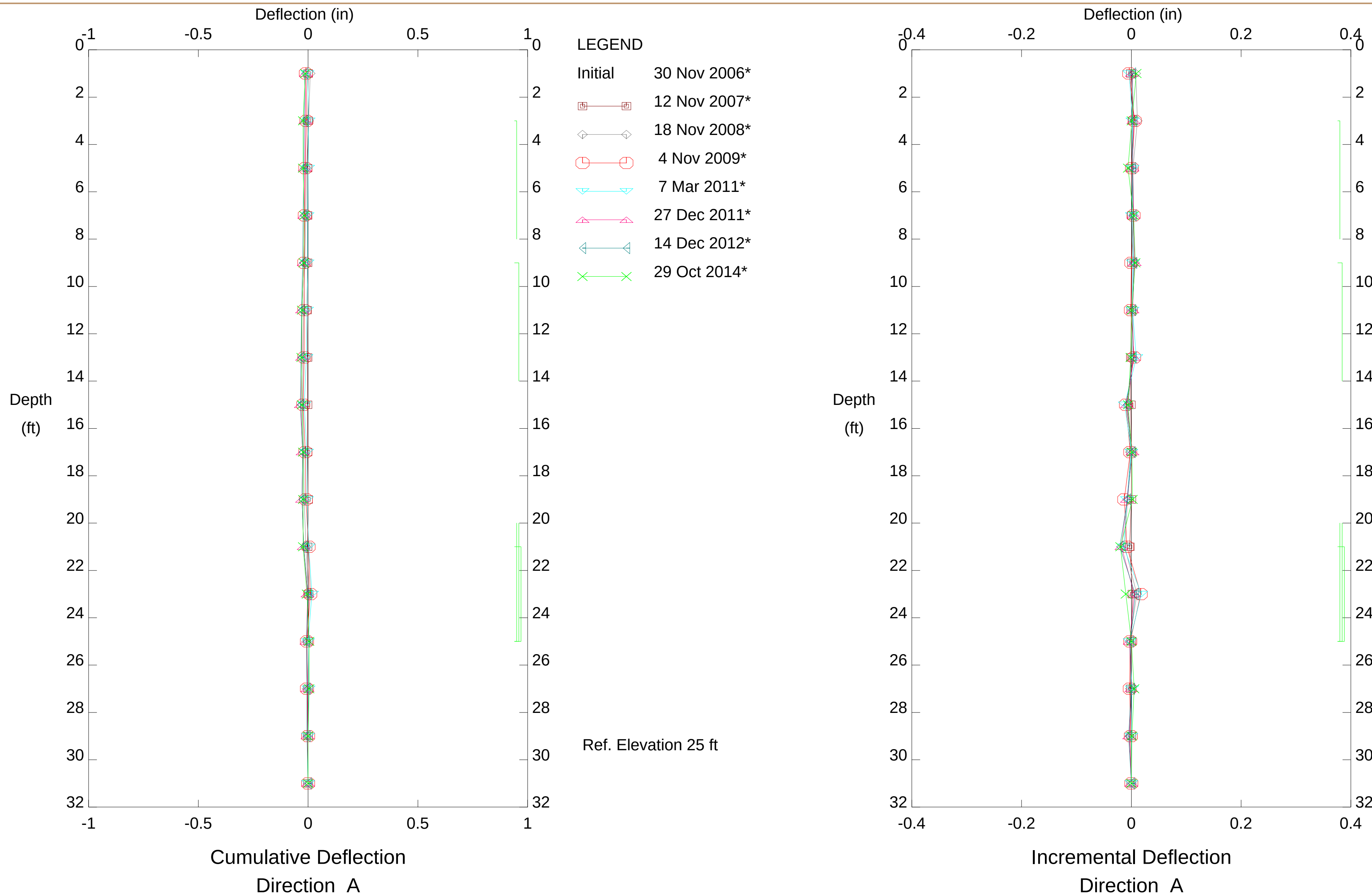


BIG ROCK MESA, Inclinometer SP-12

PCH REGION

PLATE D-3d

Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-14

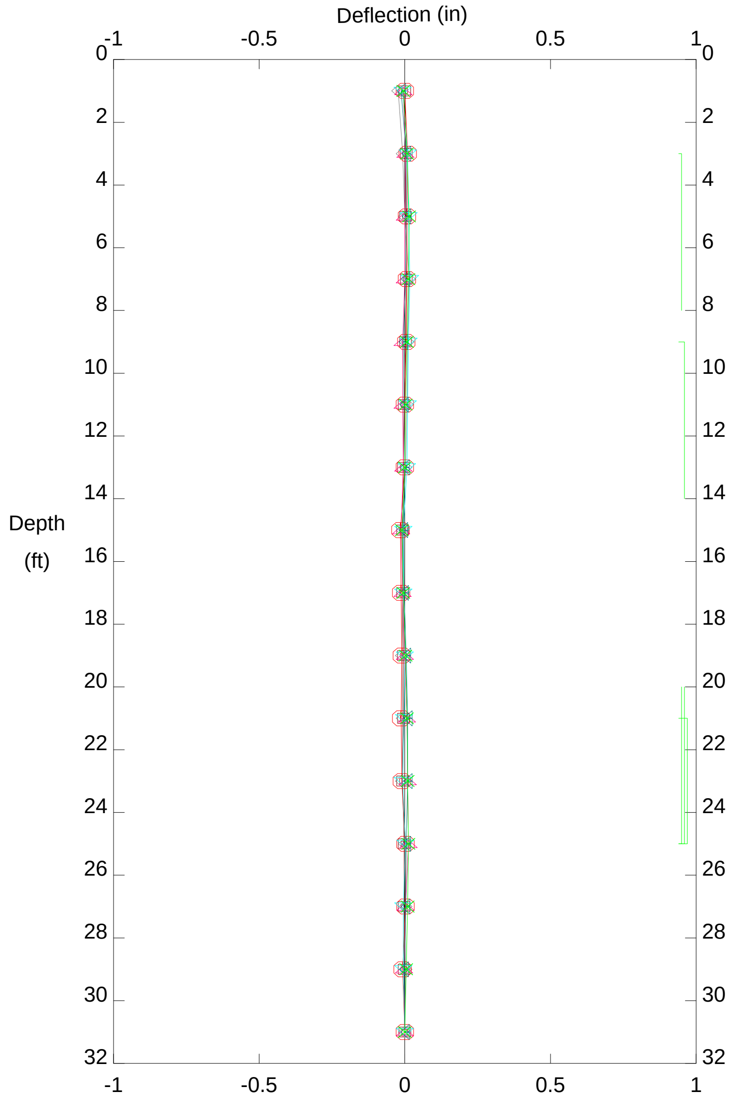
PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-4a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP14.gtl

Fugro Consultants, Inc. - Ventura, CA



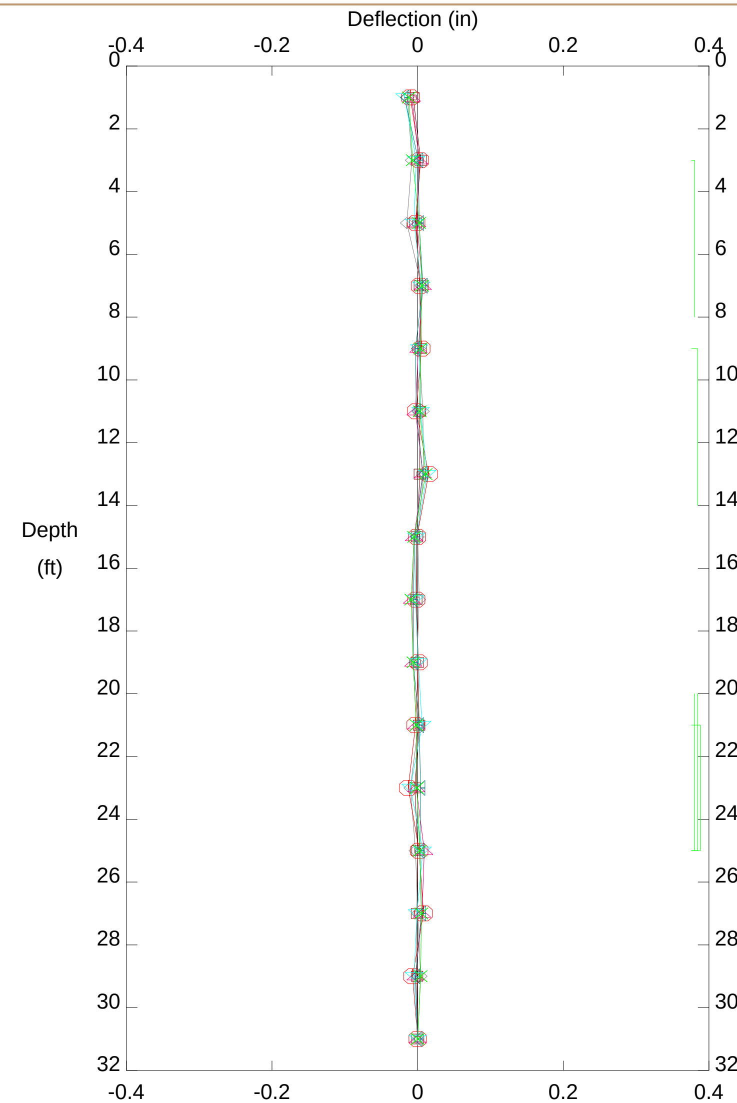
Cumulative Deflection

Direction B

LEGEND

Initial	30 Nov 2006*
	12 Nov 2007*
	18 Nov 2008*
	4 Nov 2009*
	7 Mar 2011*
	27 Dec 2011*
	14 Dec 2012*
	29 Oct 2014*

Ref. Elevation 25 ft



Incremental Deflection

Direction B

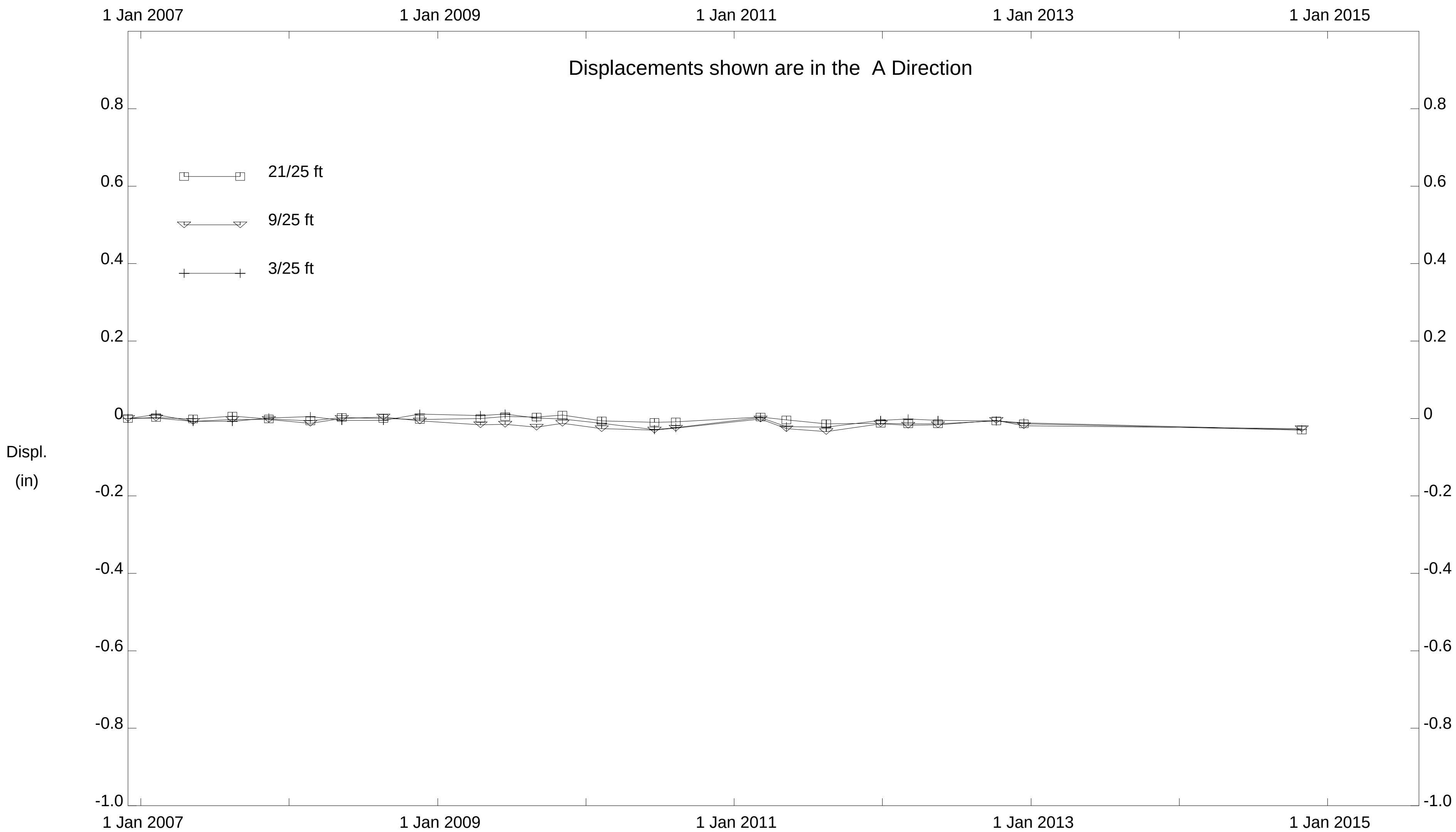
BIG ROCK MESA, Inclinometer SP-14

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-4b

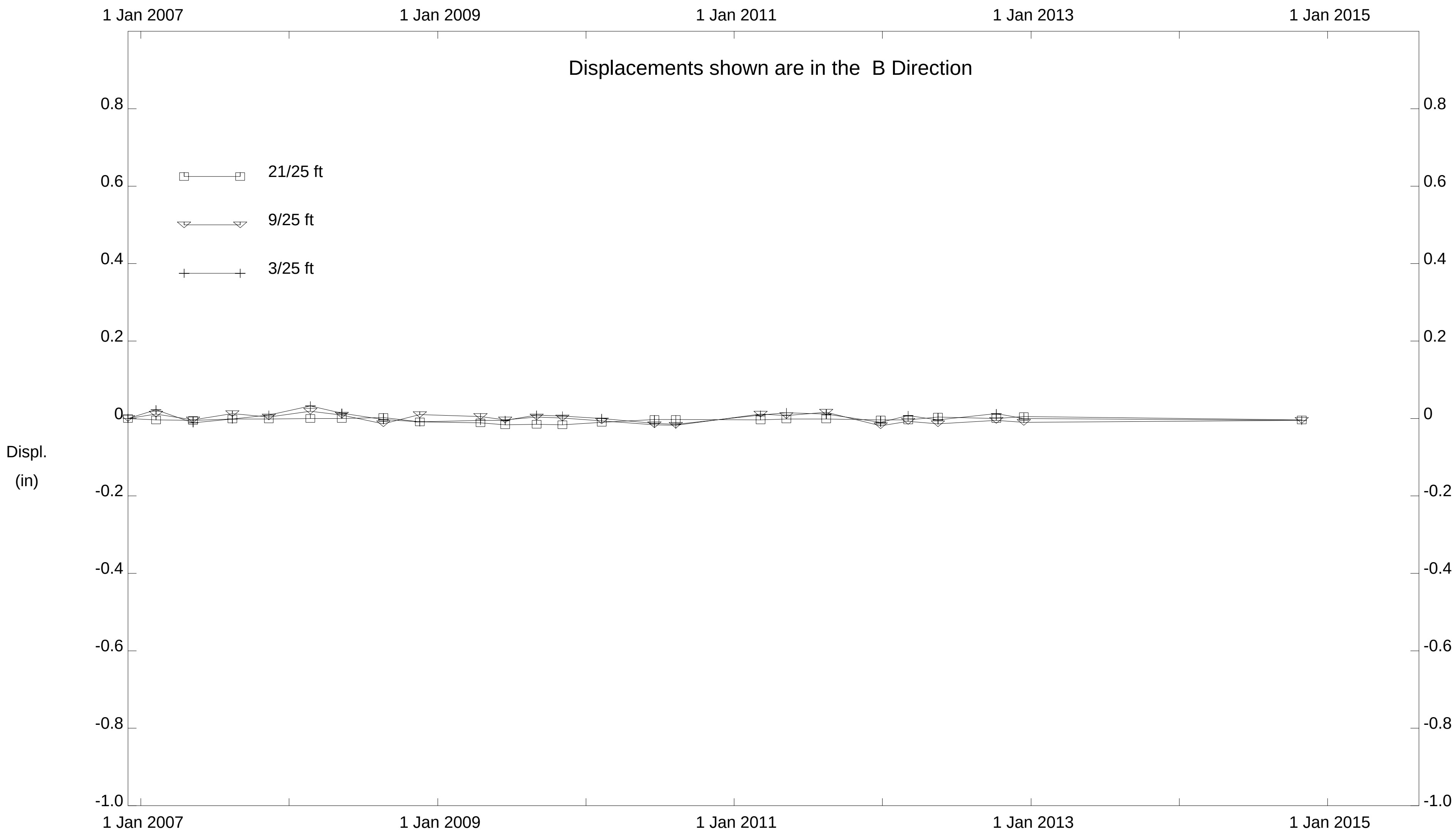
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP14.gtl



BIG ROCK MESA, Inclinometer SP-14

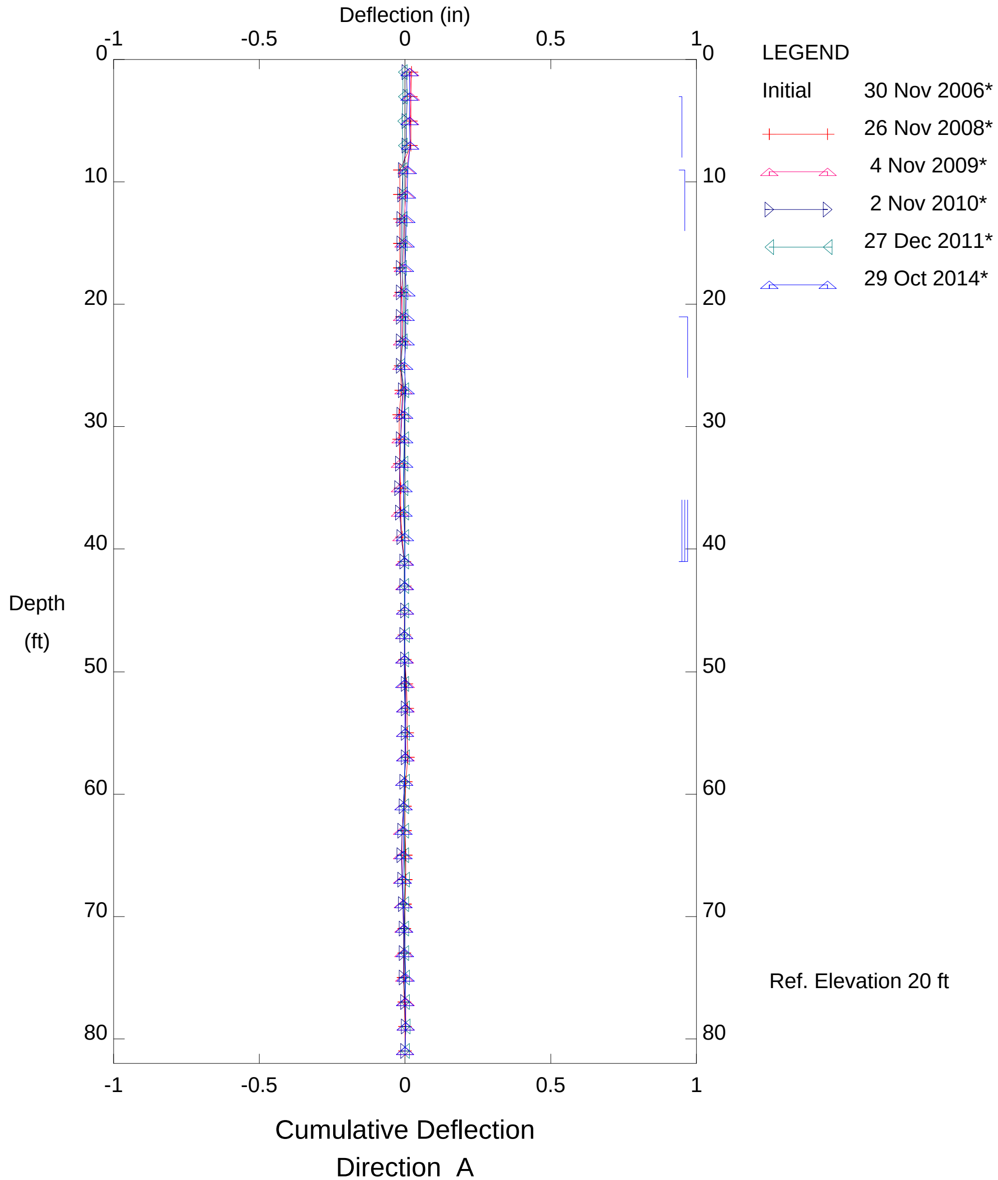
PCH REGION

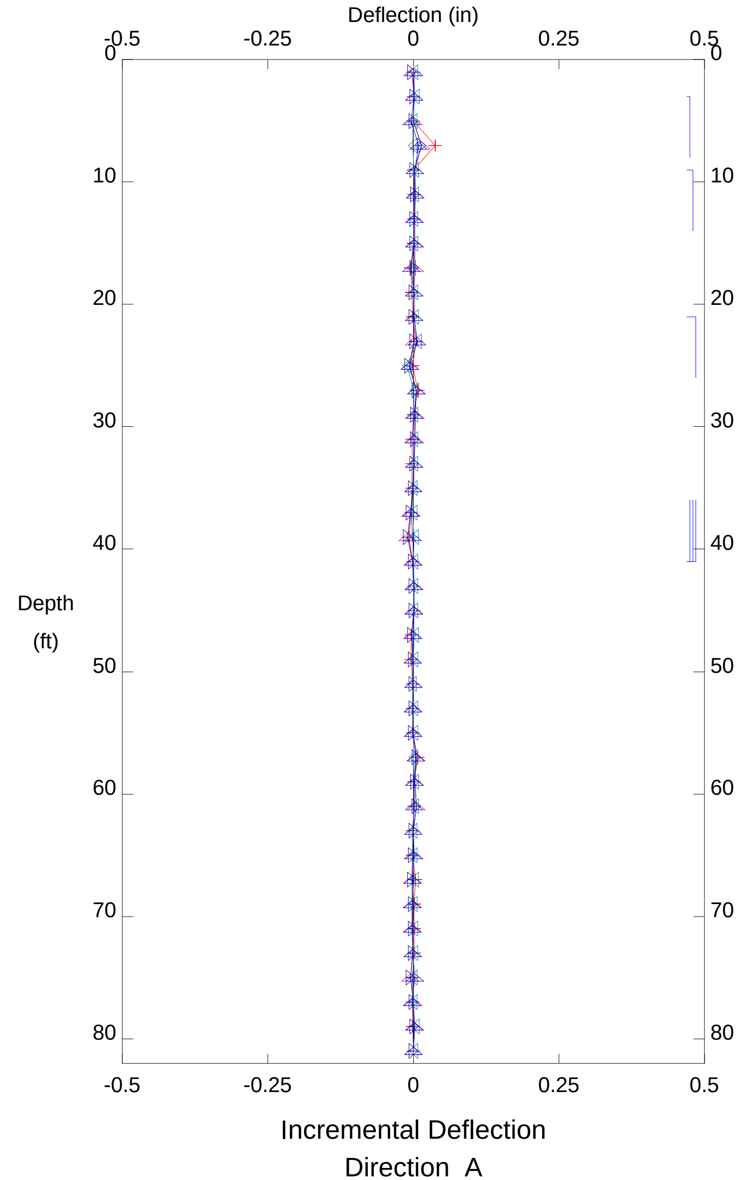
PLATE D-4c



BIG ROCK MESA, Inclinometer SP-14

PCH REGION



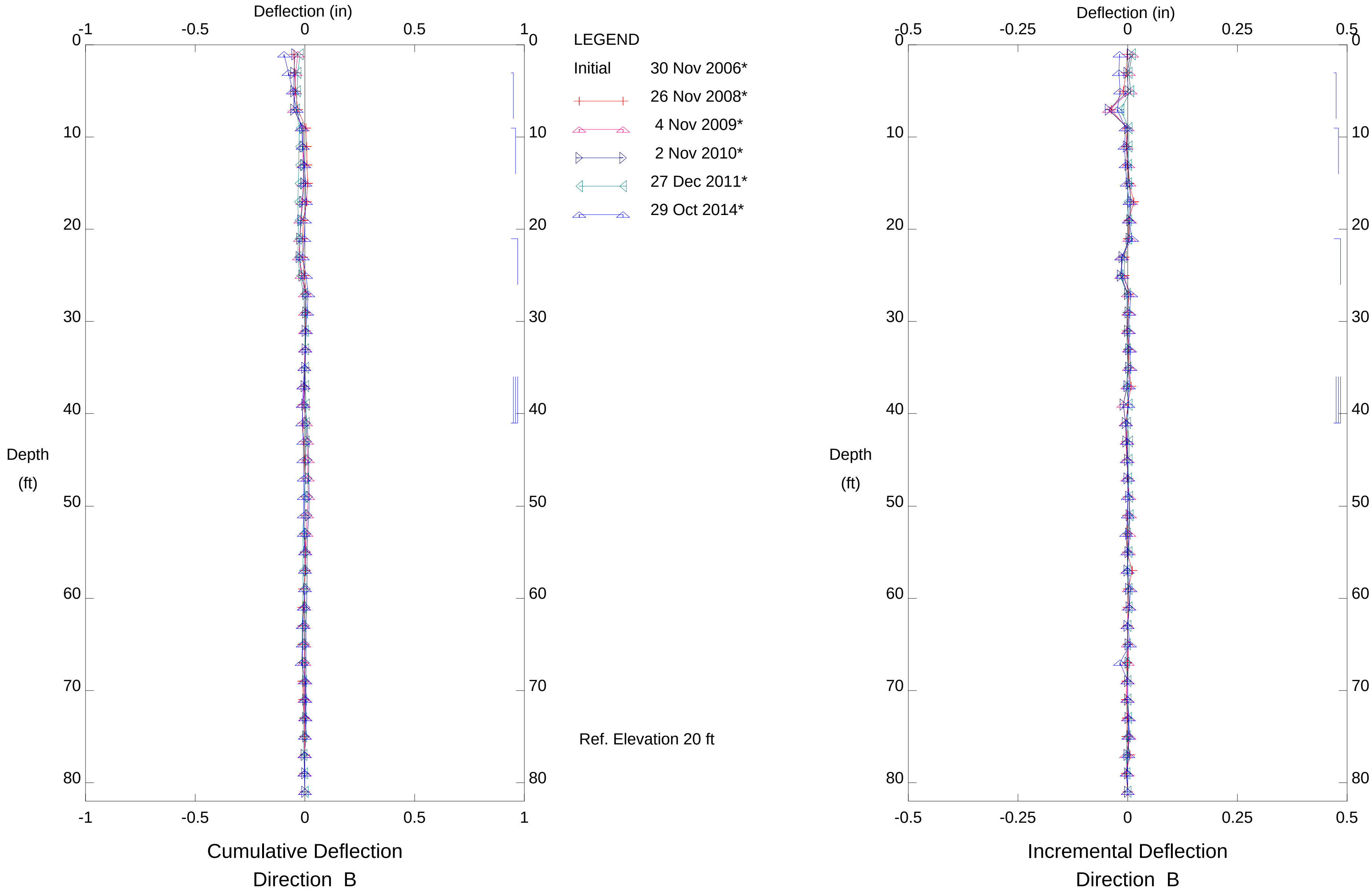


BIG ROCK MESA, Inclinometer SP-15

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-5a

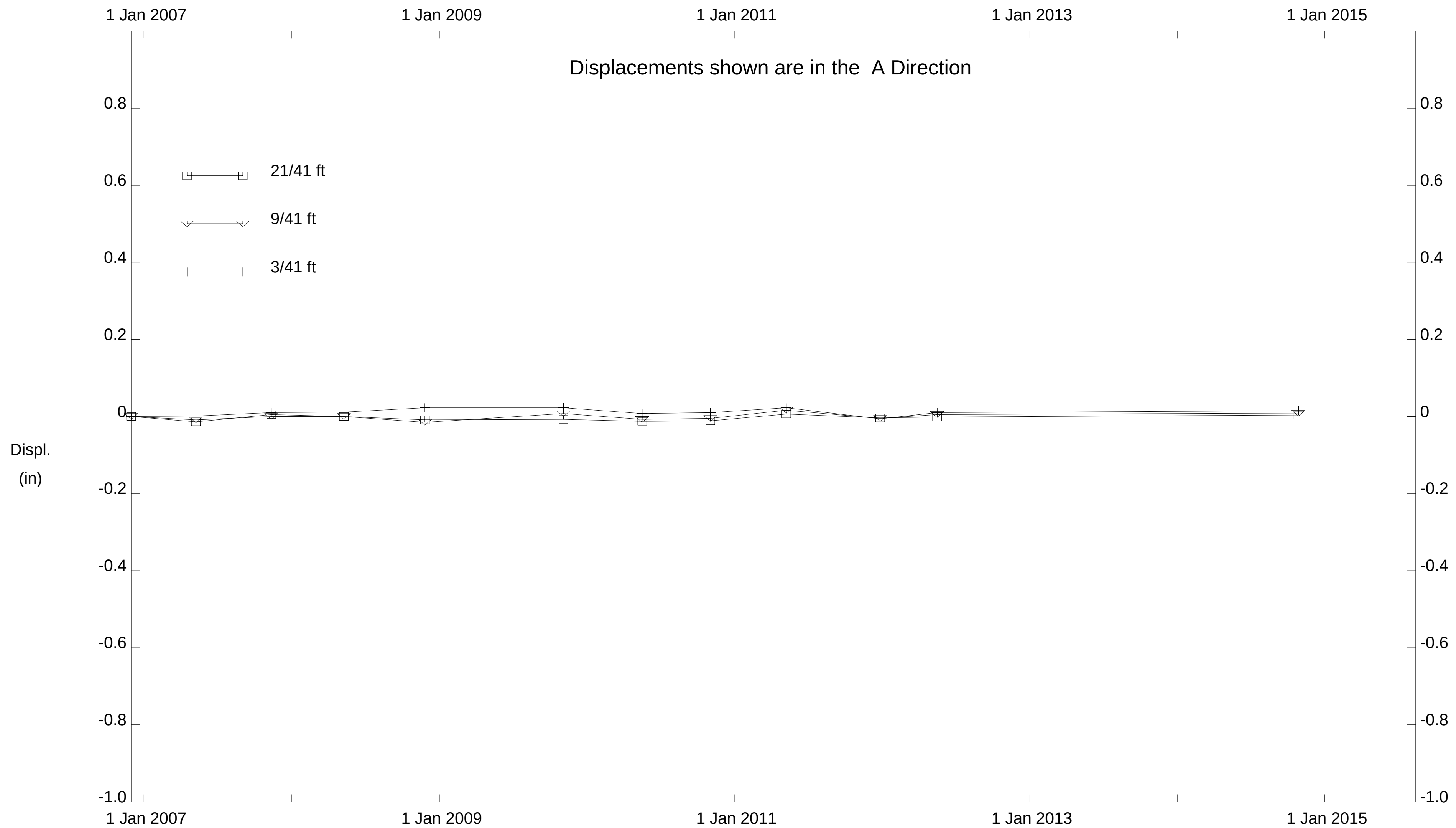


BIG ROCK MESA, Inclinometer SP-15

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

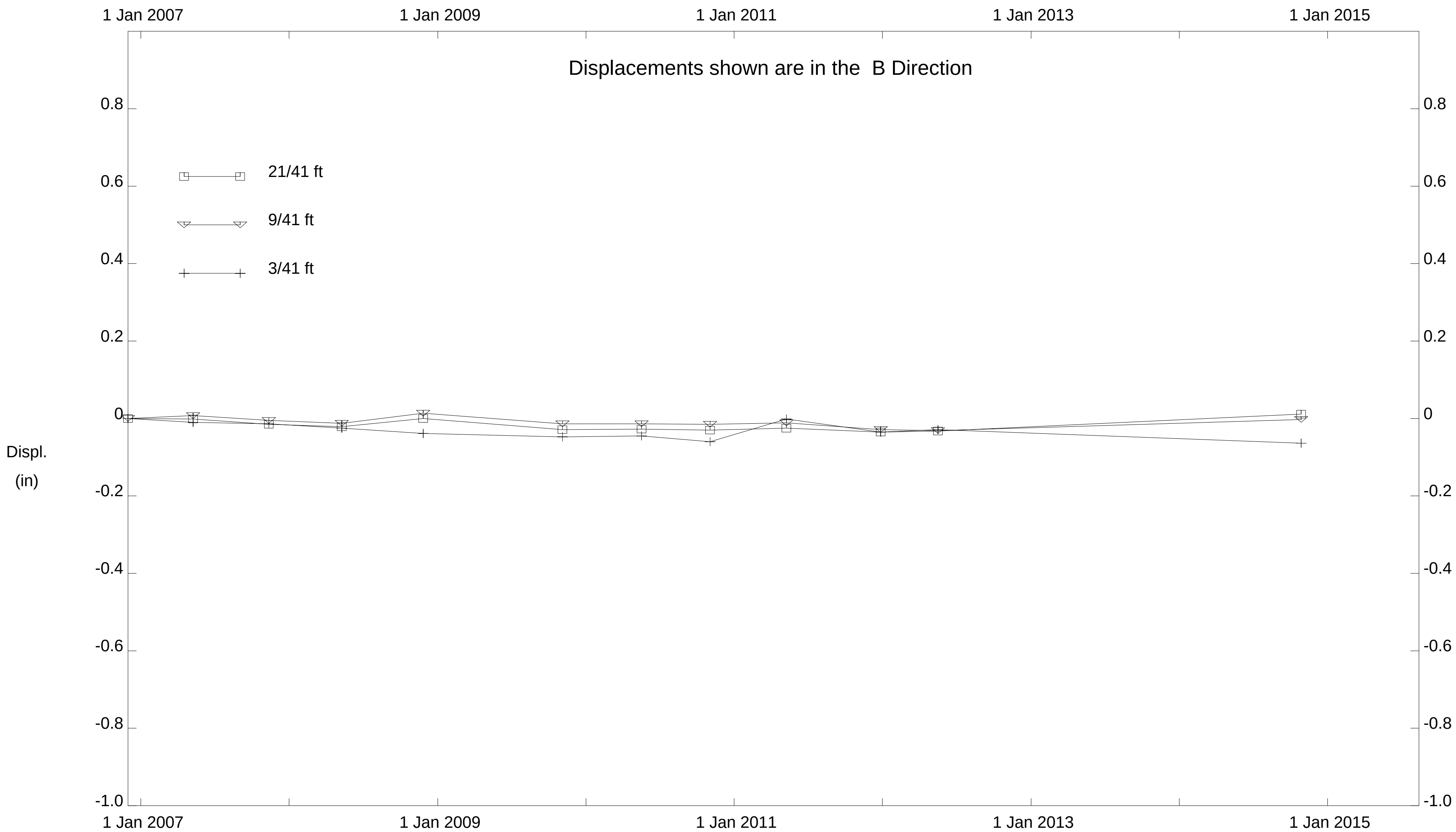
PLATE D-5b



BIG ROCK MESA, Inclinometer SP-15

PCH REGION

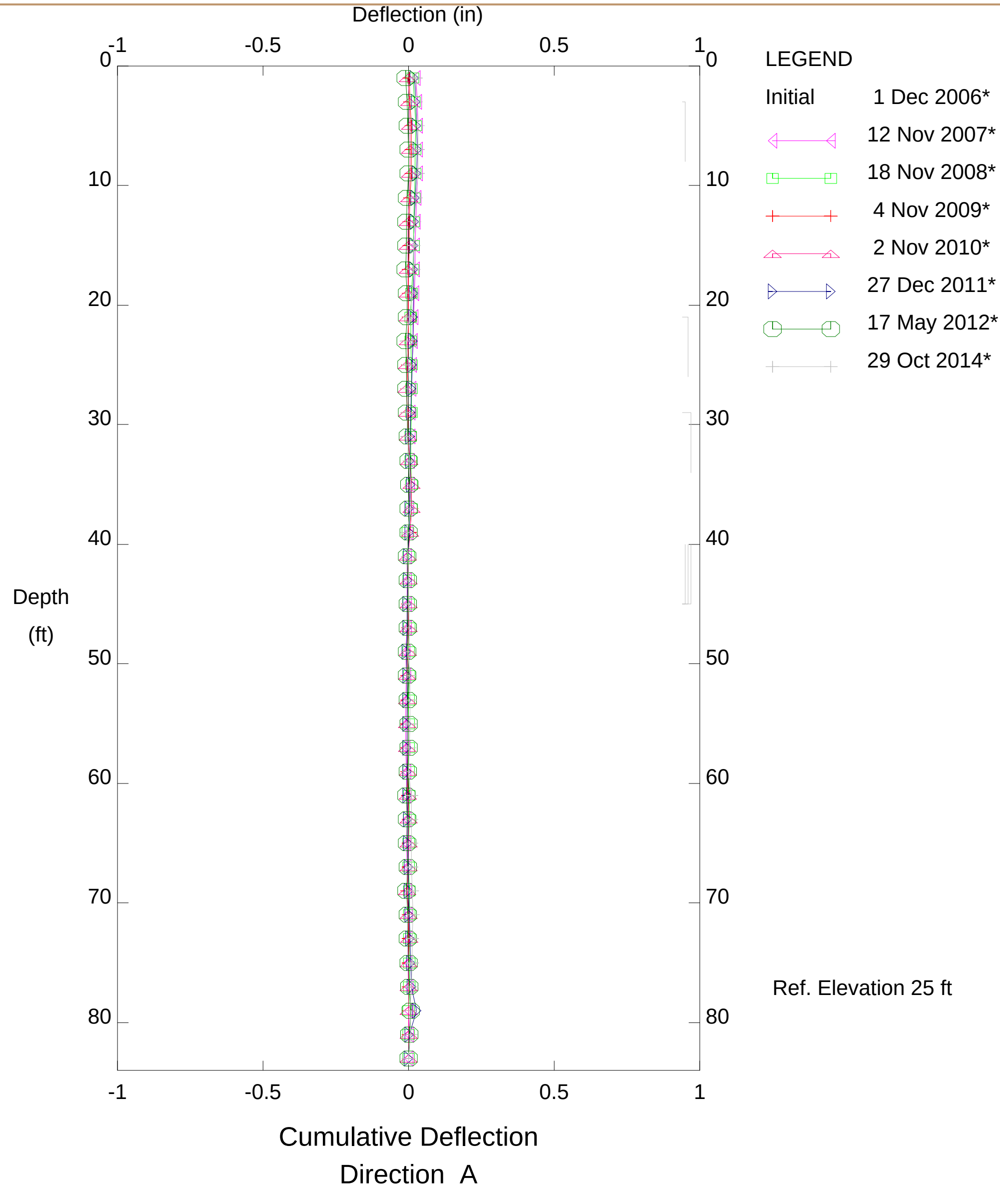
PLATE D-5c

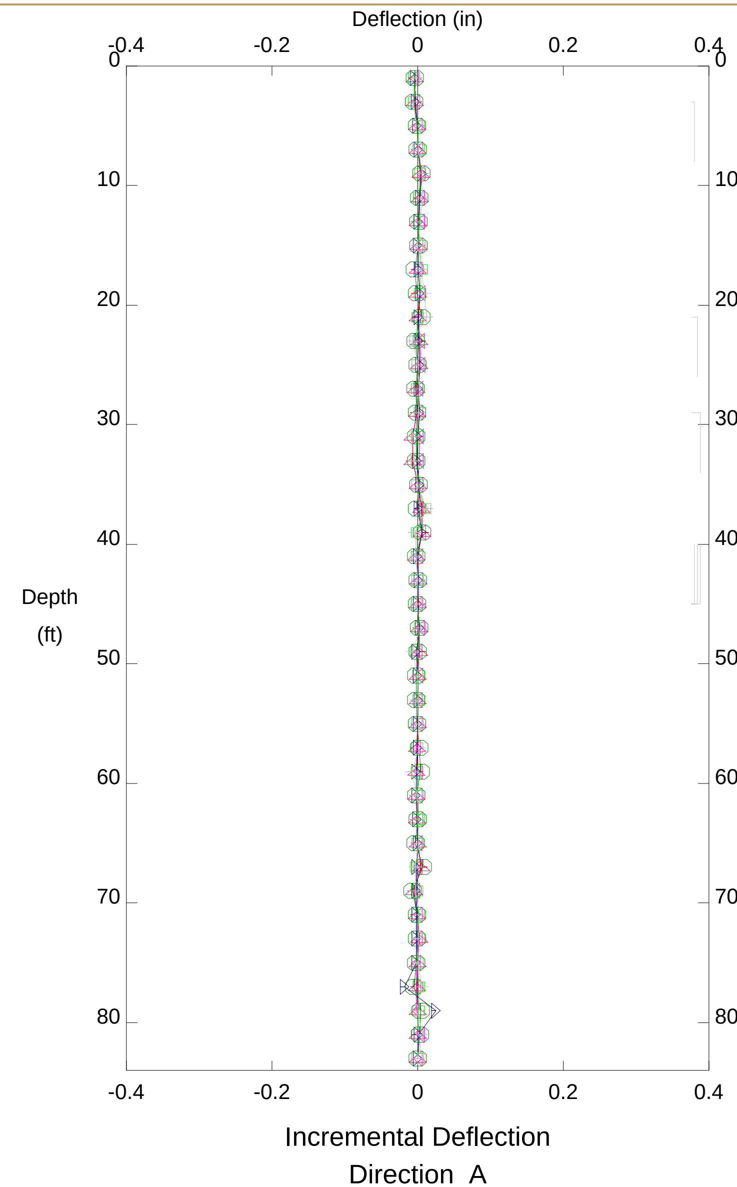


BIG ROCK MESA, Inclinometer SP-15

PCH REGION

PLATE D-5d



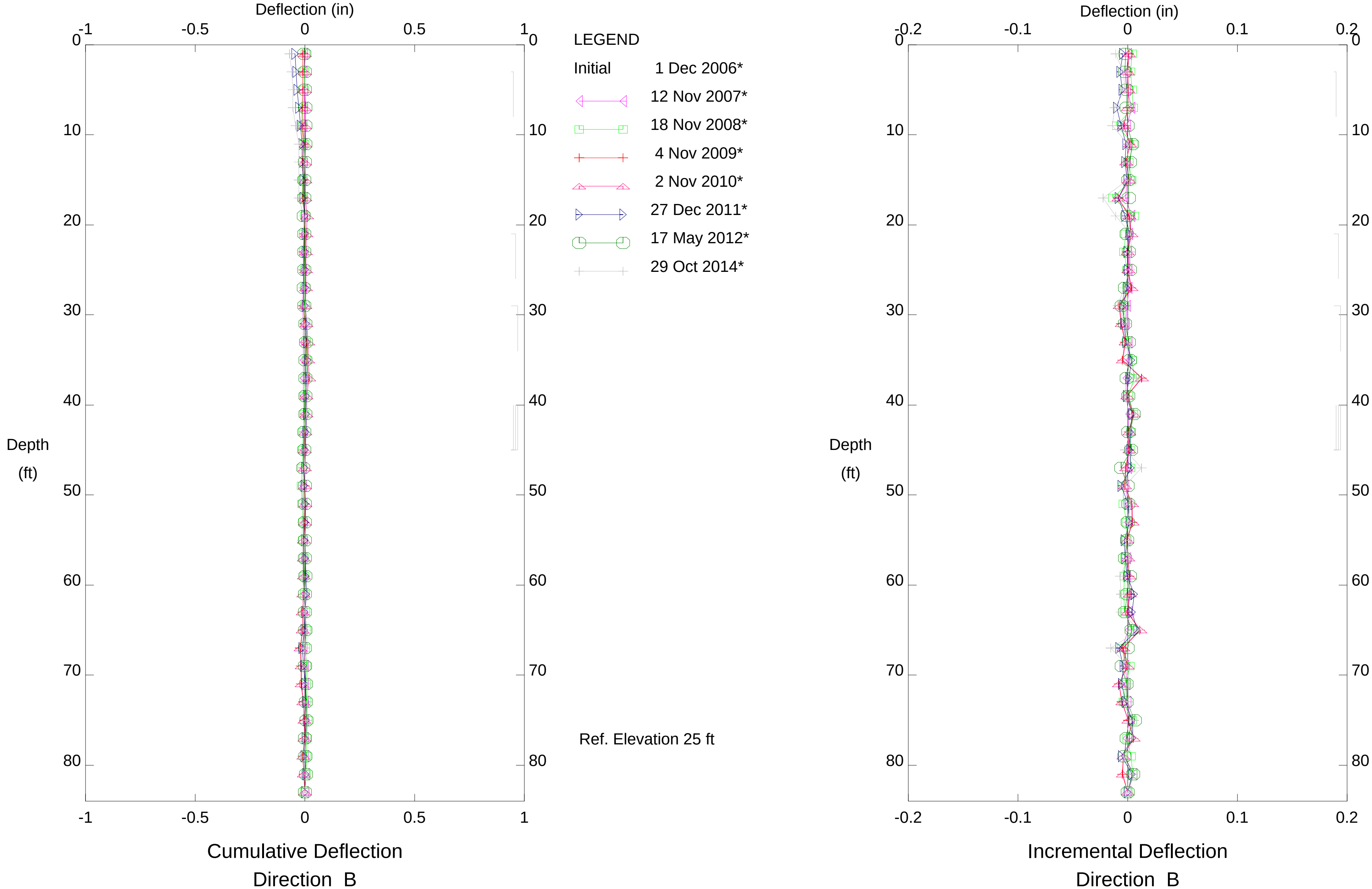


BIG ROCK MESA, Inclinometer SP-19

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-6a

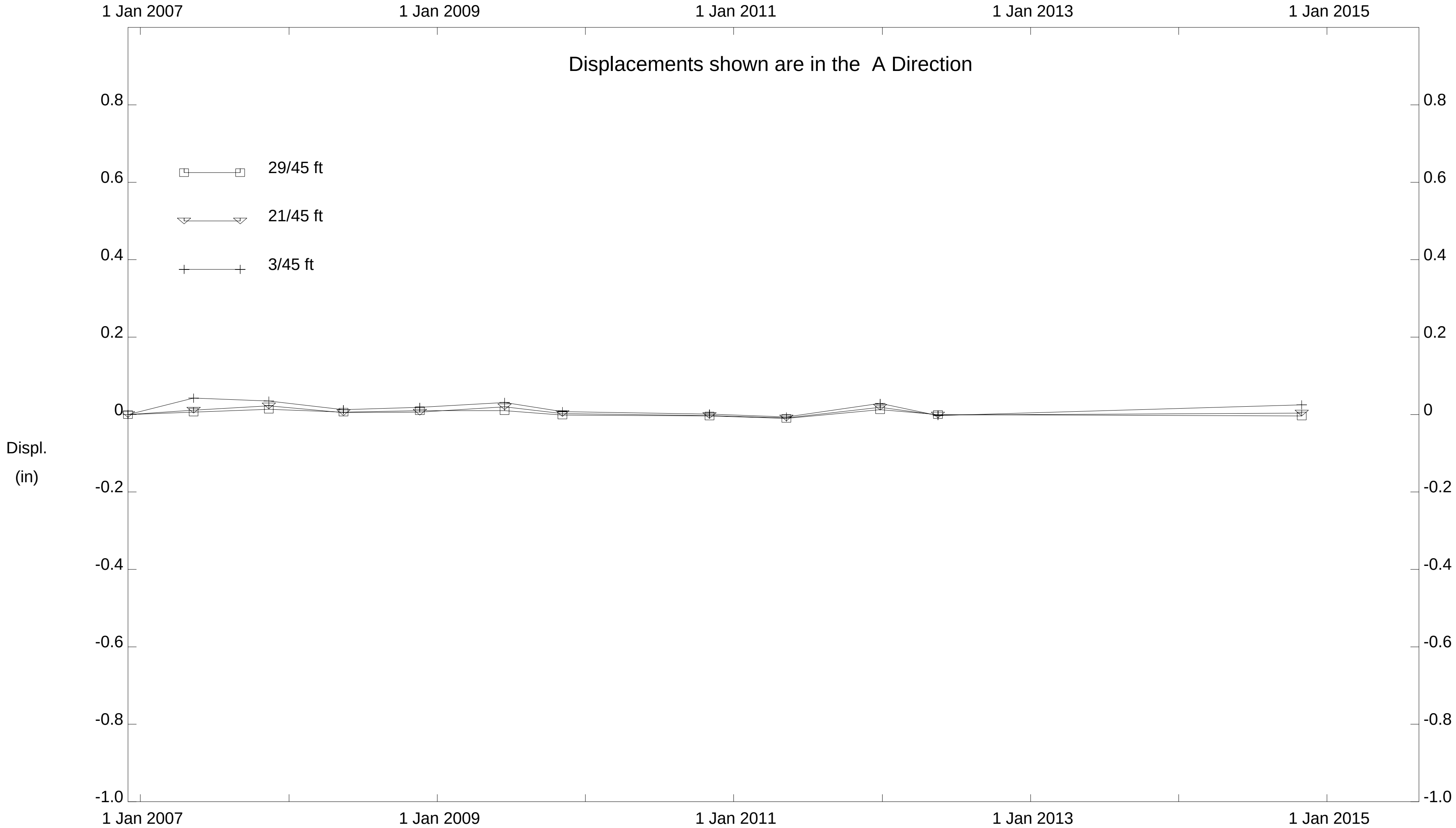


BIG ROCK MESA, Inclinometer SP-19

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

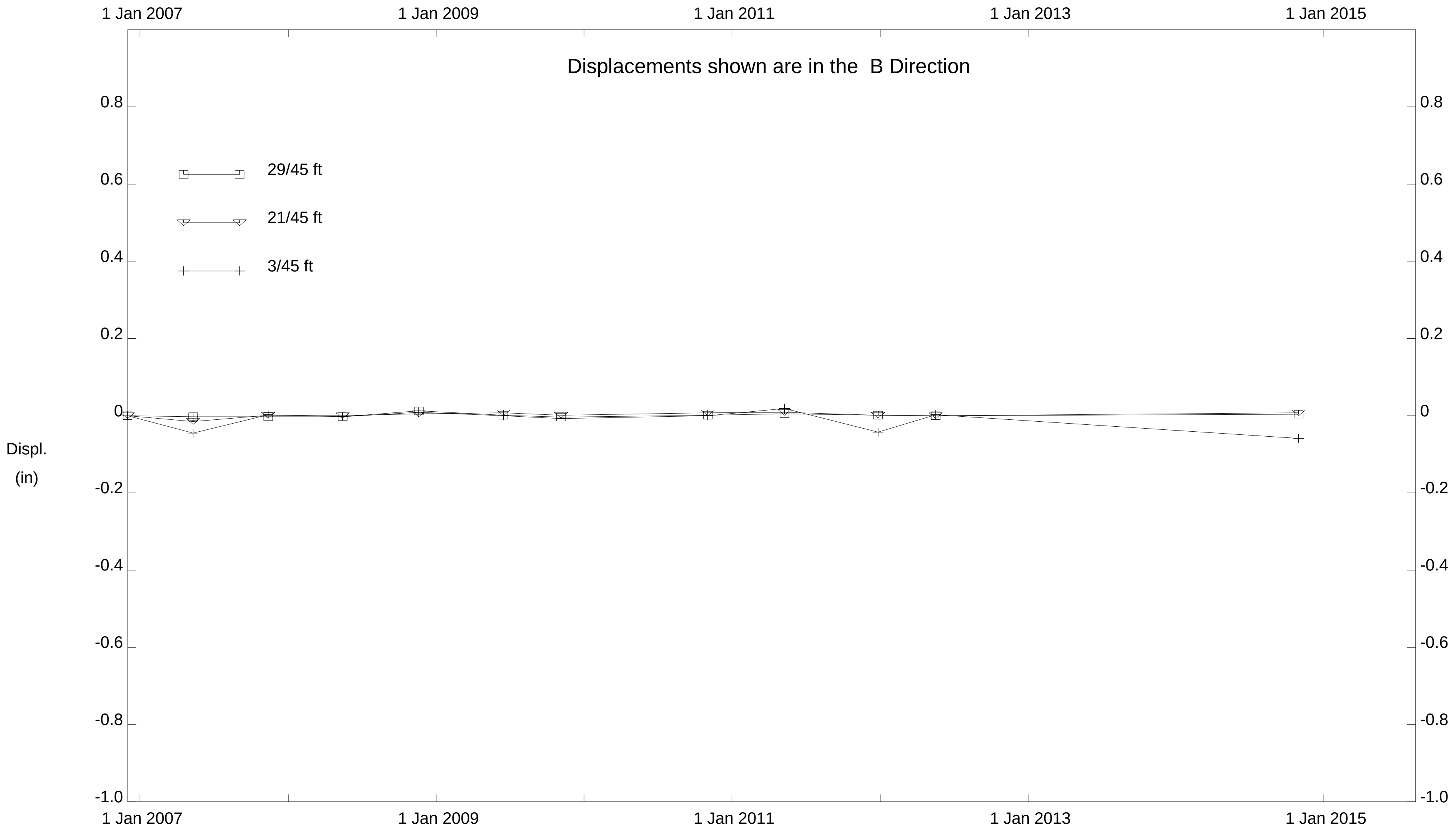
PLATE D-6b



BIG ROCK MESA, Inclinometer SP-19

PCH REGION

PLATE D-6c

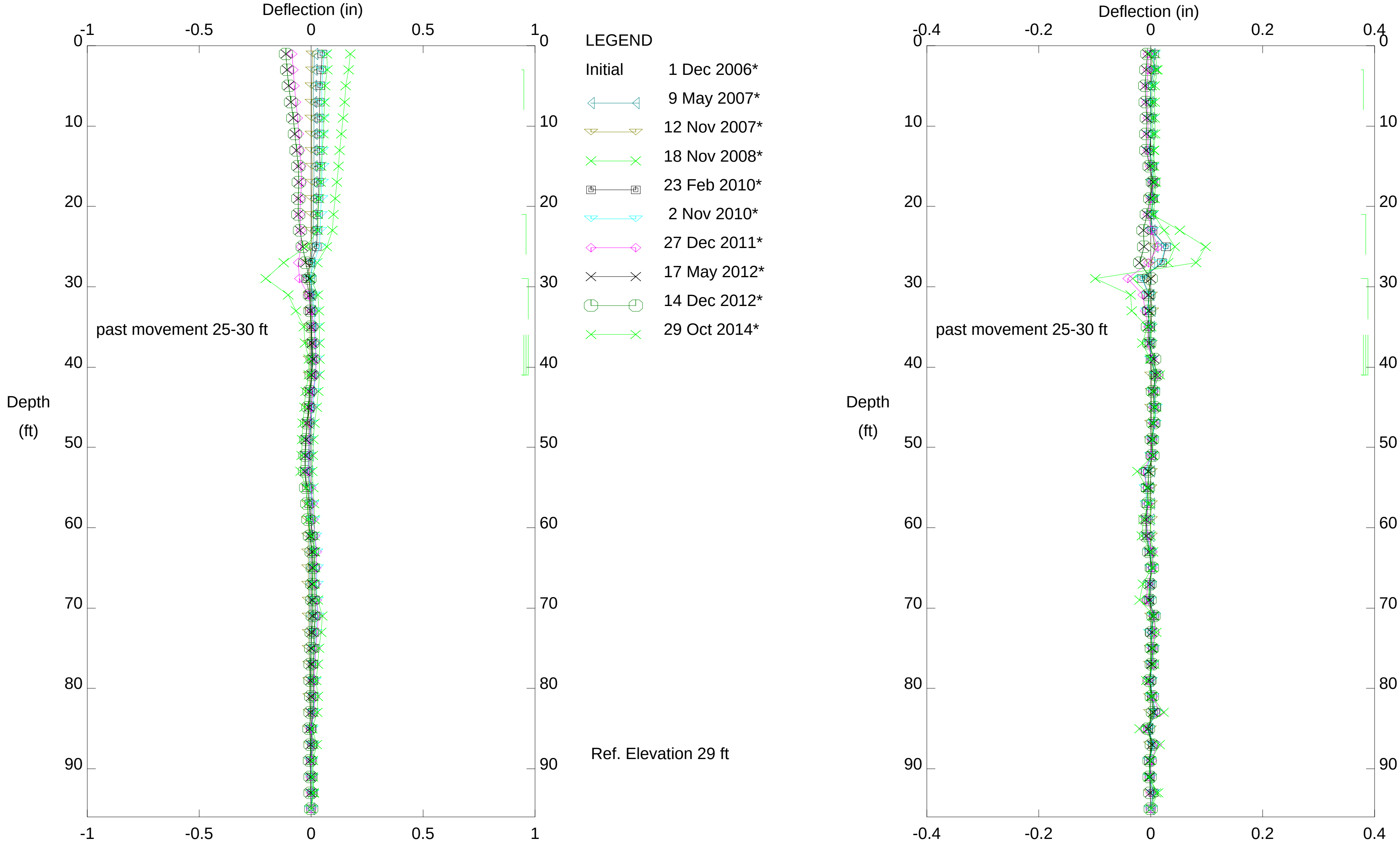


BIG ROCK MESA, Inclinometer SP-19

PCH REGION

PLATE D-6d

Fugro Consultants, Inc. - Ventura, CA



Cumulative Deflection
Direction A

Incremental Deflection
Direction A

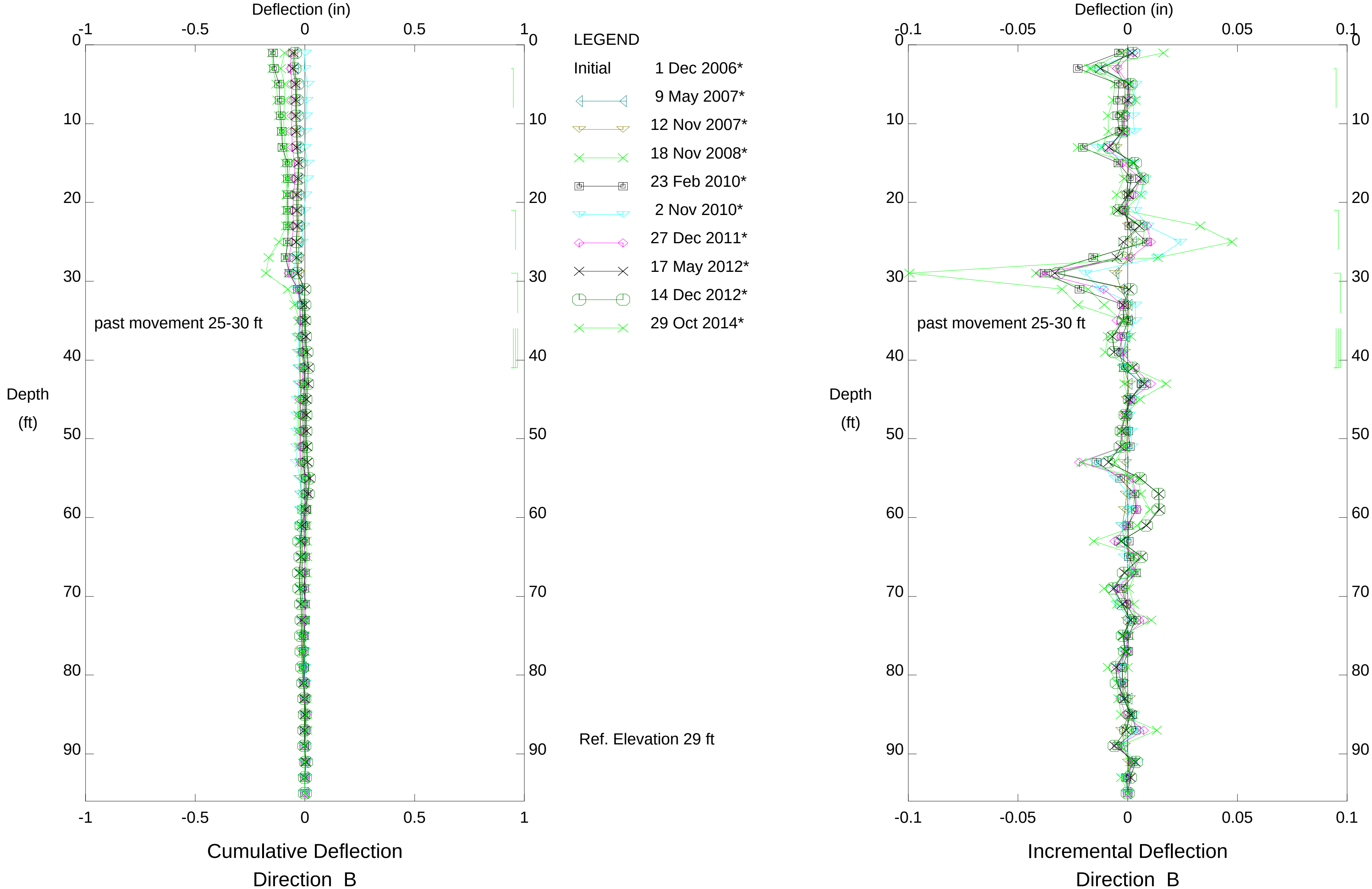
BIG ROCK MESA, Inclinometer SP-27A

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-7a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP27A.gtl

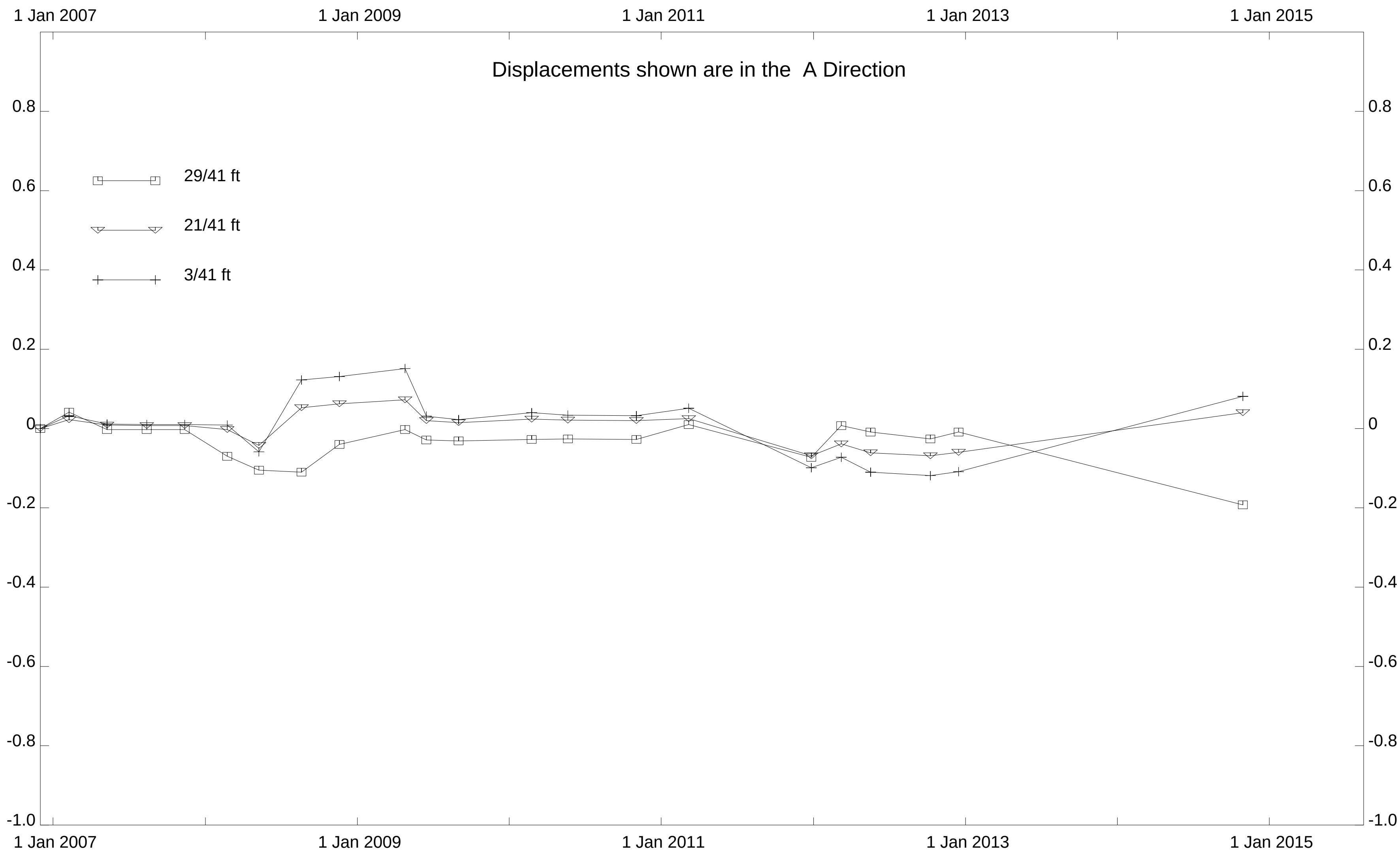


BIG ROCK MESA, Inclinometer SP-27A

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

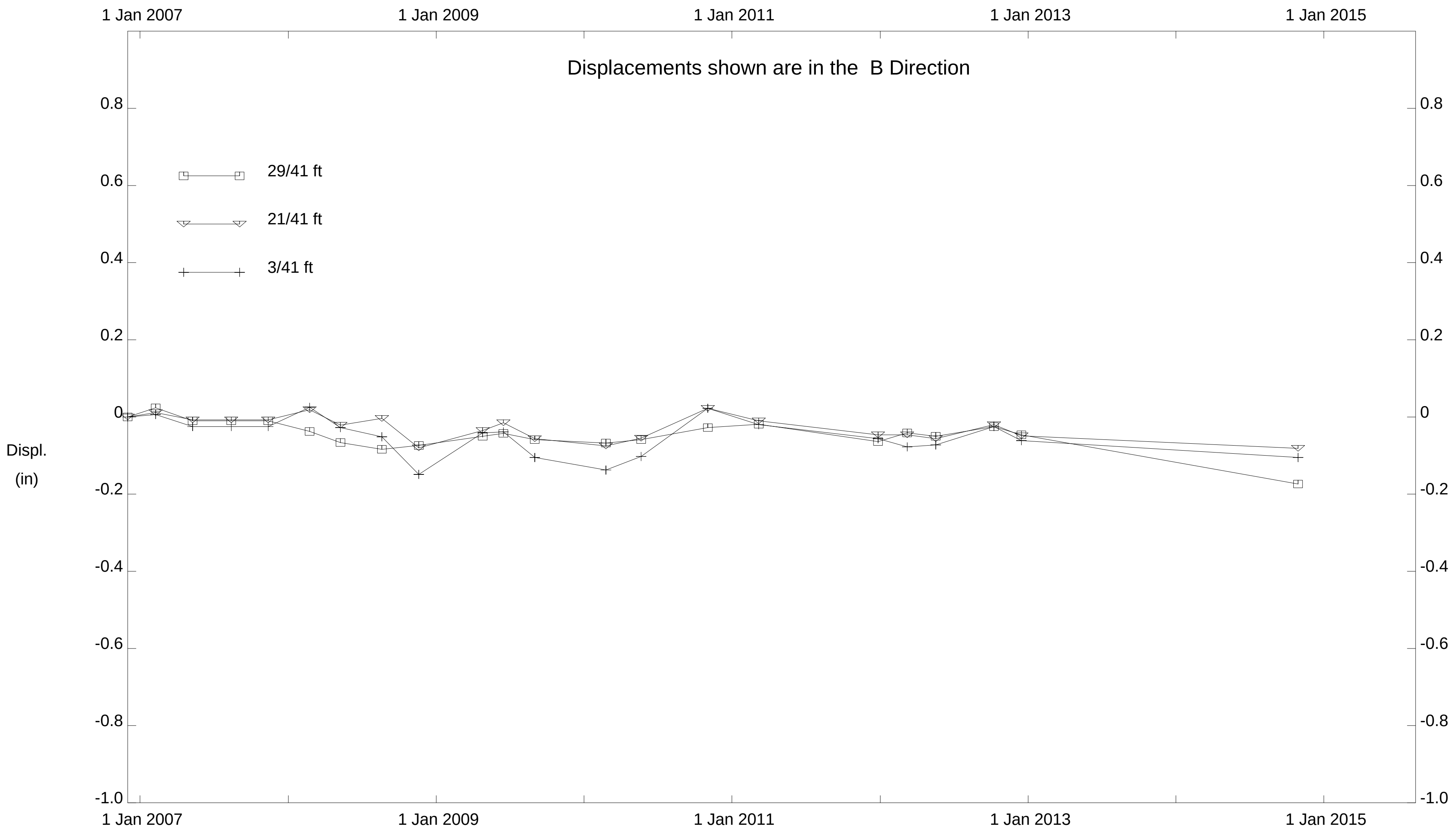
PLATE D-7b



BIG ROCK MESA, Inclinometer SP-27A

PCH REGION

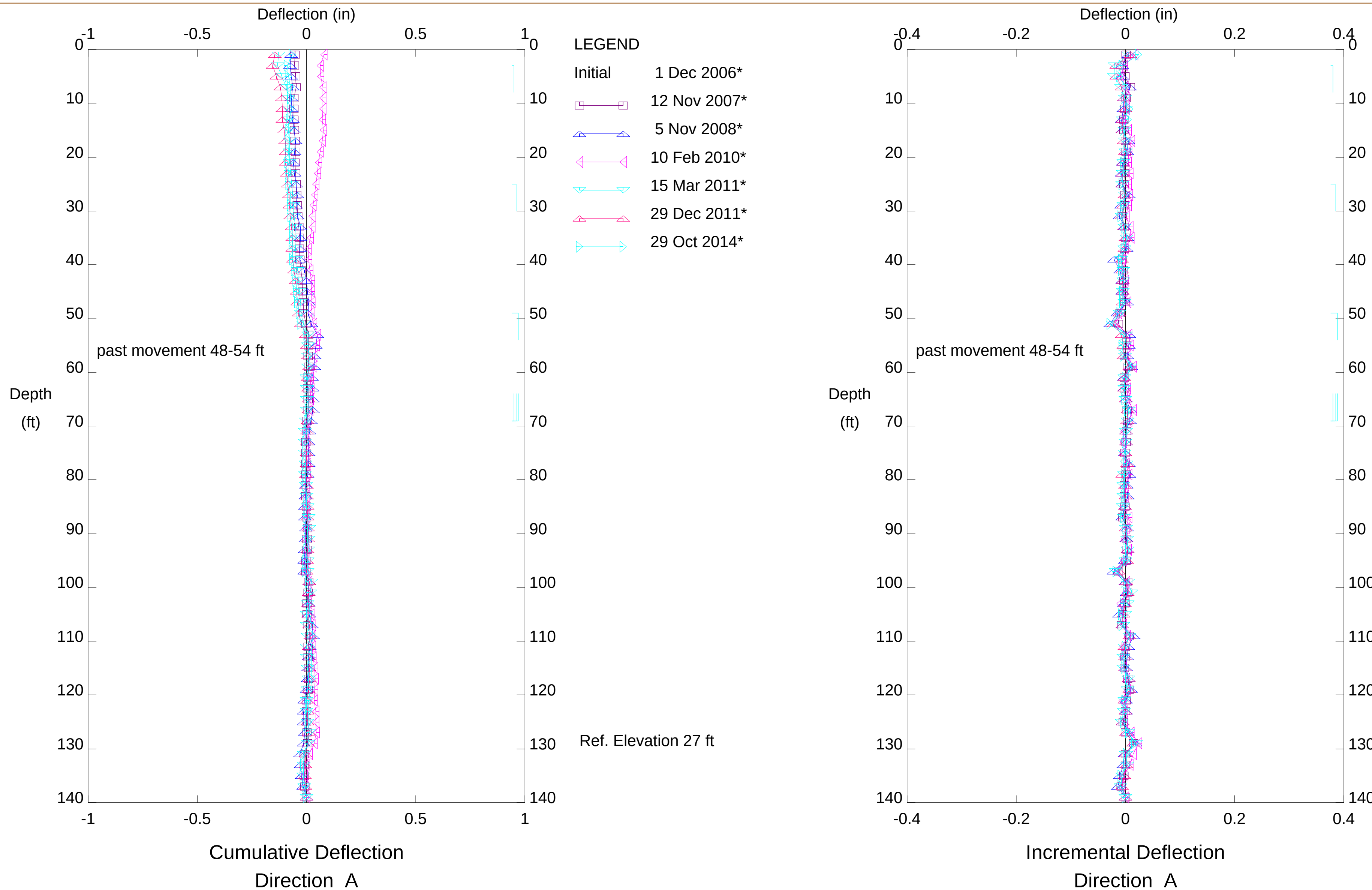
PLATE D-7c



BIG ROCK MESA, Inclinometer SP-27A

PCH REGION

PLATE D-7d

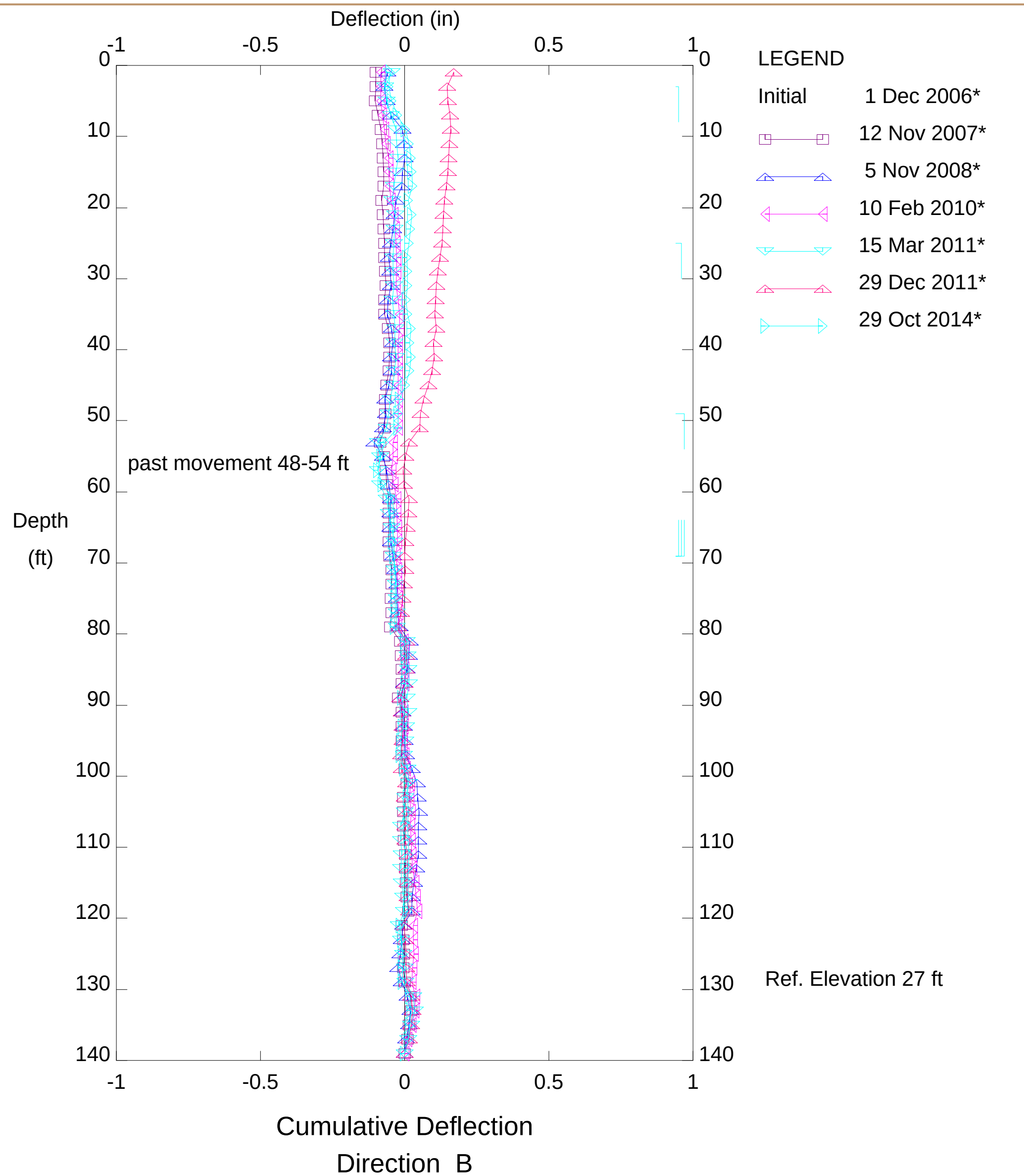


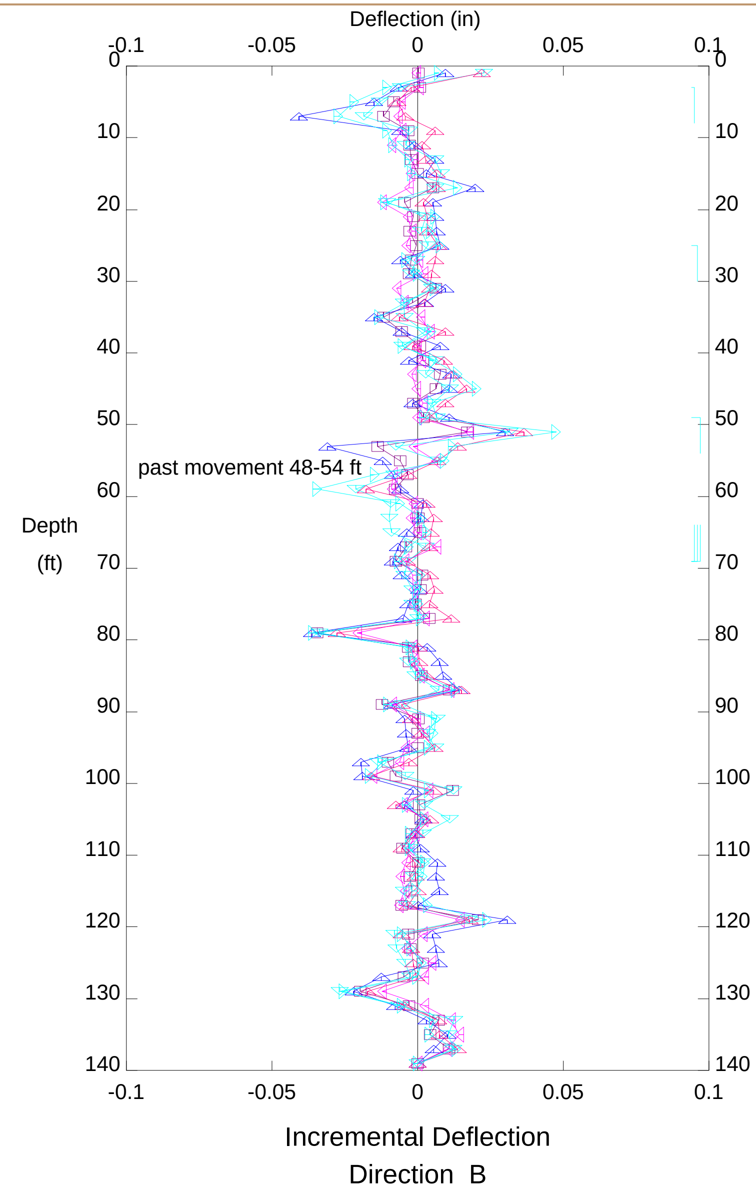
BIG ROCK MESA, Inclinometer SP-29

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-8a



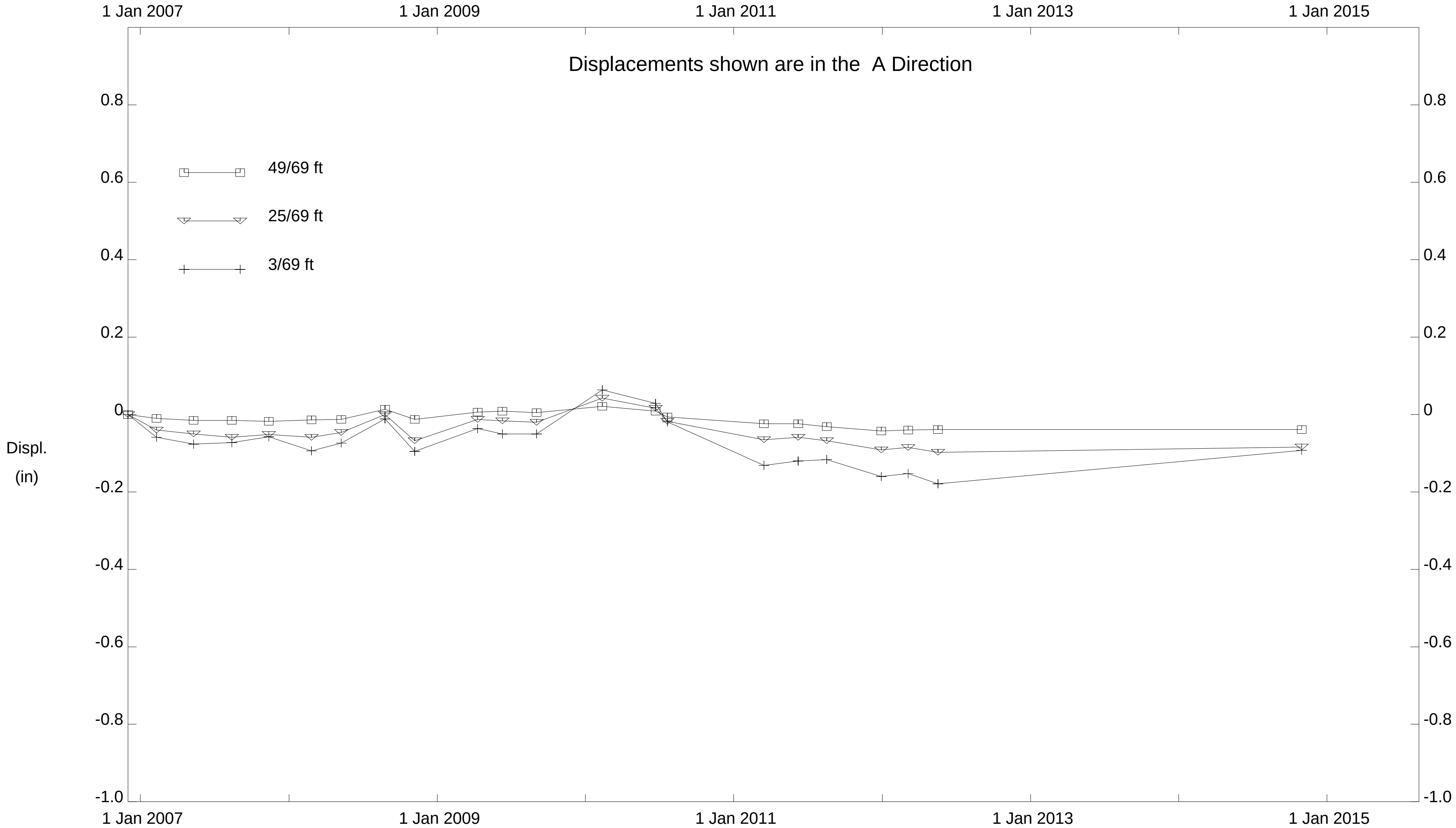


BIG ROCK MESA, Inclinometer SP-29

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

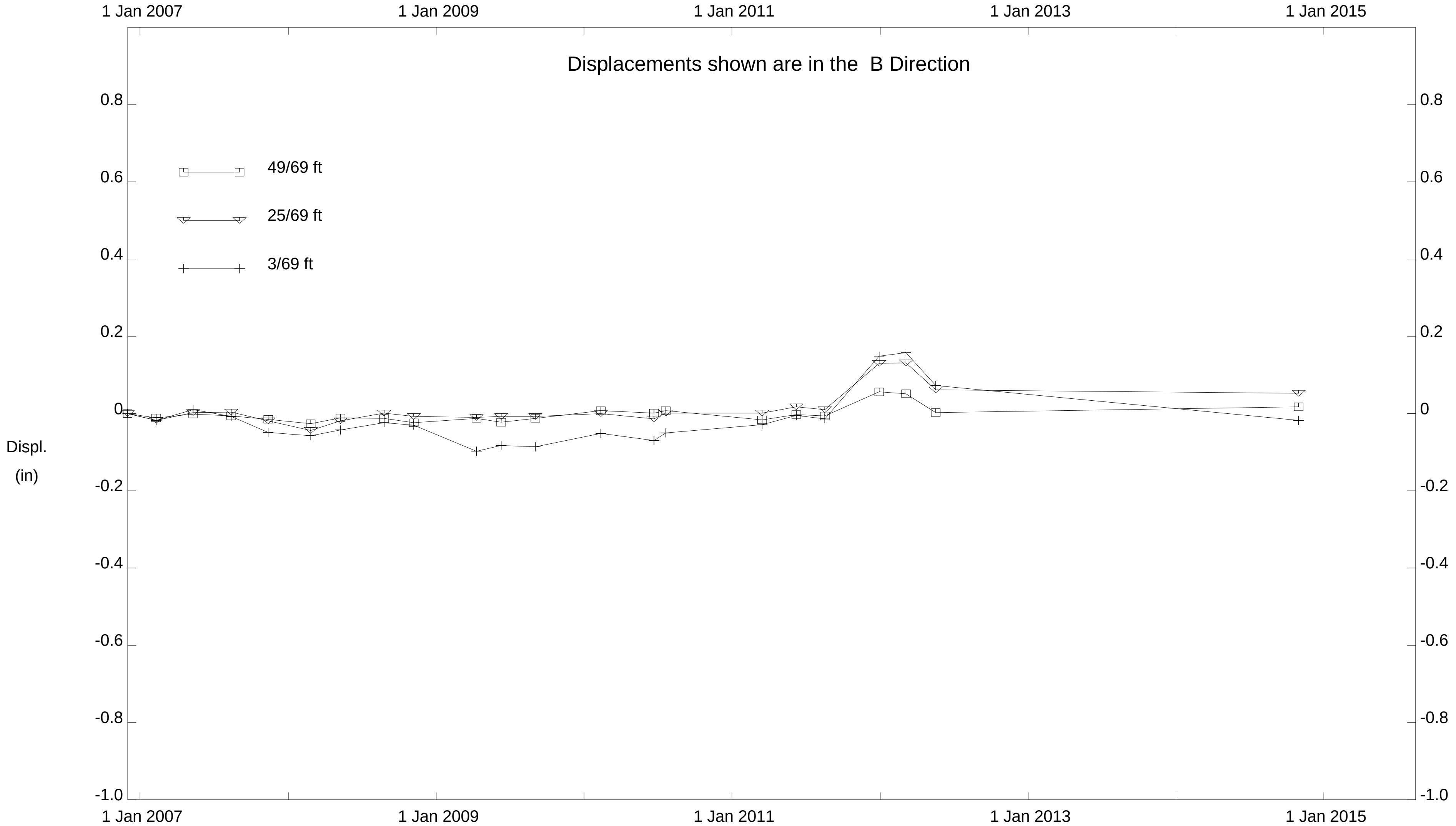
PLATE D-8b



BIG ROCK MESA, Inclinometer SP-29

PCH REGION

PLATE D-8c

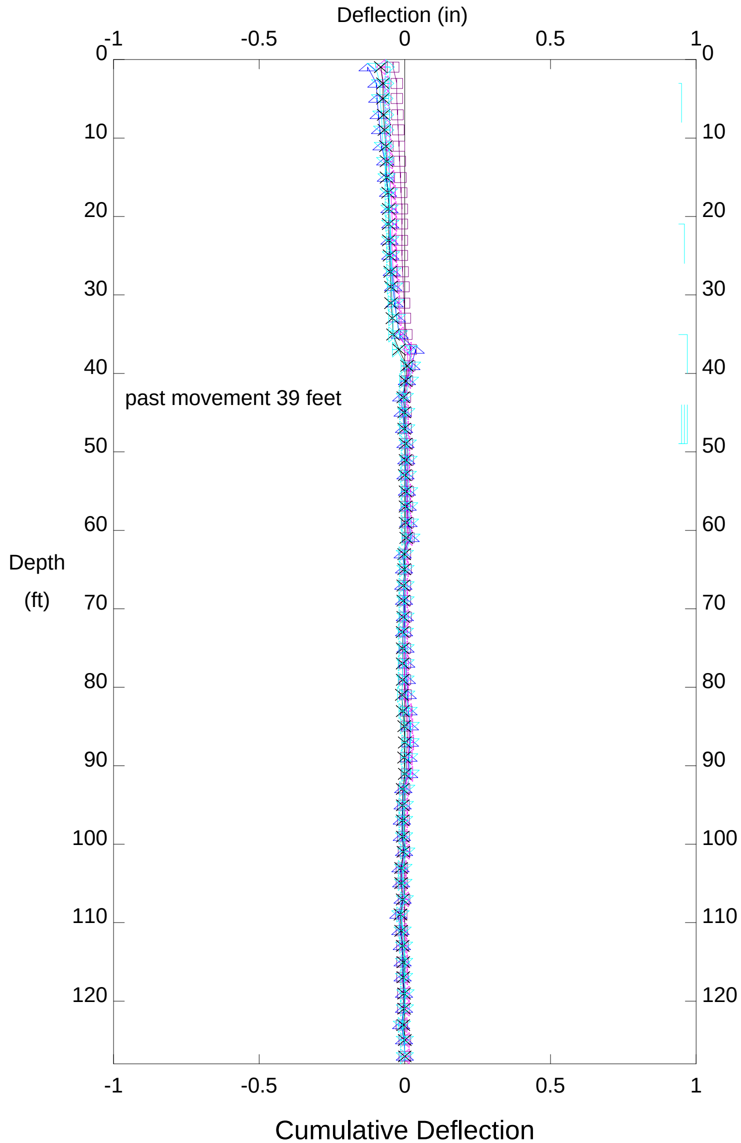


BIG ROCK MESA, Inclinometer SP-29

PCH REGION

PLATE D-8d

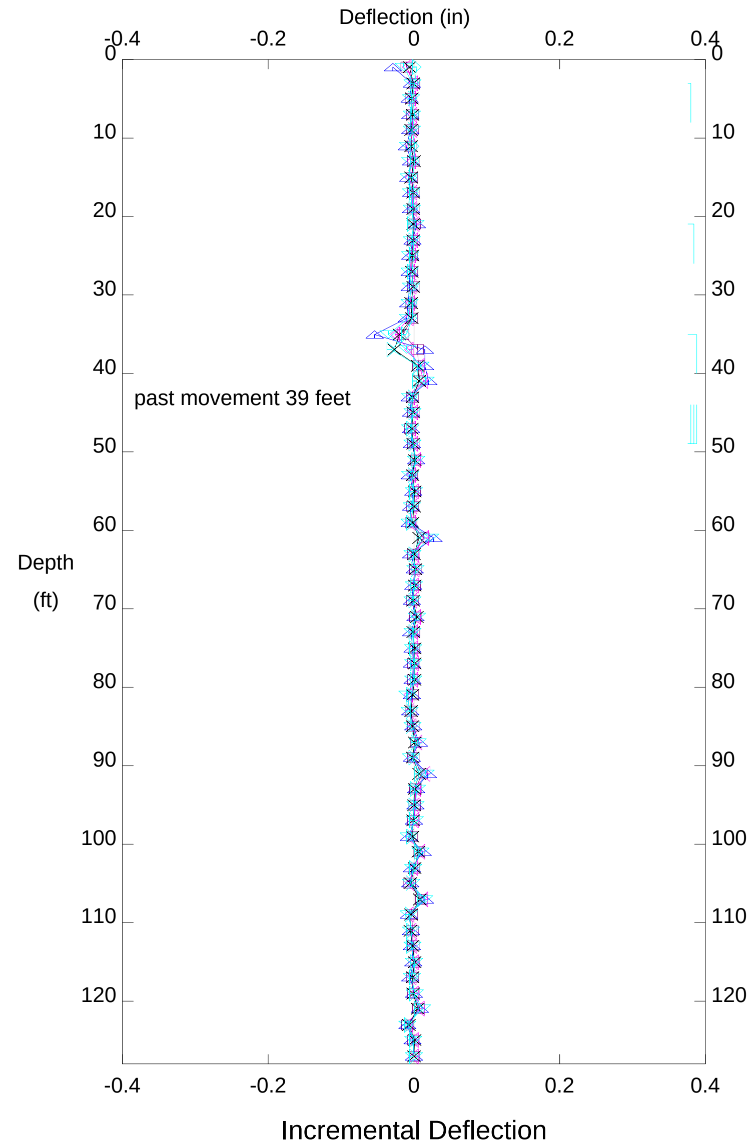
Fugro Consultants, Inc. - Ventura, CA



LEGEND

Initial 1 Dec 2006*
12 Nov 2007*
6 Nov 2008*
20 Nov 2009*
2 Nov 2010*
29 Dec 2011*
31 Oct 2014*

Ref. Elevation 29 ft



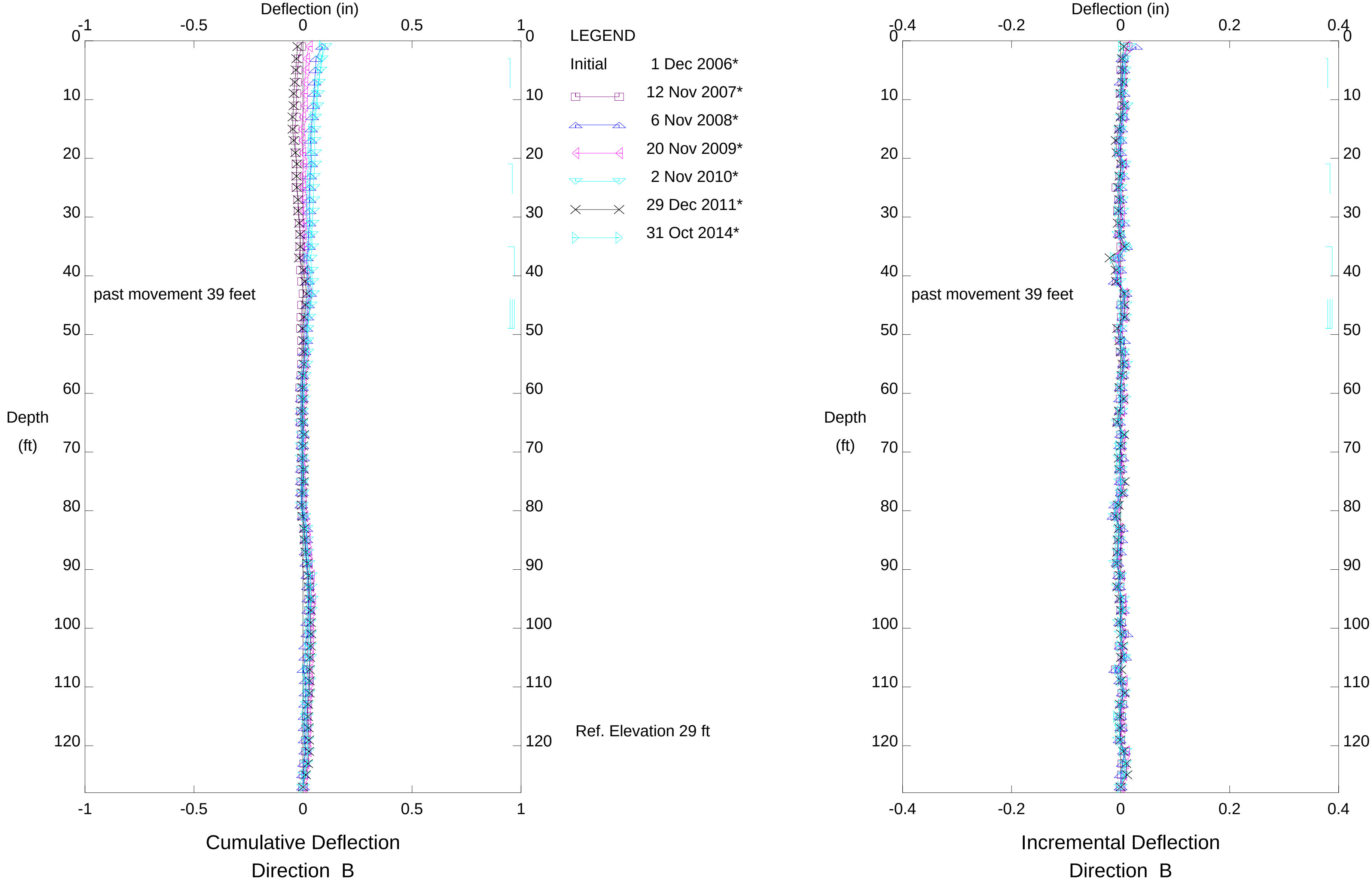
BIG ROCK MESA, Inclinometer SP-30

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-9a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP30.gtl

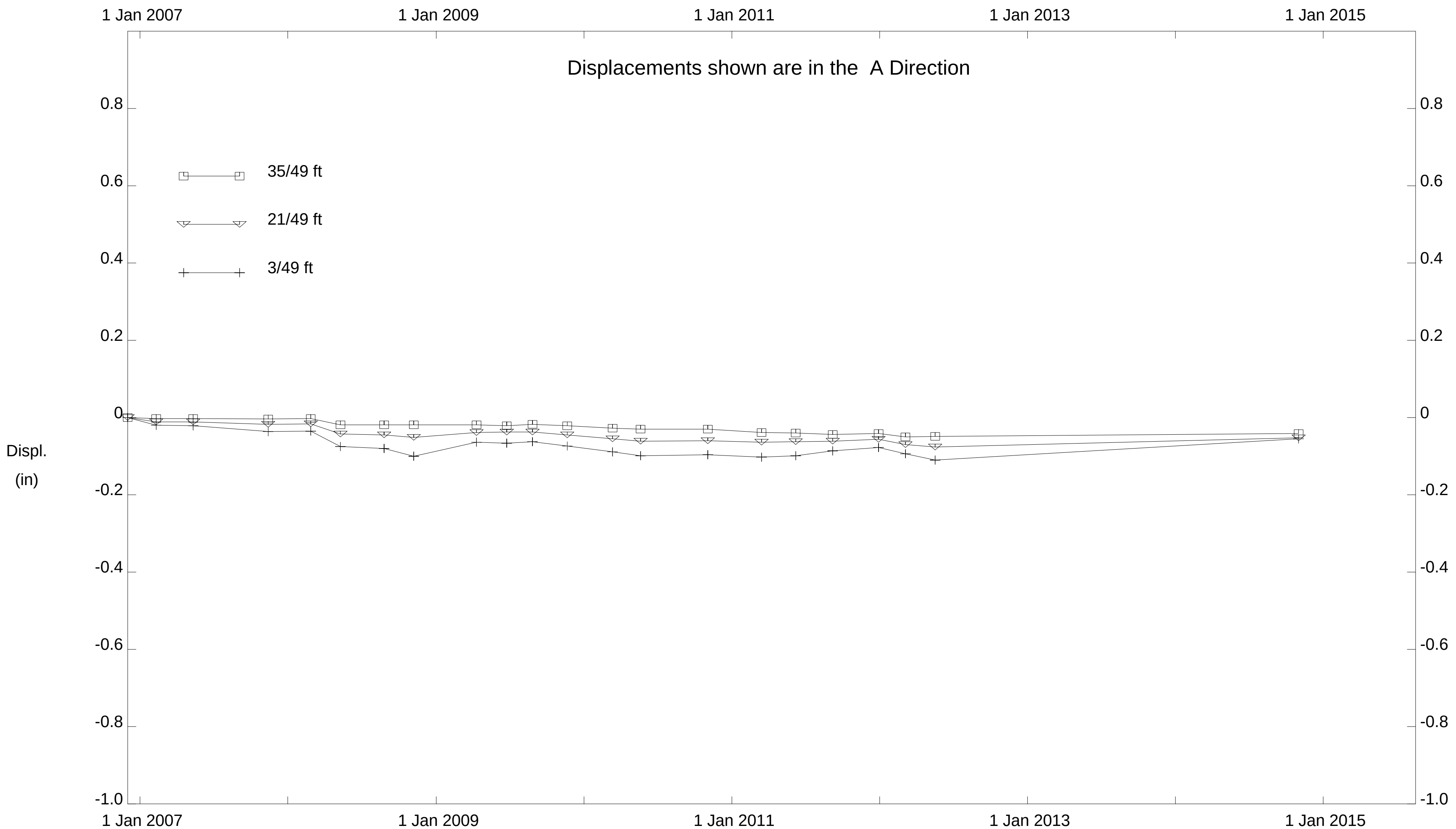


BIG ROCK MESA, Inclinometer SP-30

PCH REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-9b

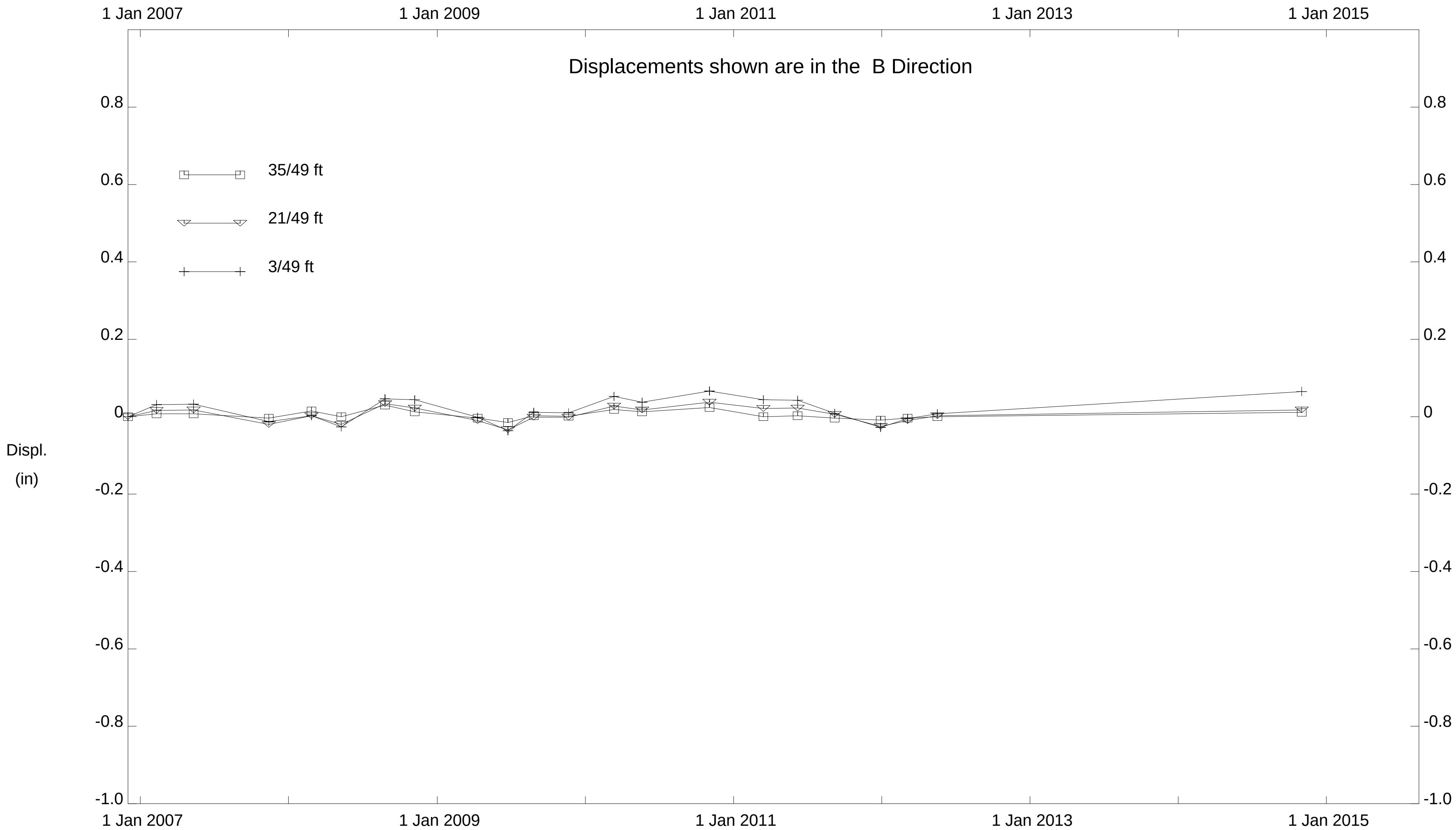


BIG ROCK MESA, Inclinometer SP-30

PCH REGION

PLATE D-9c

Fugro Consultants, Inc. - Ventura, CA

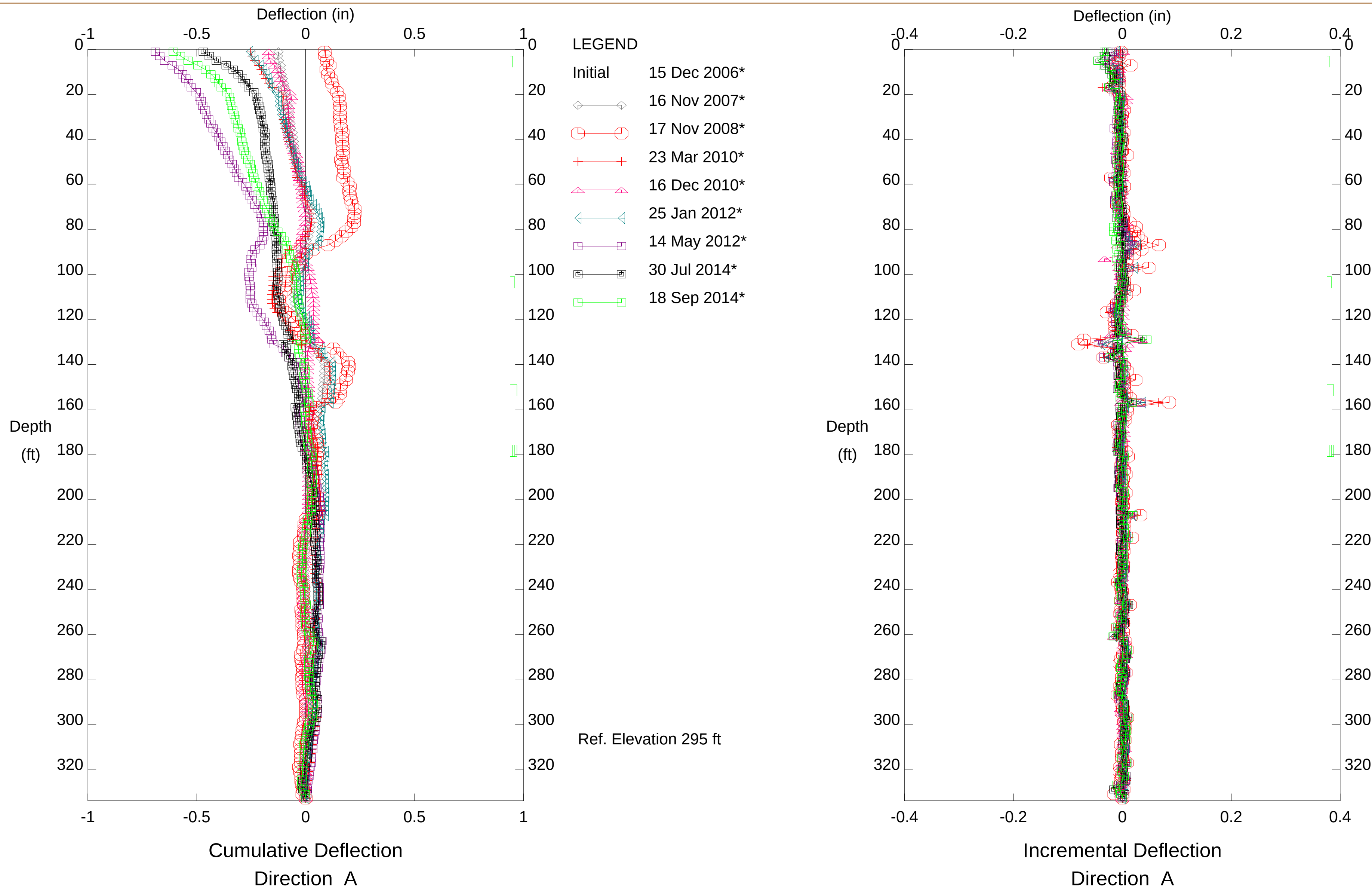


BIG ROCK MESA, Inclinometer SP-30

PCH REGION

PLATE D-9d

Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-10

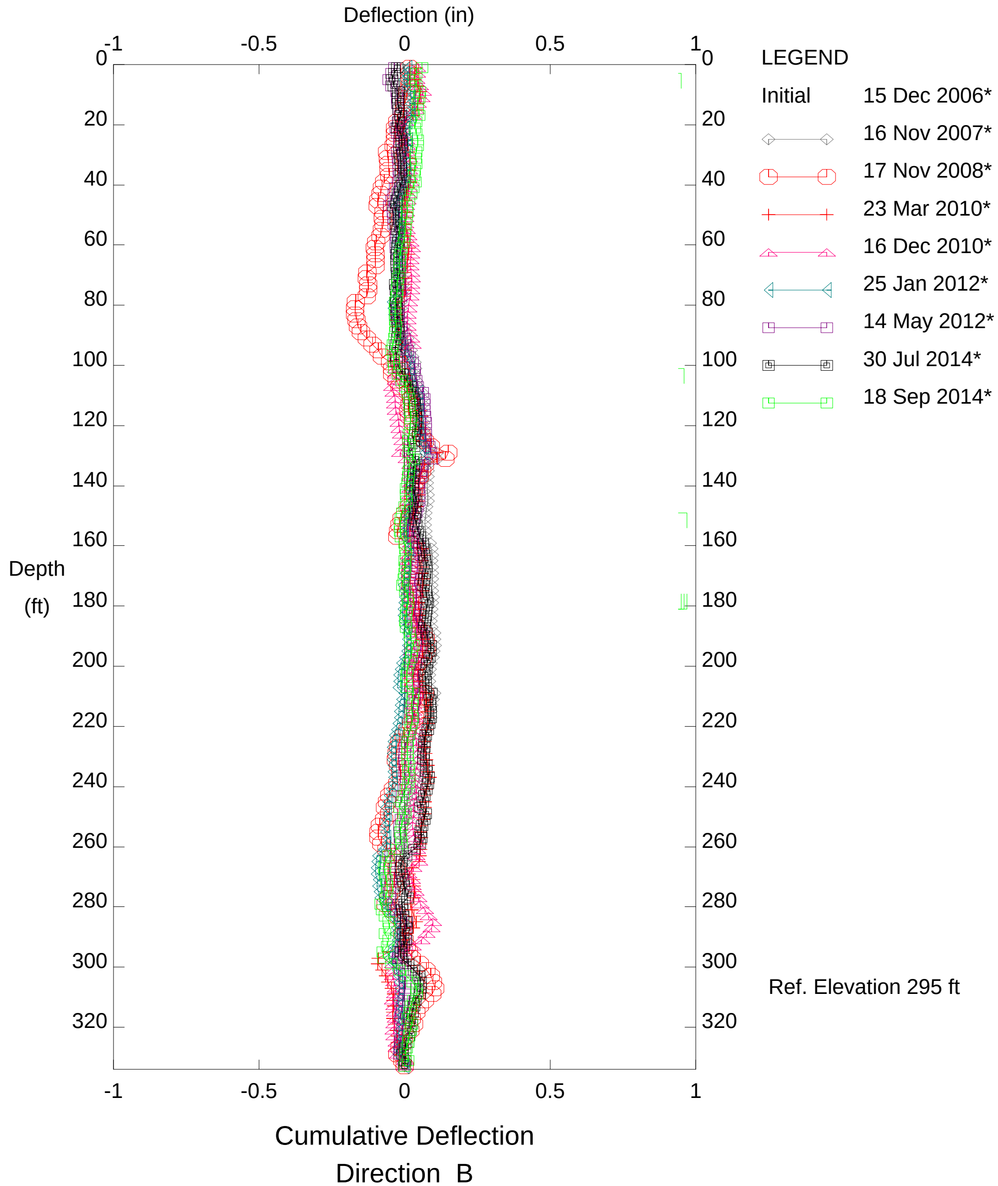
BLUFF REGION

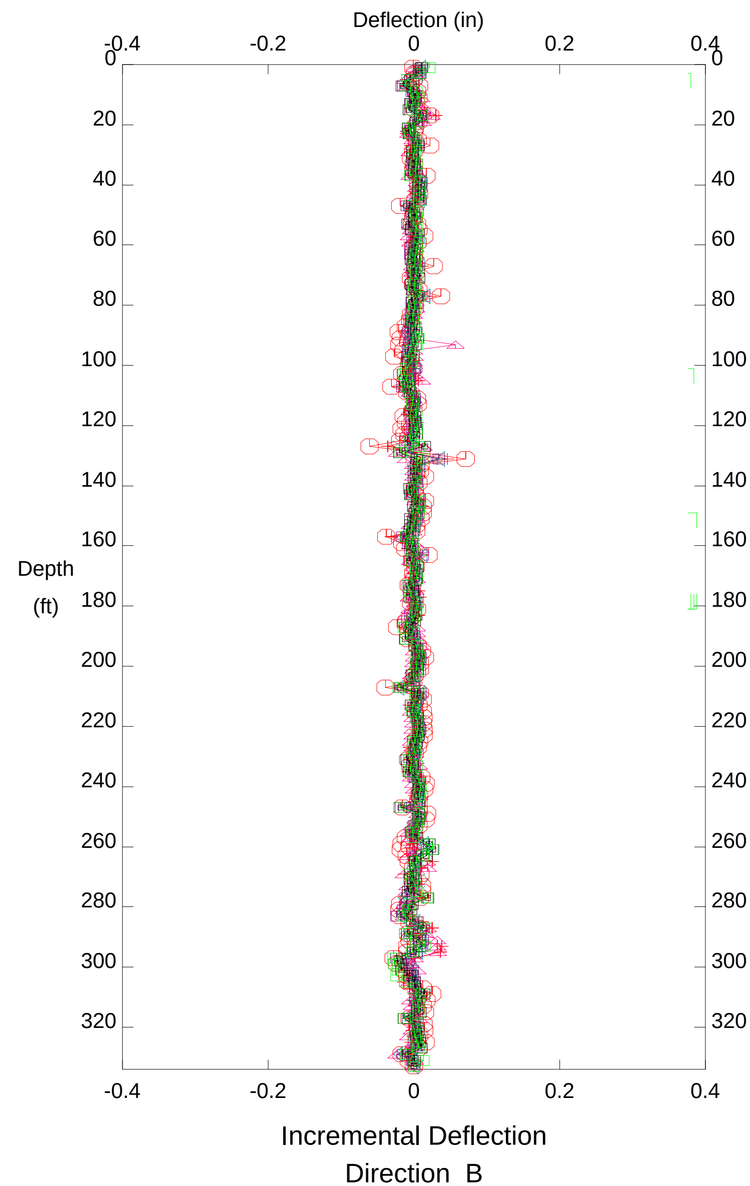
Sets marked * include zero shift and/or rotation corrections.

PLATE D-10a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP10.gtl

Fugro Consultants, Inc. - Ventura, CA





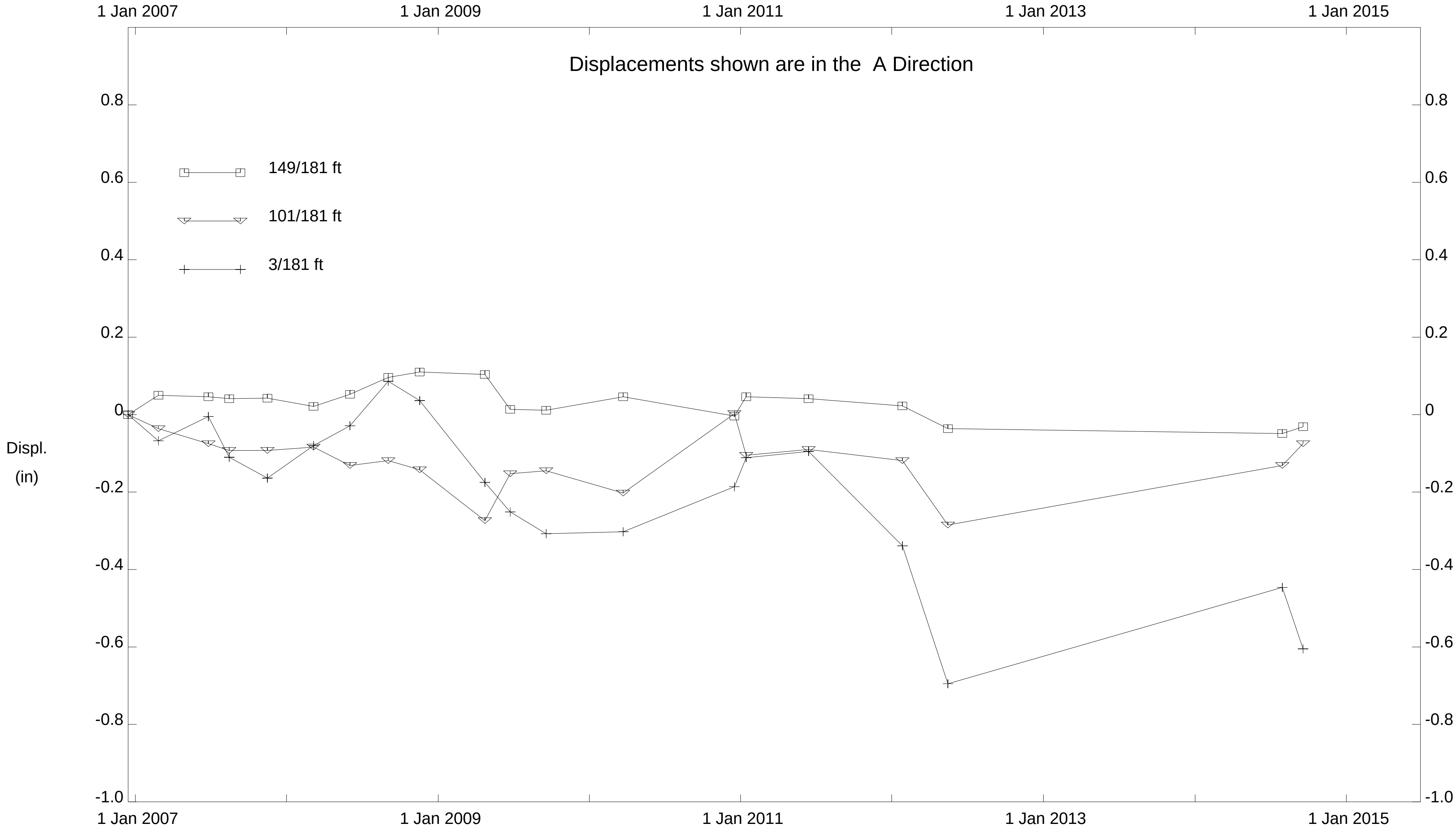
BIG ROCK MESA, Inclinometer SP-10

BLUFF REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-10b

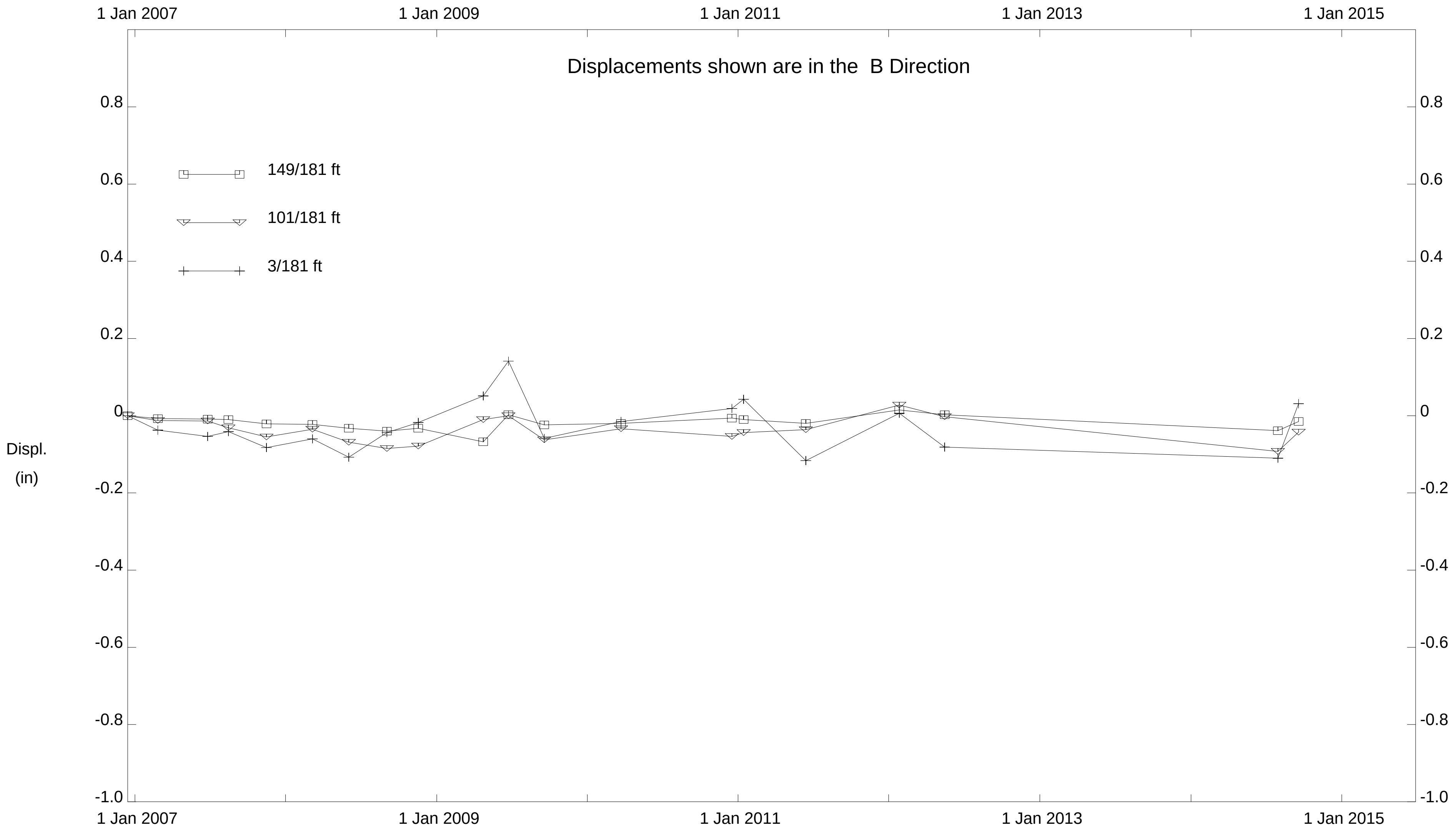
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP10.gtl



BIG ROCK MESA, Inclinometer SP-10

BLUFF REGION

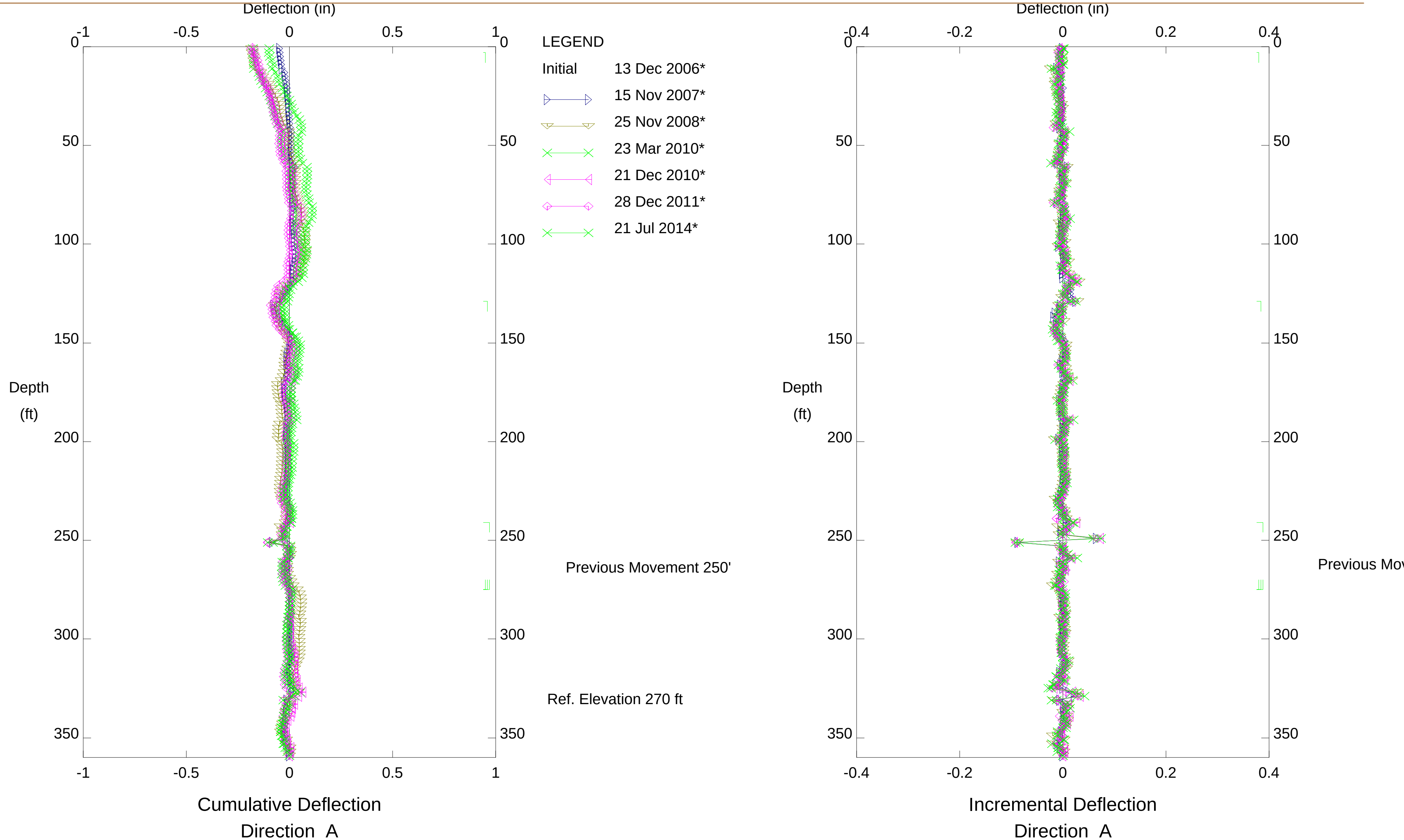
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-10

BLUFF REGION

PLATE D-10d



past movement at 245 feet

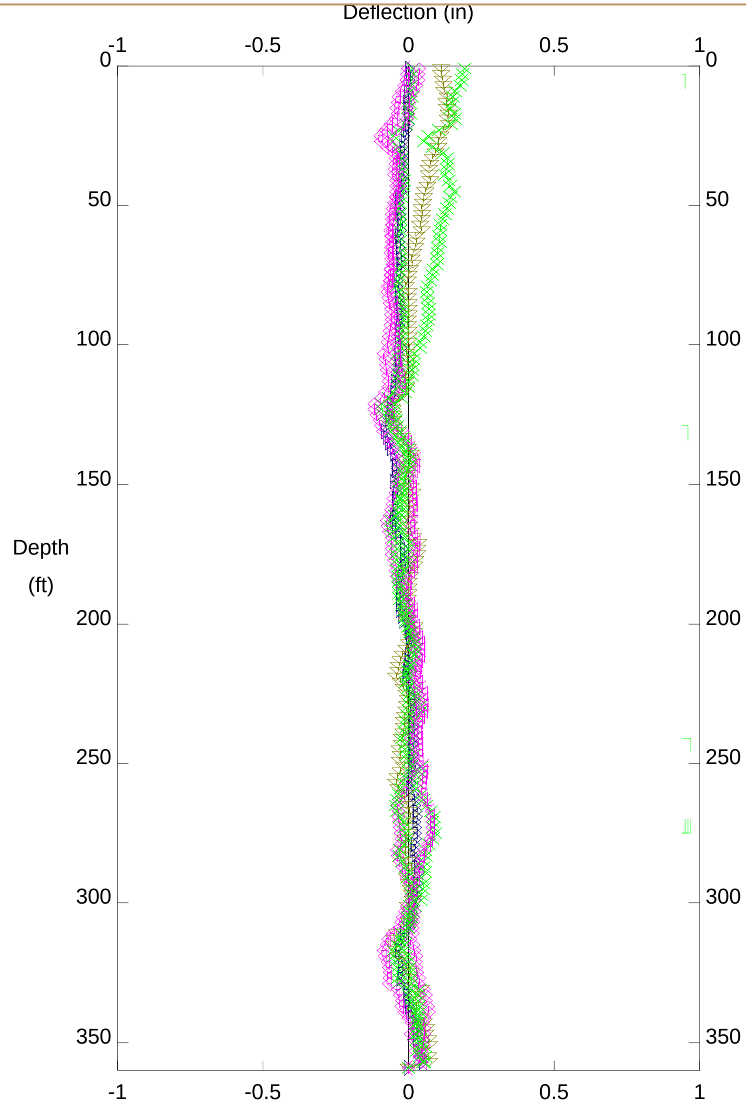
past movement at 245 feet

BIG ROCK MESA, Inclinometer SP-28

BLUFF REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-11a



Cumulative Deflection
Direction B

past movement at 245 feet

LEGEND

Initial 13 Dec 2006*

15 Nov 2007*

25 Nov 2008*

23 Mar 2010*

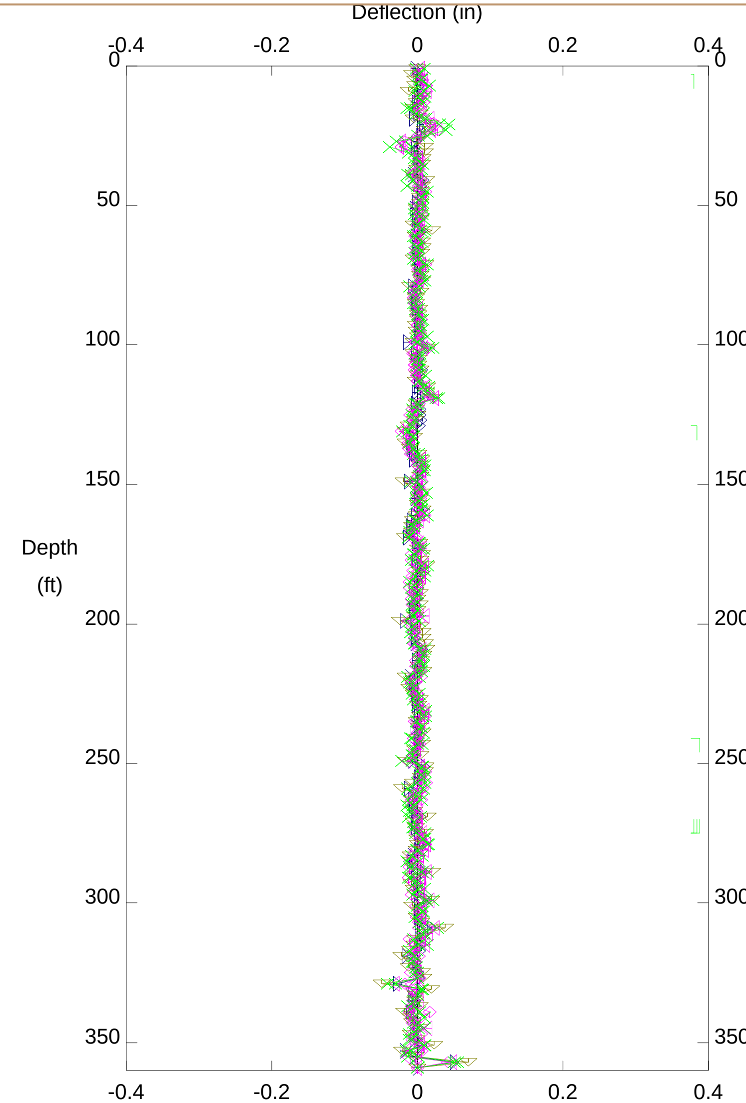
21 Dec 2010*

28 Dec 2011*

21 Jul 2014*

Previous Movement 250'

Ref. Elevation 270 ft



Incremental Deflection
Direction B

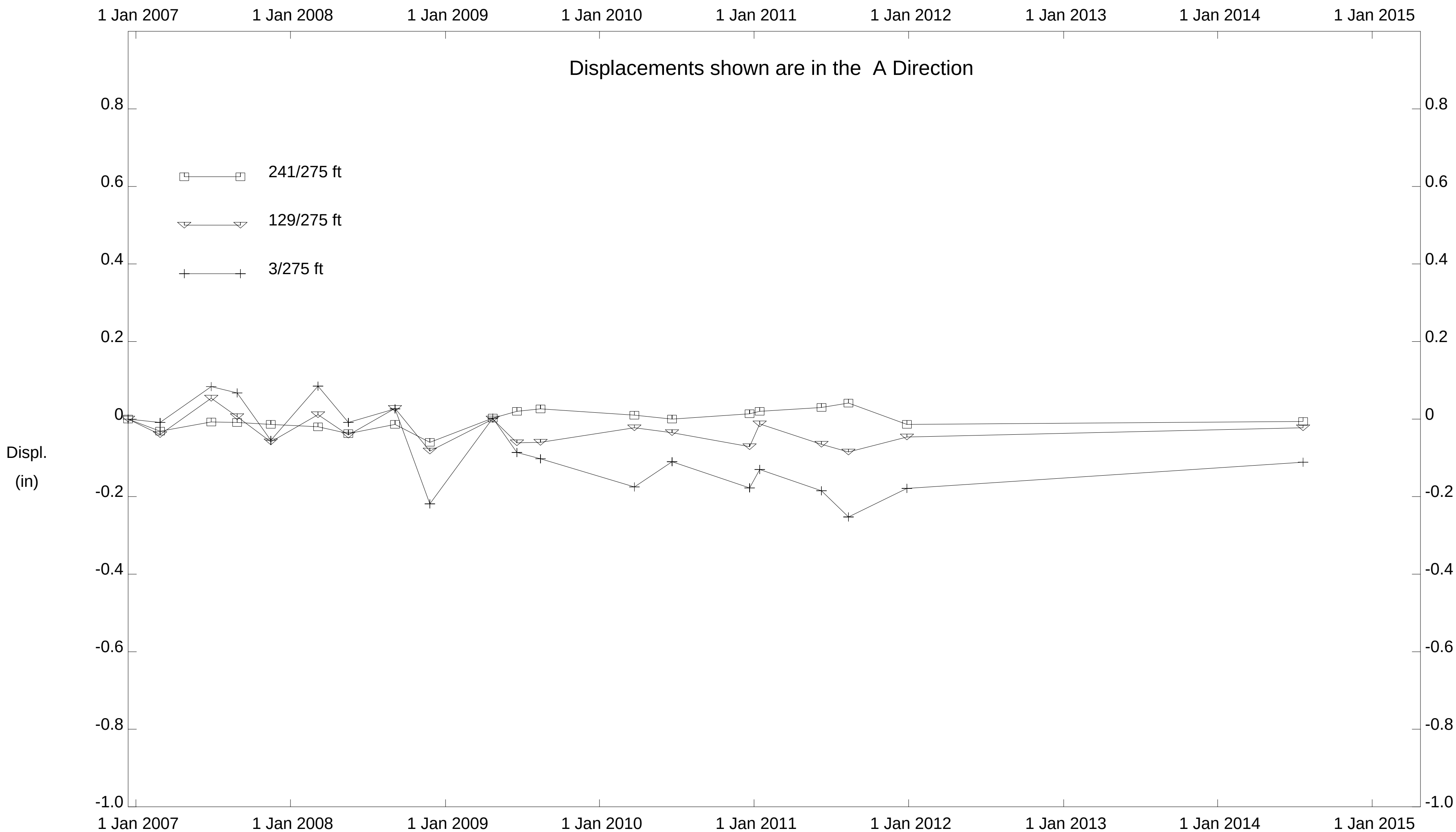
past movement at 245 feet

BIG ROCK MESA, Inclinometer SP-28

BLUFF REGION

Sets marked * include zero shift and/or rotation corrections.

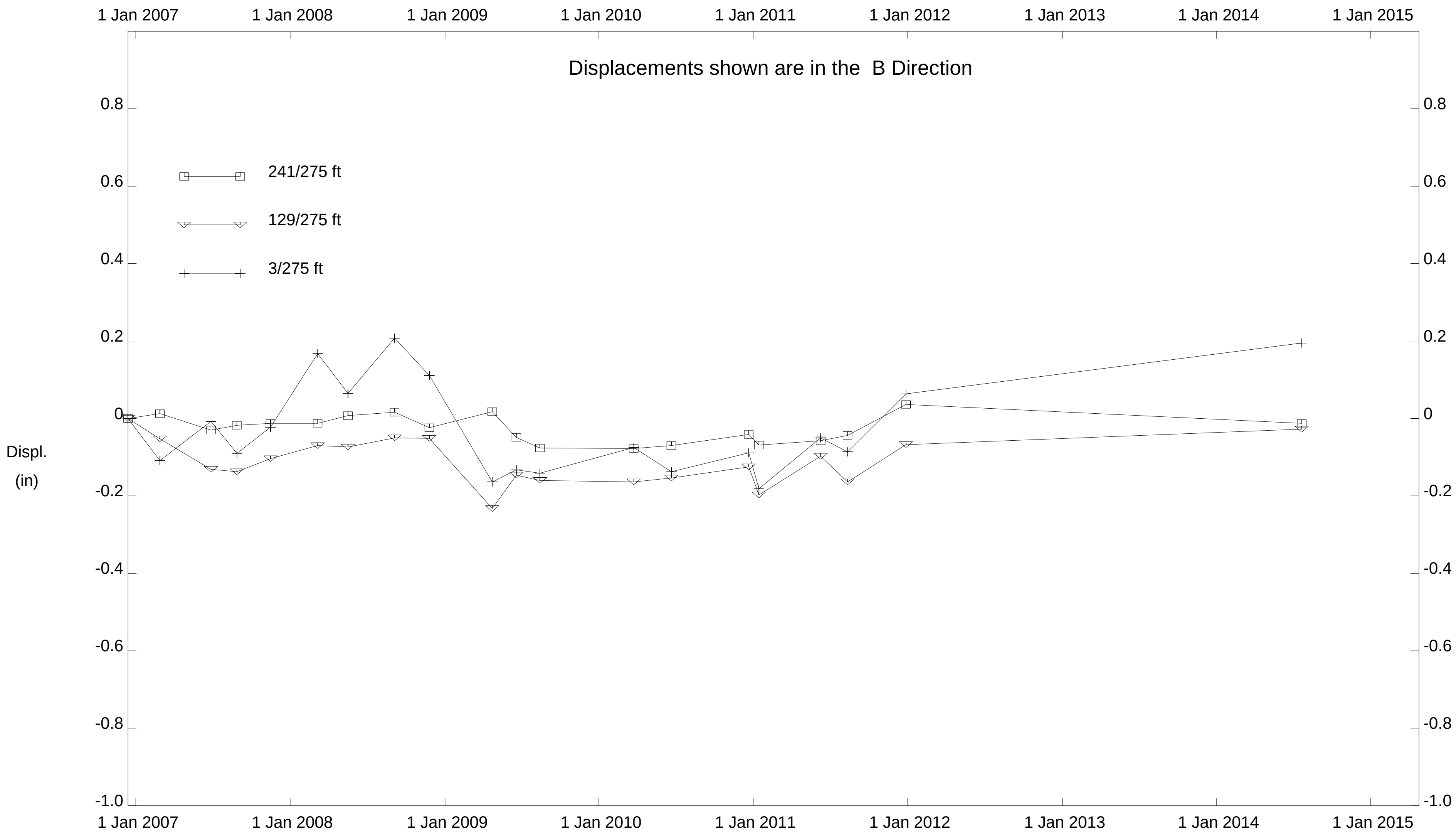
PLATE D-11b



BIG ROCK MESA, Inclinometer SP-28

BLUFF REGION

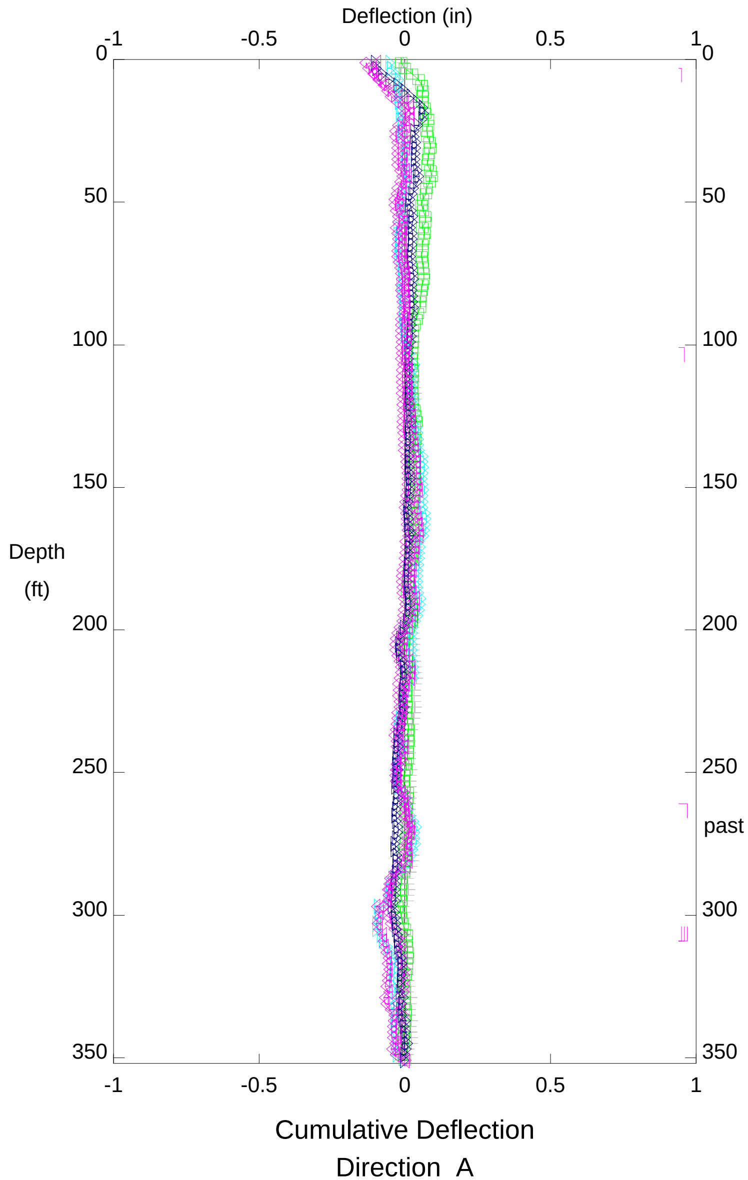
PLATE D-11c

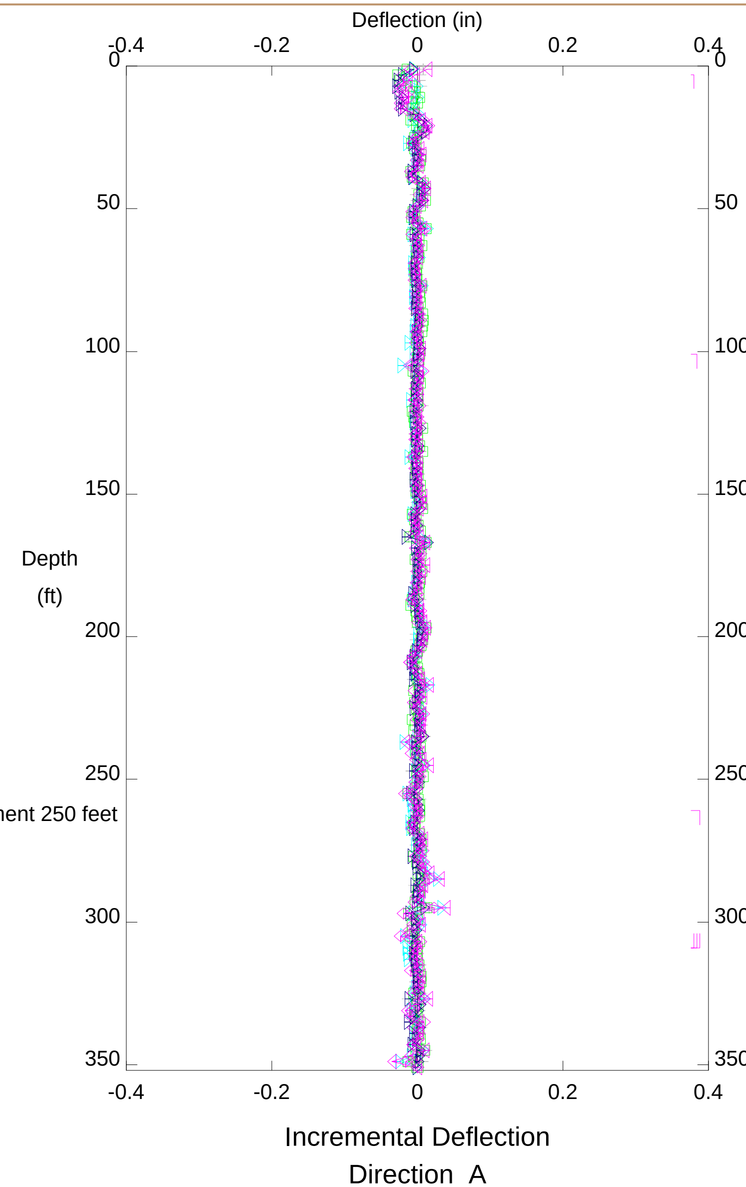


BIG ROCK MESA, Inclinometer SP-28

BLUFF REGION

PLATE D-11d



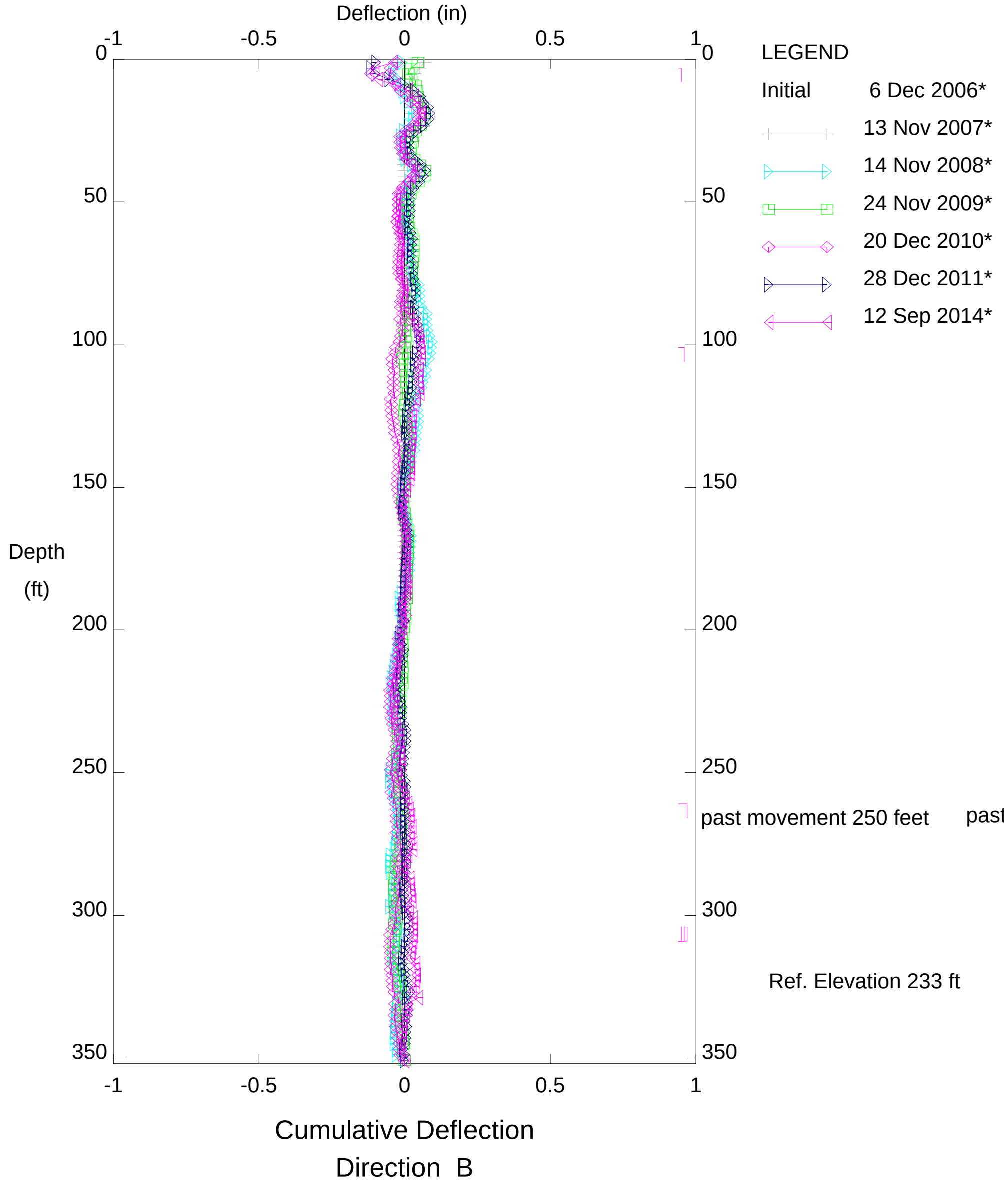


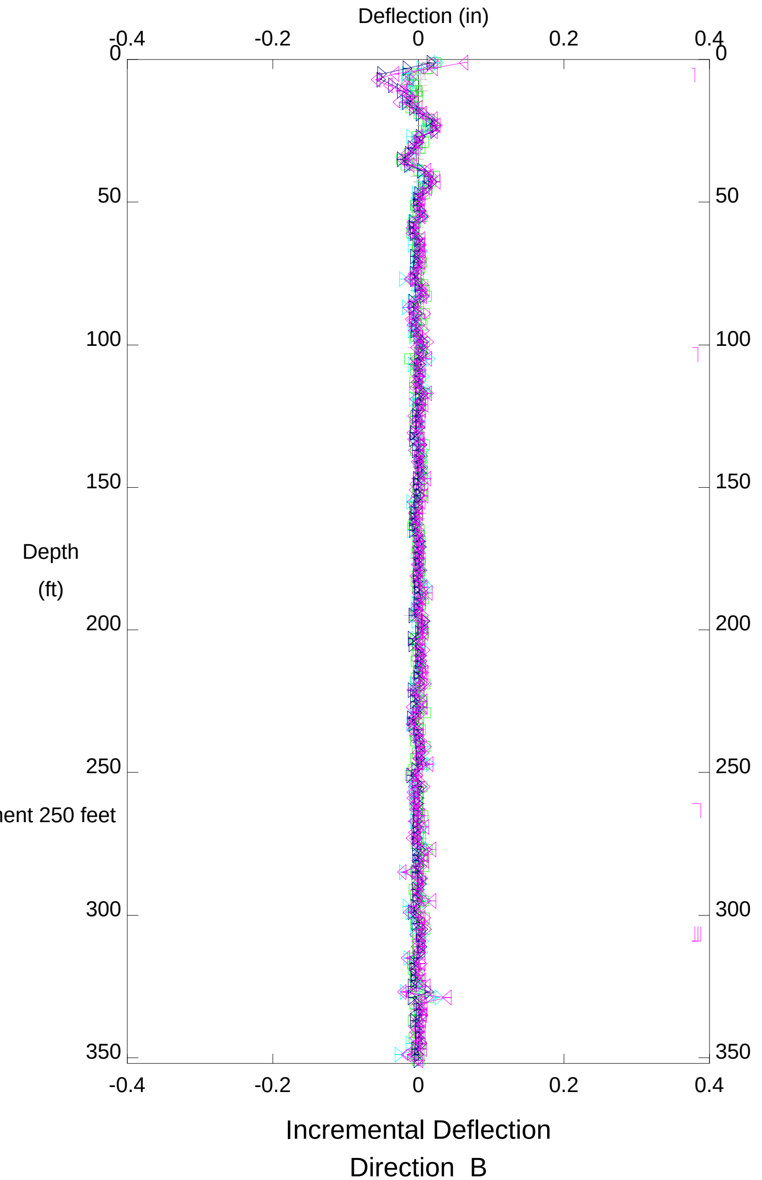
BIG ROCK MESA, Inclinometer SP-32

BLUFF REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-12a





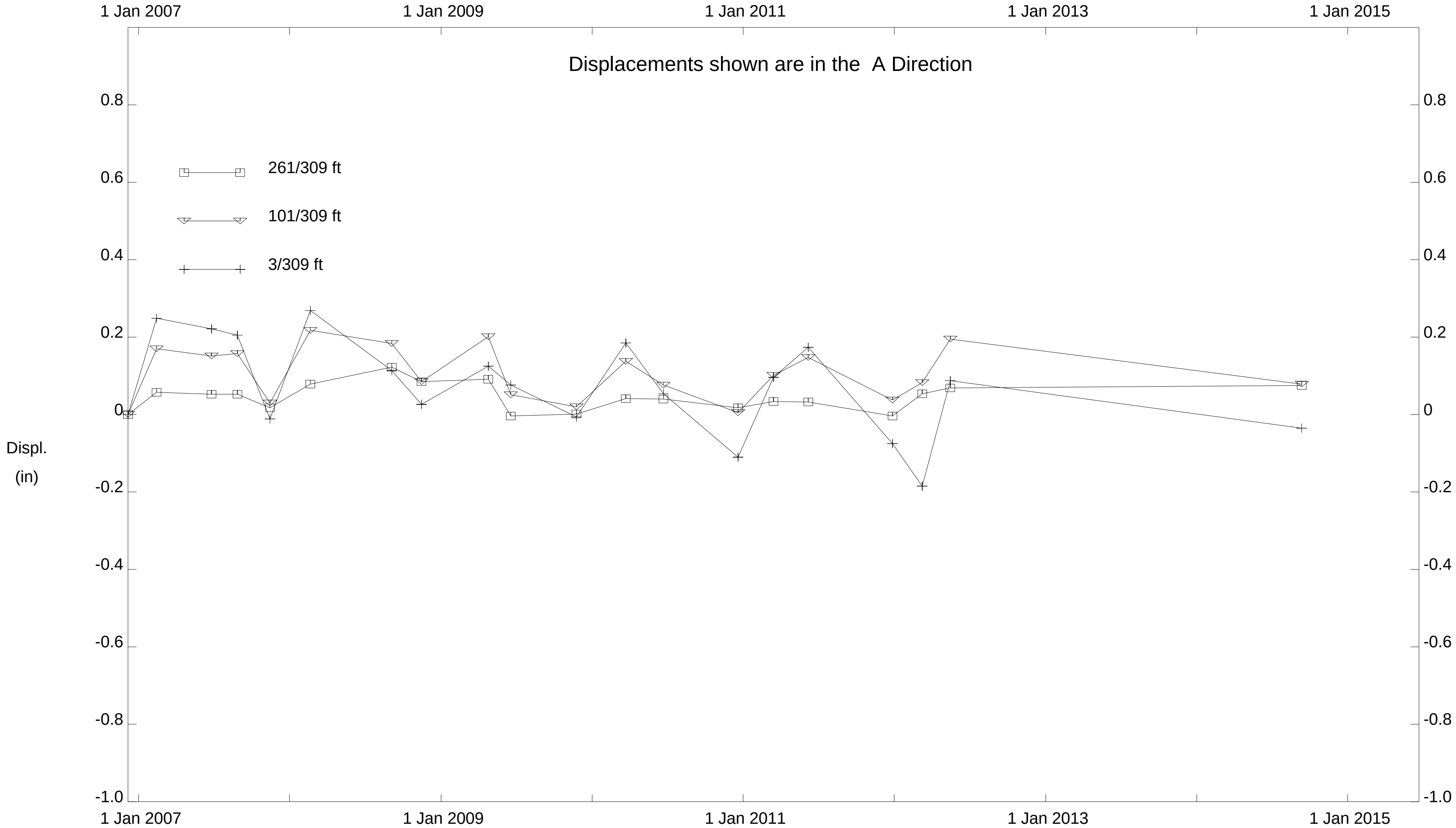
BIG ROCK MESA, Inclinometer SP-32

BLUFF REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-12b

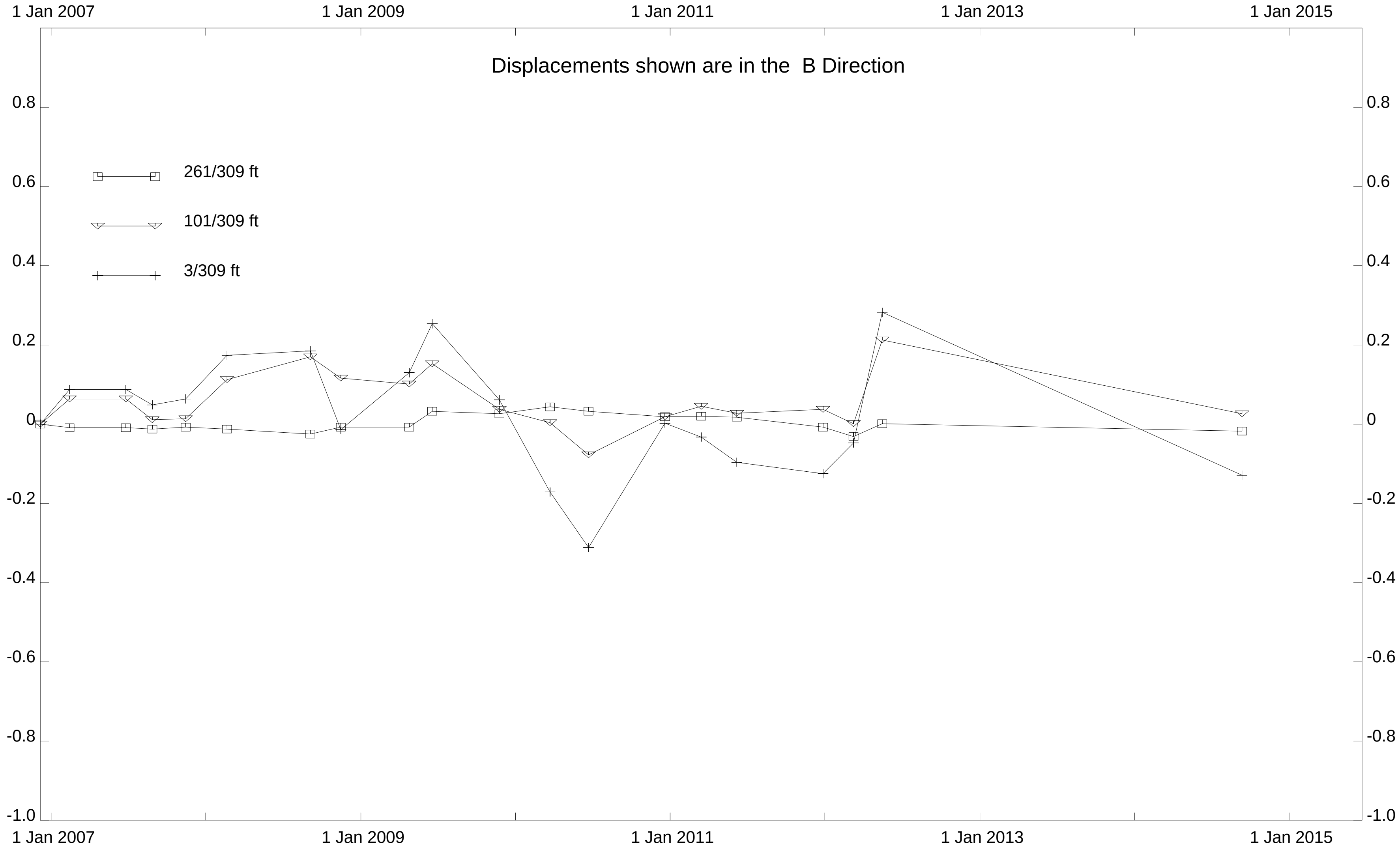
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-32

BLUFF REGION

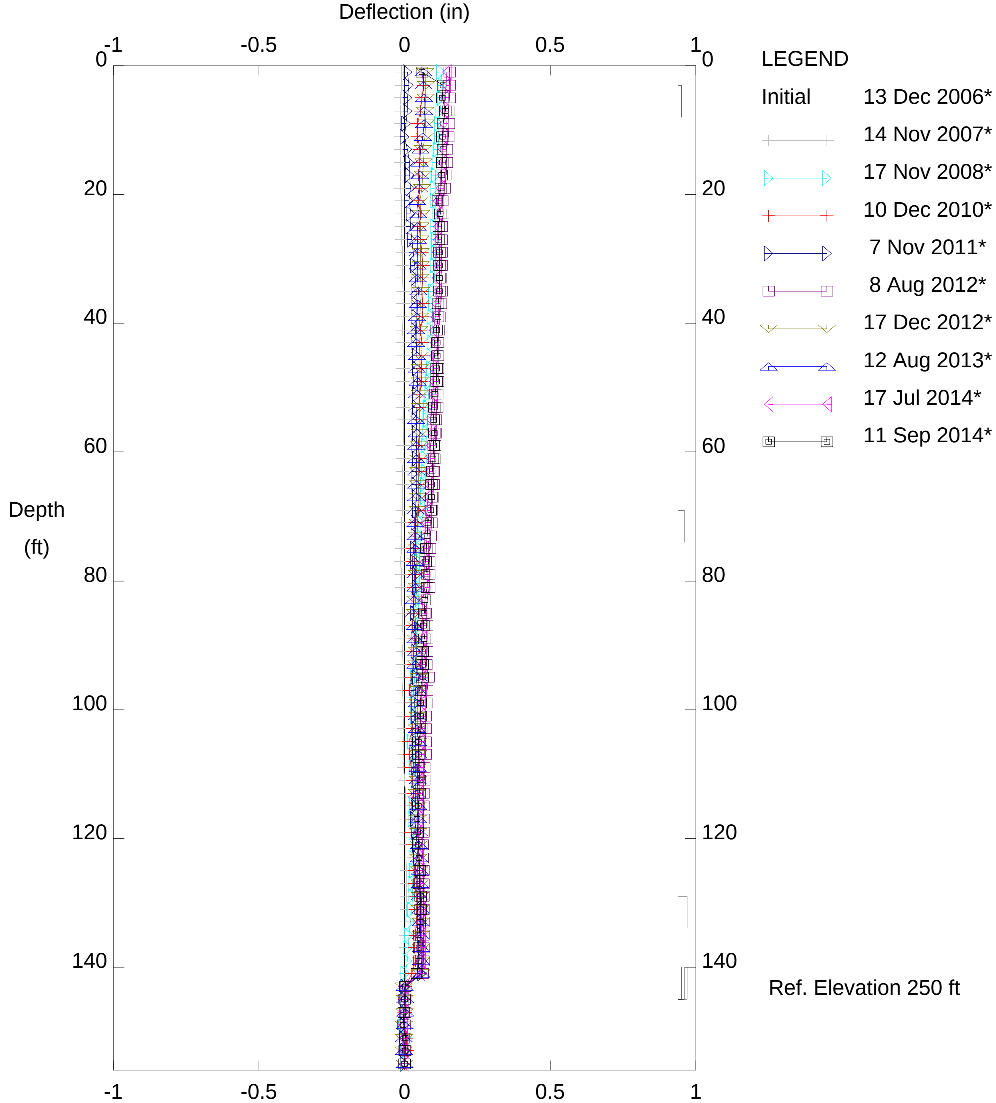
PLATE D-12c



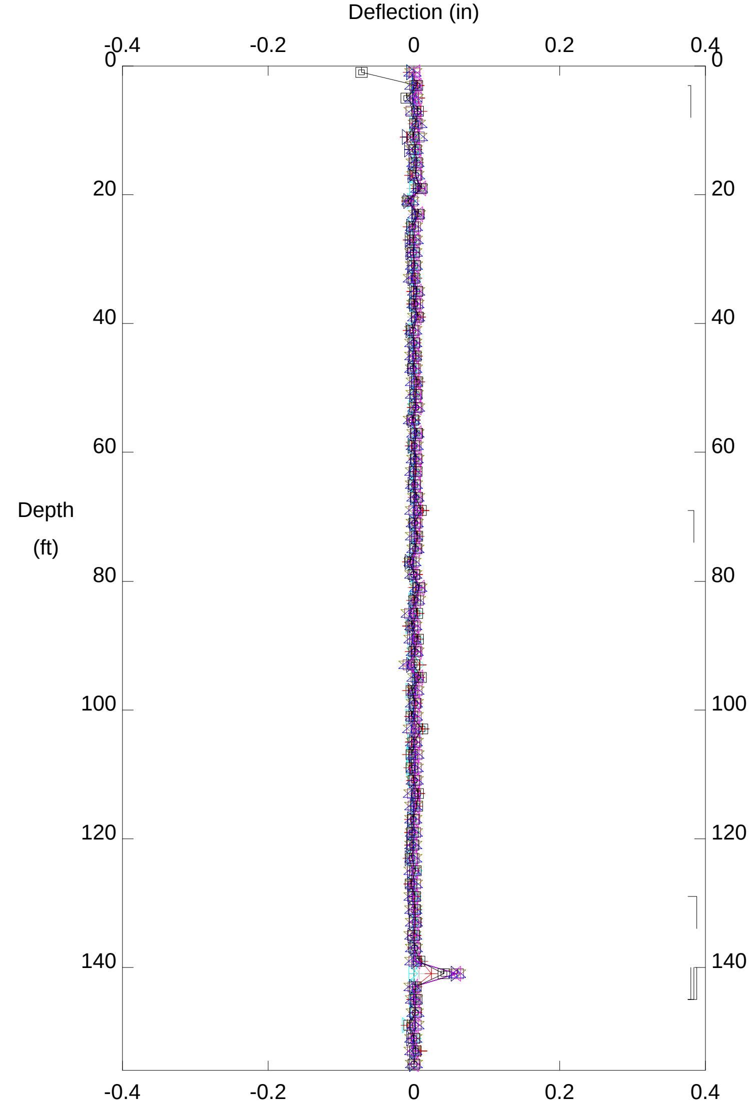
BIG ROCK MESA, Inclinometer SP-32

BLUFF REGION

Fugro Consultants, Inc. - Ventura, CA



Cumulative Deflection
Direction A



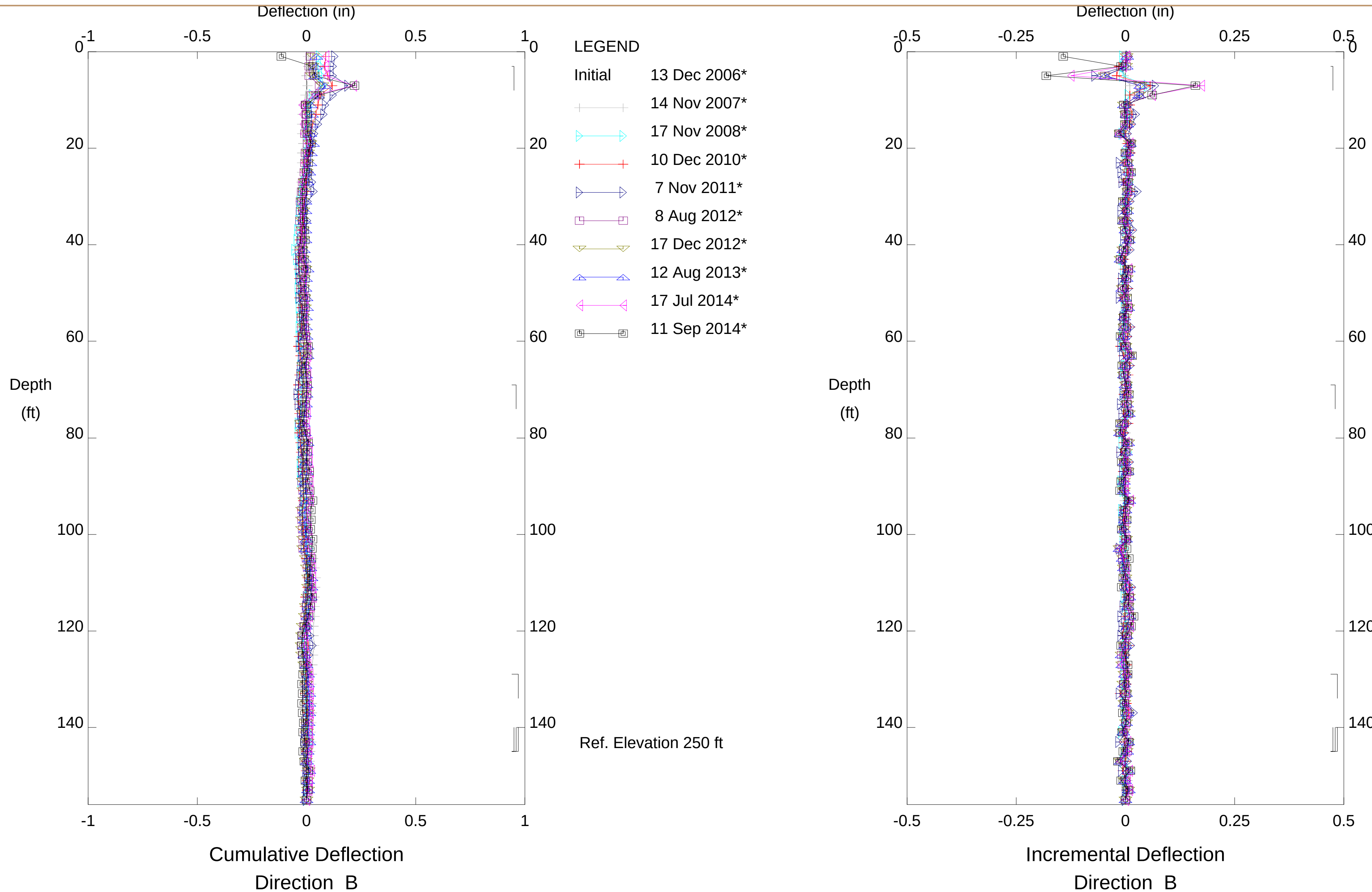
Incremental Deflection
Direction A

BIG ROCK MESA, Inclinometer PC-1

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-13a

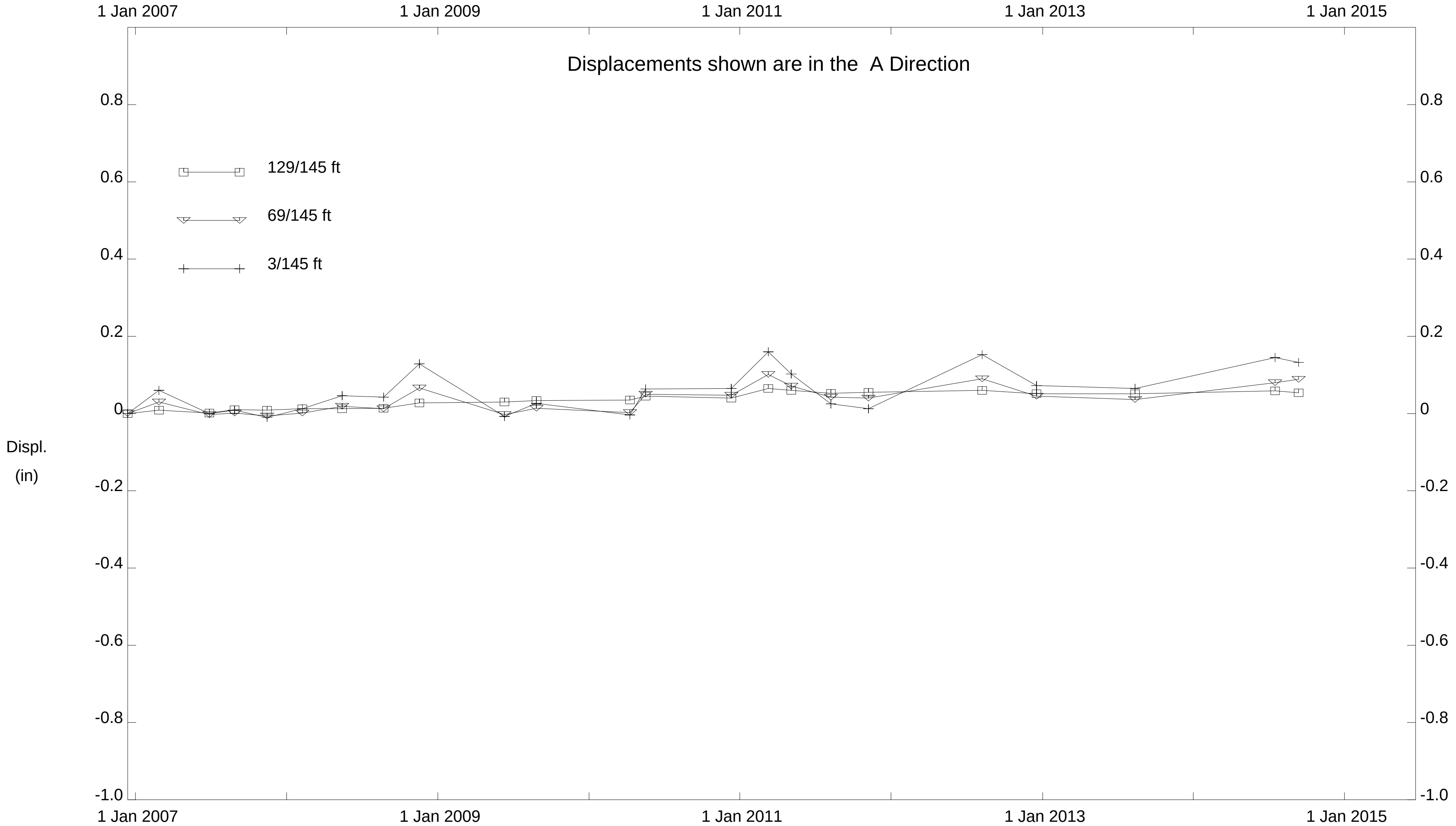


BIG ROCK MESA, Inclinometer PC-1

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

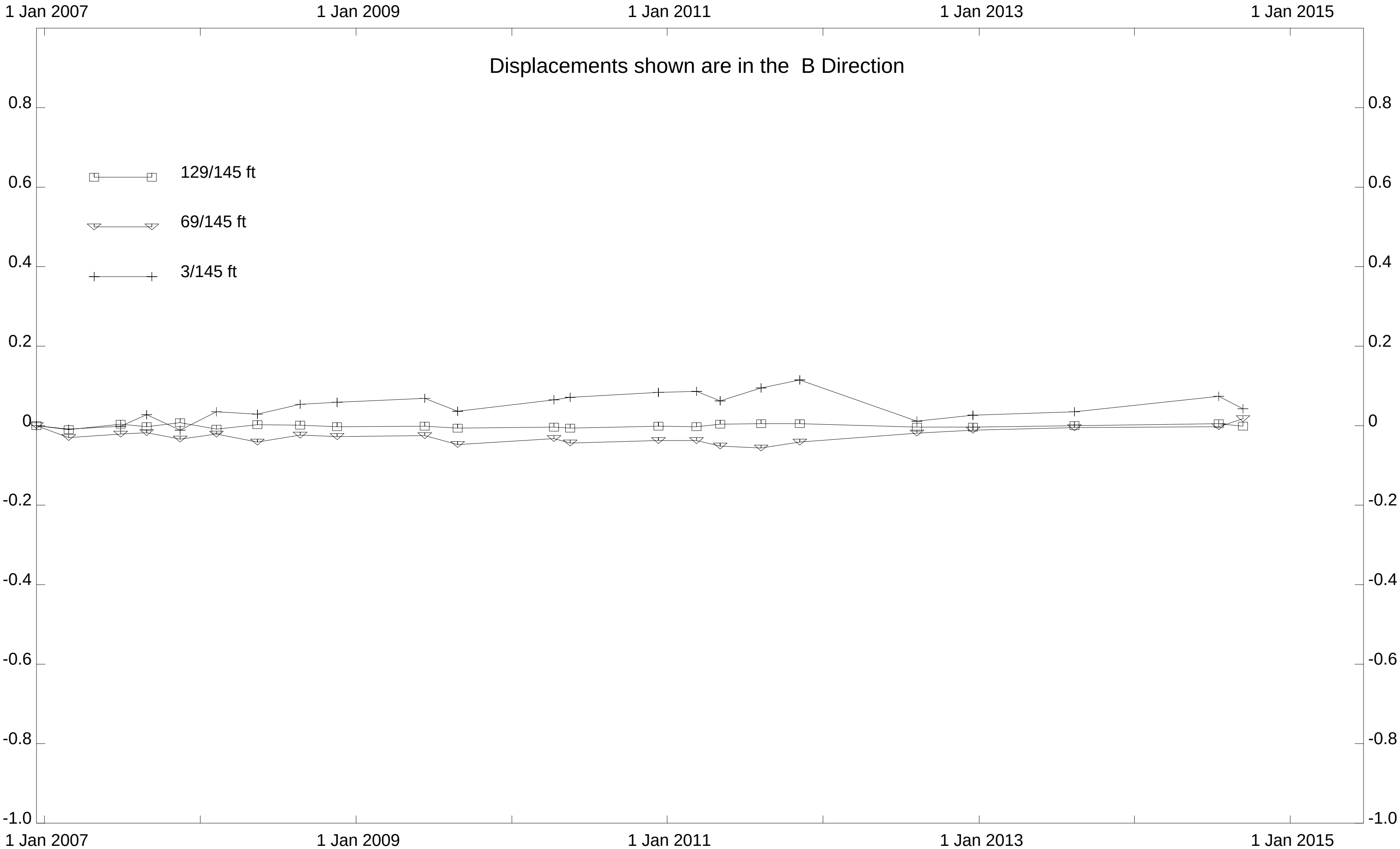
PLATE D-13b



BIG ROCK MESA, Inclinometer PC-1

EASTERN REGION

PLATE D-13c

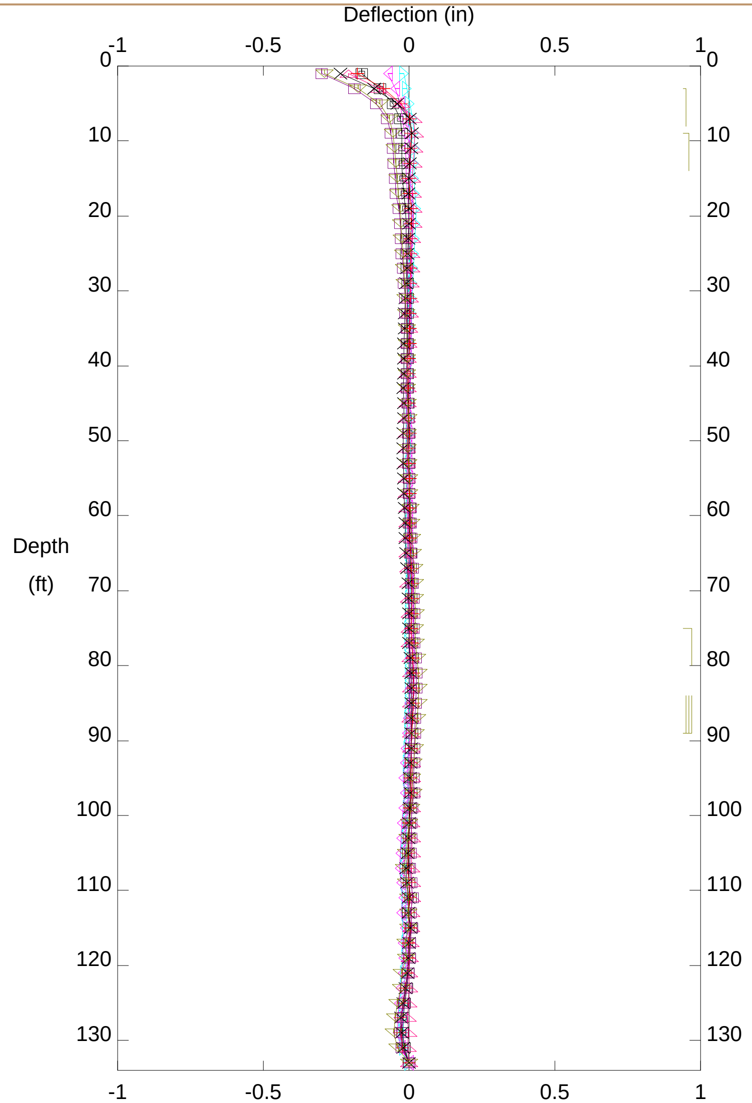


BIG ROCK MESA, Inclinometer PC-1

EASTERN REGION

PLATE D-13d

Fugro Consultants, Inc. - Ventura, CA

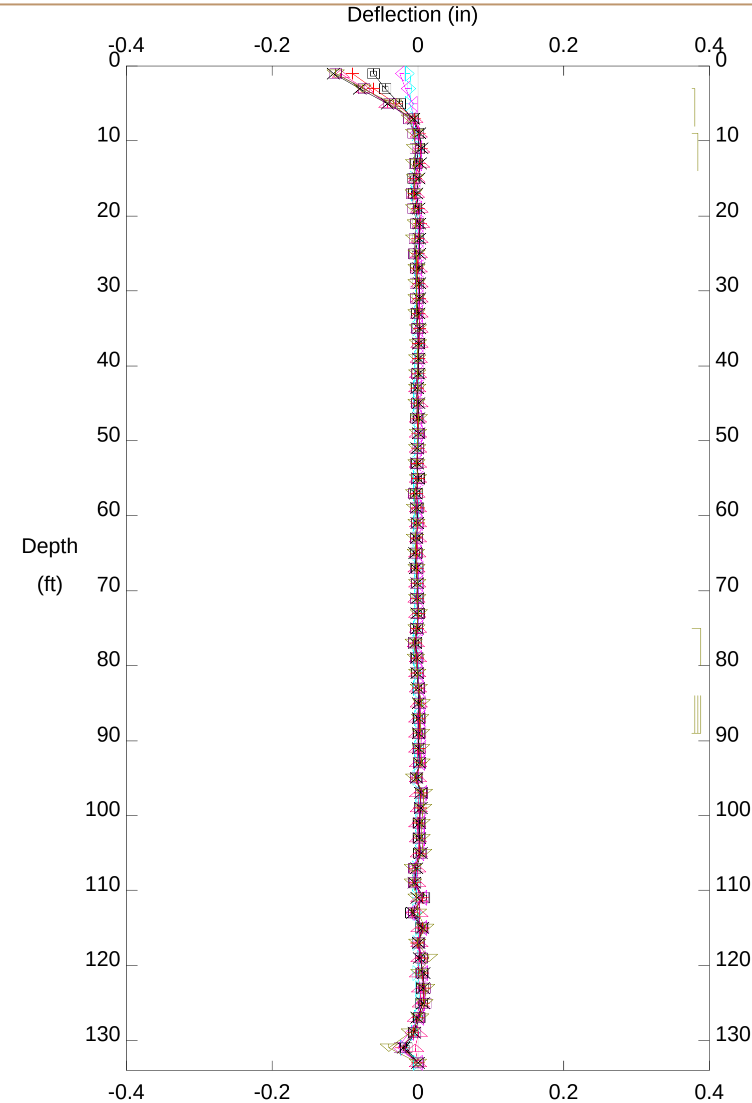


Cumulative Deflection
Direction A

LEGEND

Initial	6 Dec 2006
	15 Nov 2007*
	25 Nov 2008*
	10 Jun 2009*
	13 Dec 2010*
	7 Nov 2011*
	15 May 2012*
	22 Jul 2014*
	15 Sep 2014*

Ref. Elevation 212 ft



Incremental Deflection
Direction A

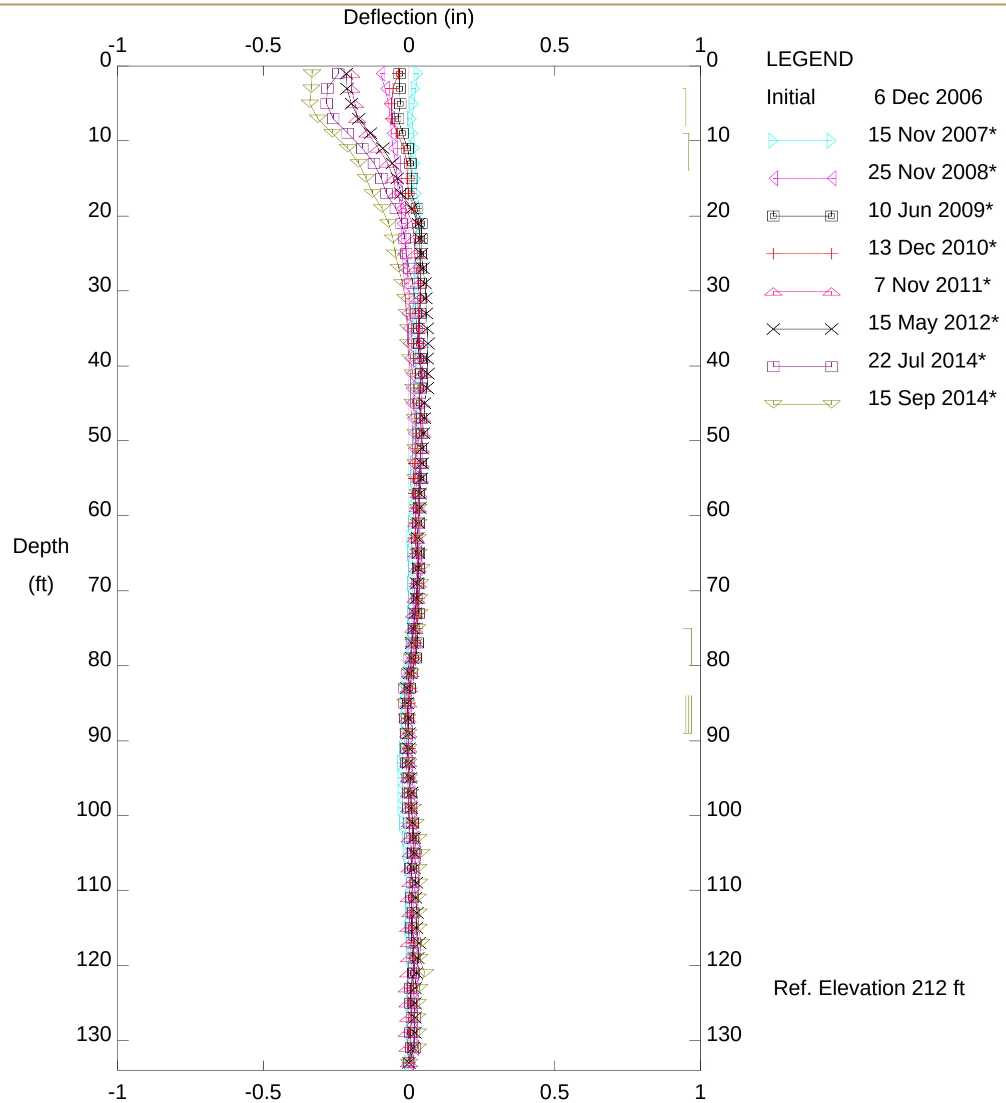
BIG ROCK MESA, Inclinometer SP-3

EASTERN REGION

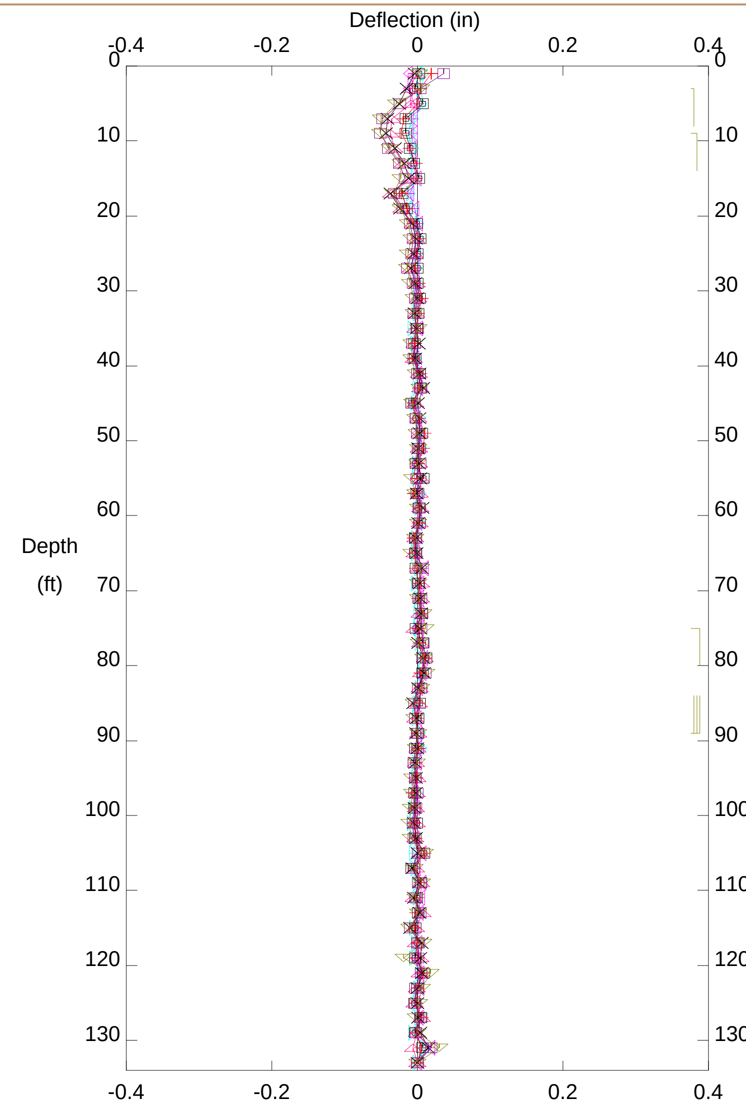
Sets marked * include zero shift and/or rotation corrections.

PLATE D-14a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP3.gtl



Cumulative Deflection
Direction B



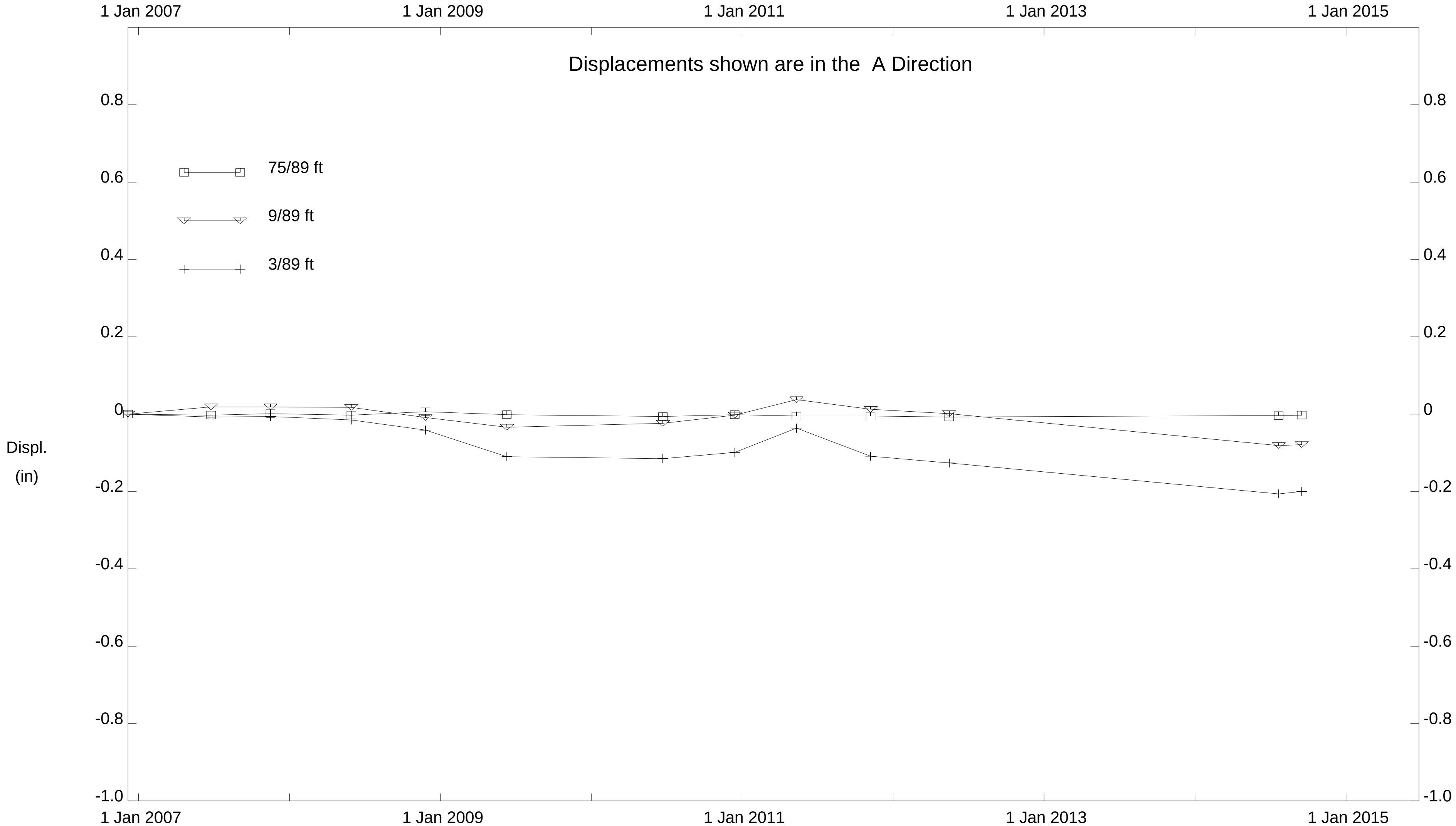
Incremental Deflection
Direction B

BIG ROCK MESA, Inclinometer SP-3

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

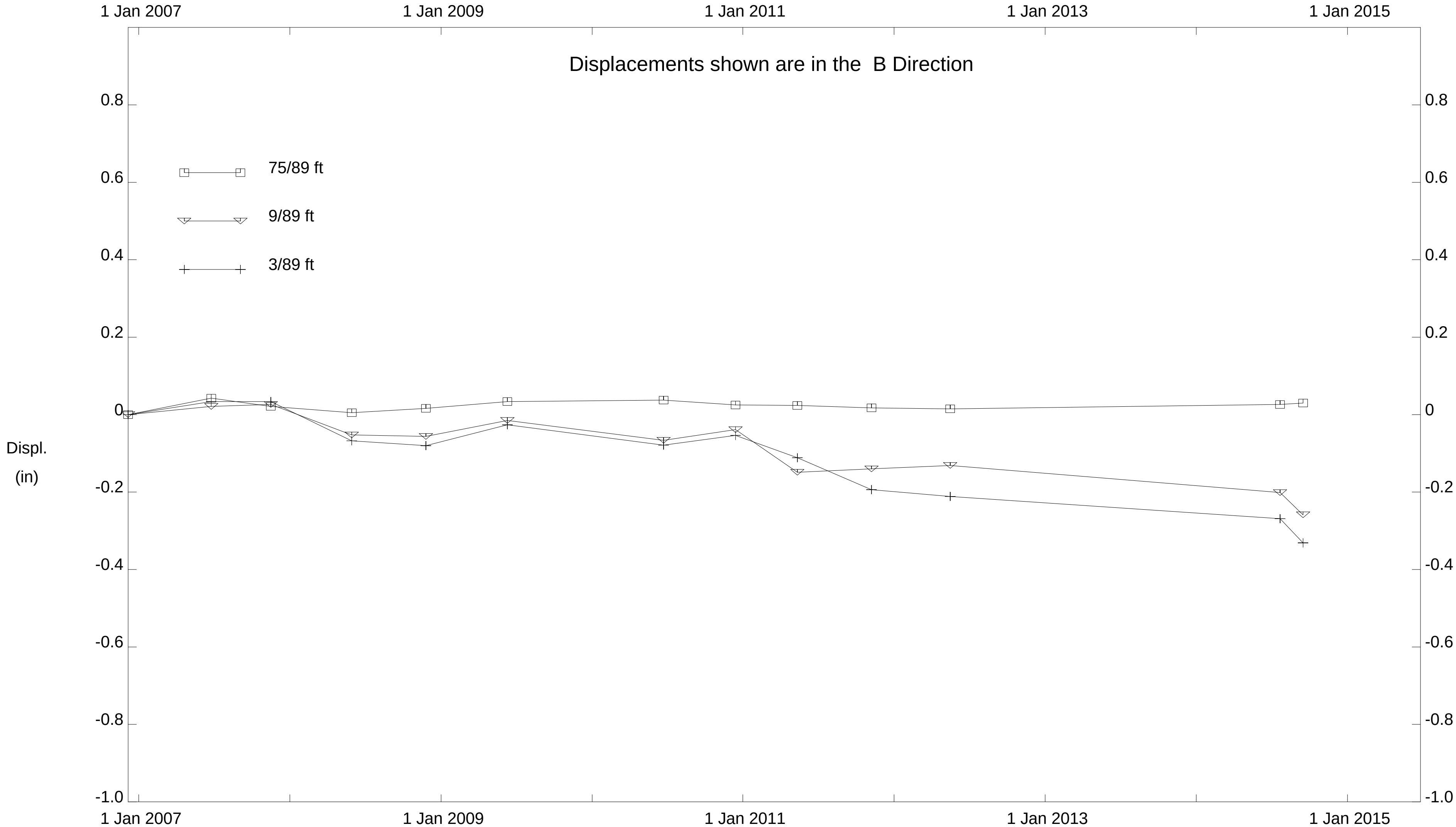
PLATE D-14b



BIG ROCK MESA, Inclinometer SP-3

EASTERN REGION

PLATE D-14c

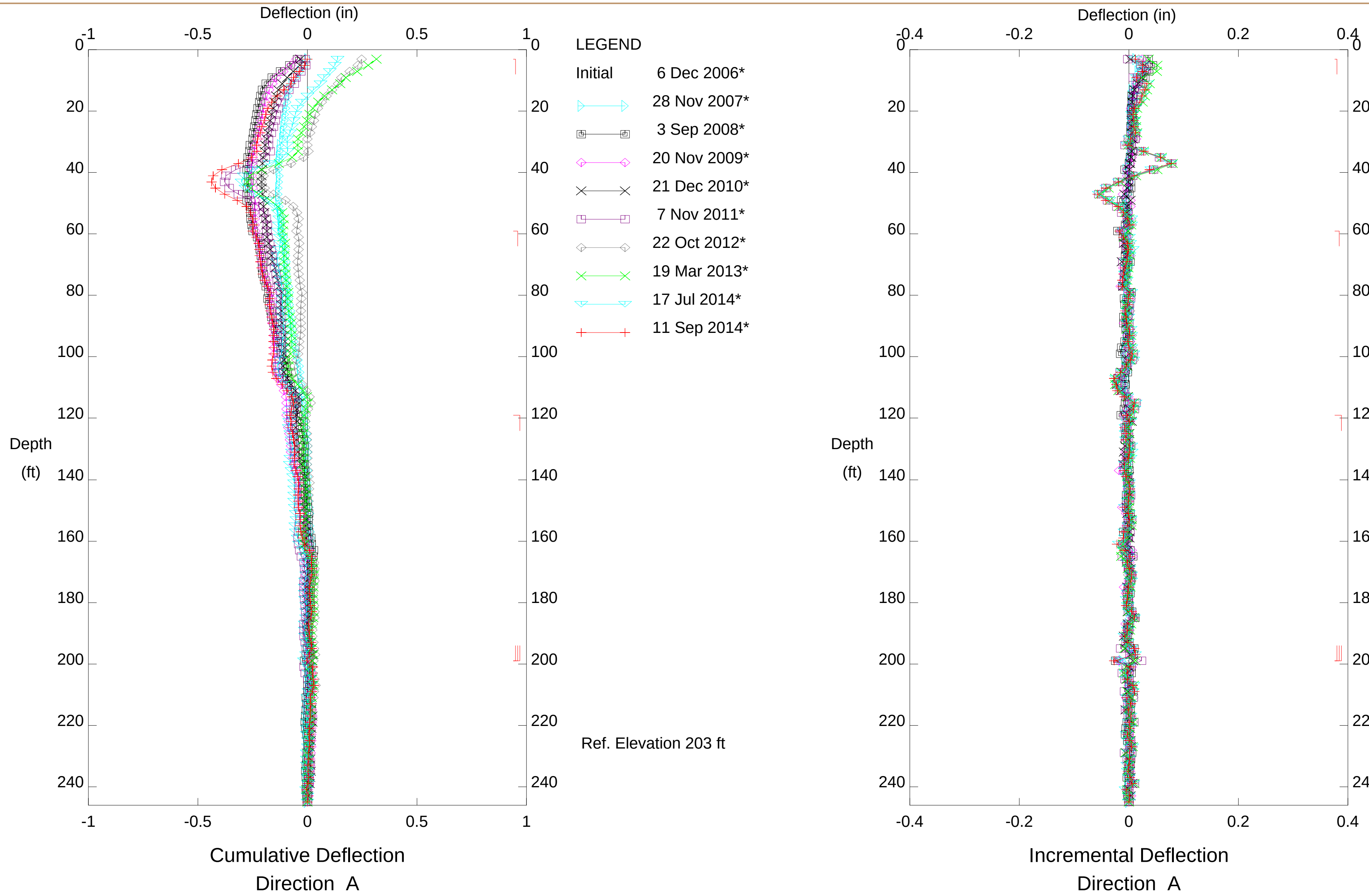


BIG ROCK MESA, Inclinometer SP-3

EASTERN REGION

PLATE D-14d

Fugro Consultants, Inc. - Ventura, CA



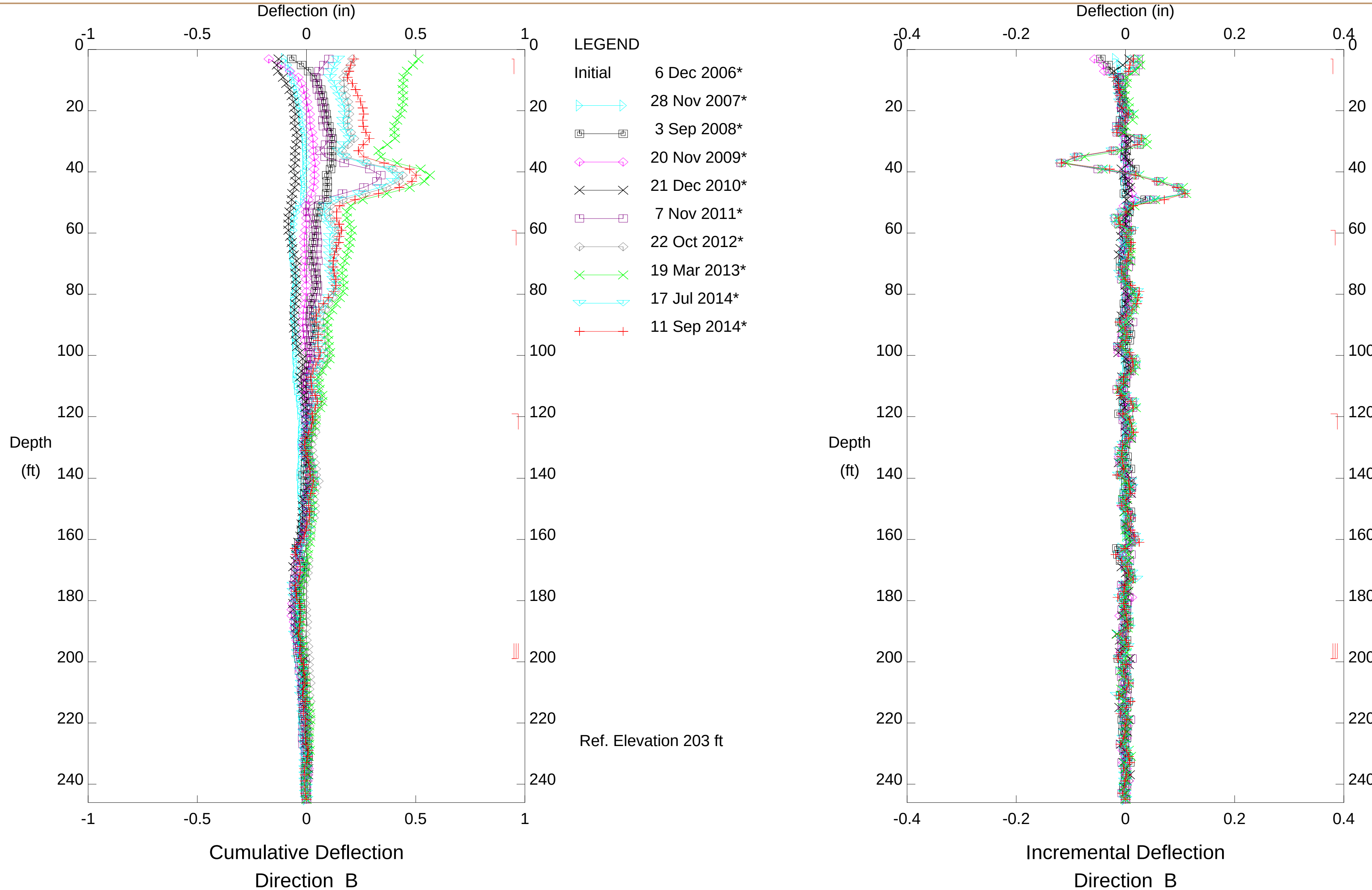
BIG ROCK MESA, Inclinometer SP-3A

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-15a

Fugro Consultants, Inc. - Ventura, CA



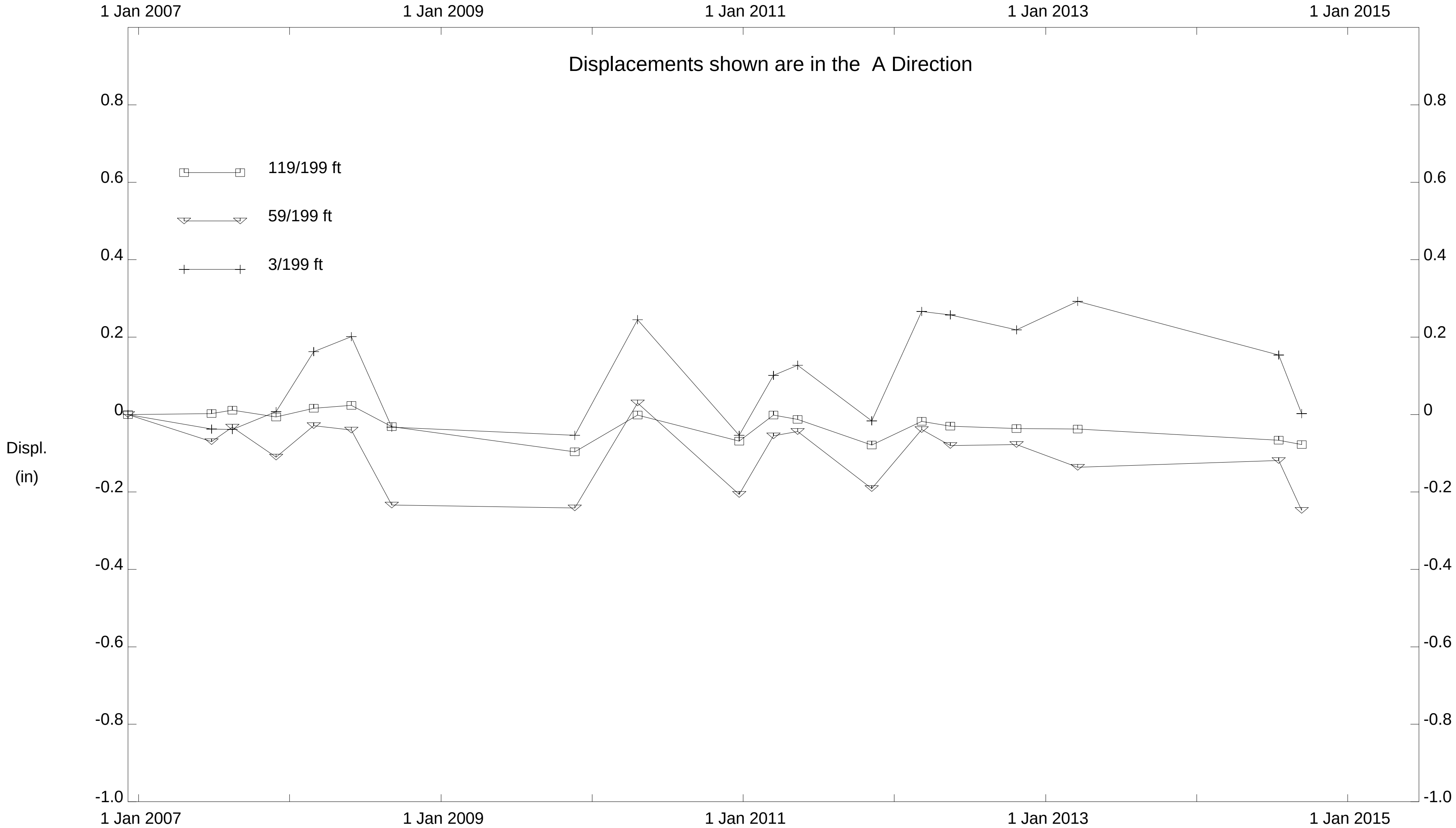
BIG ROCK MESA, Inclinometer SP-3A

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-15b

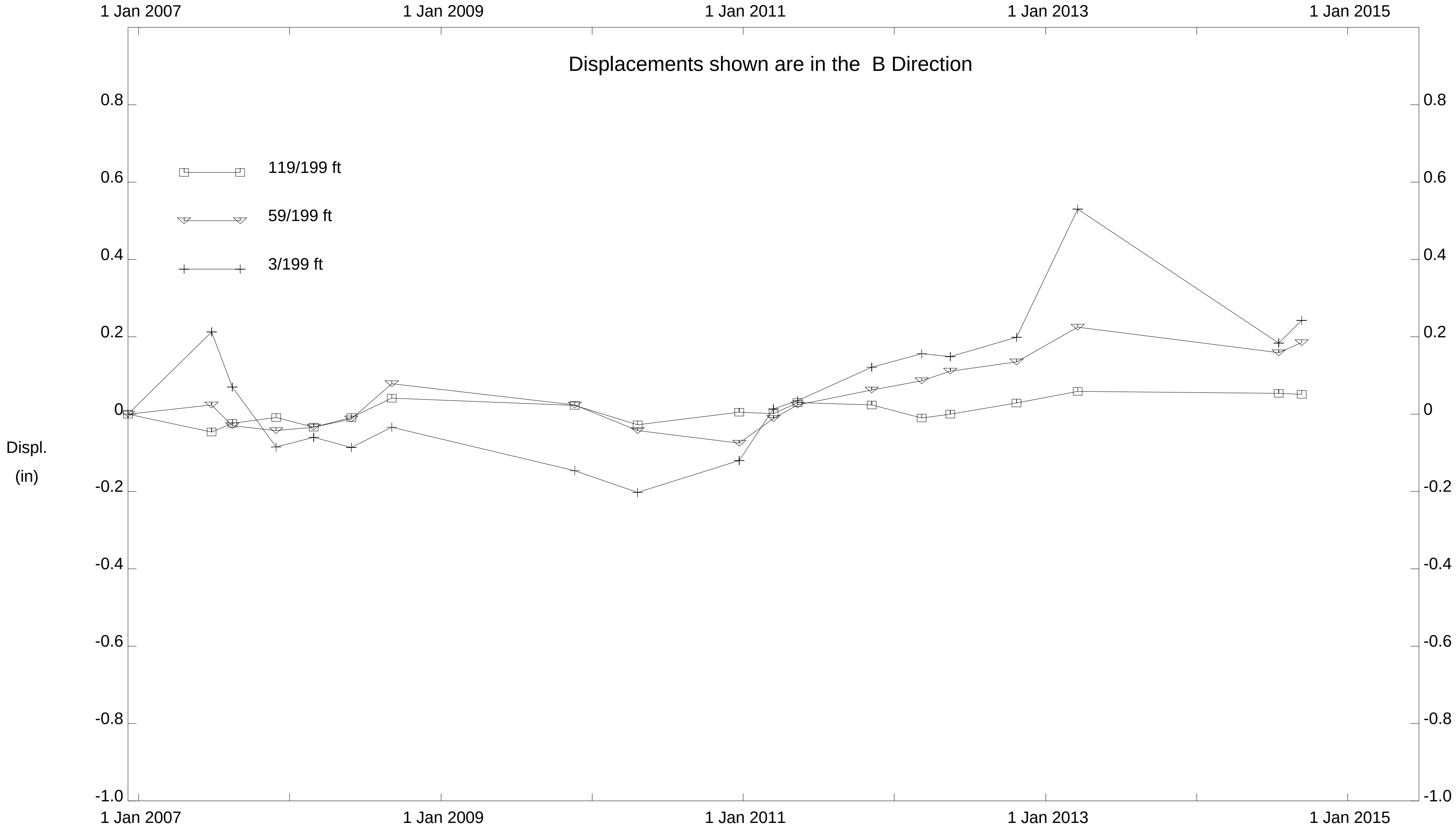
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP3A.gtl



BIG ROCK MESA, Inclinometer SP-3A

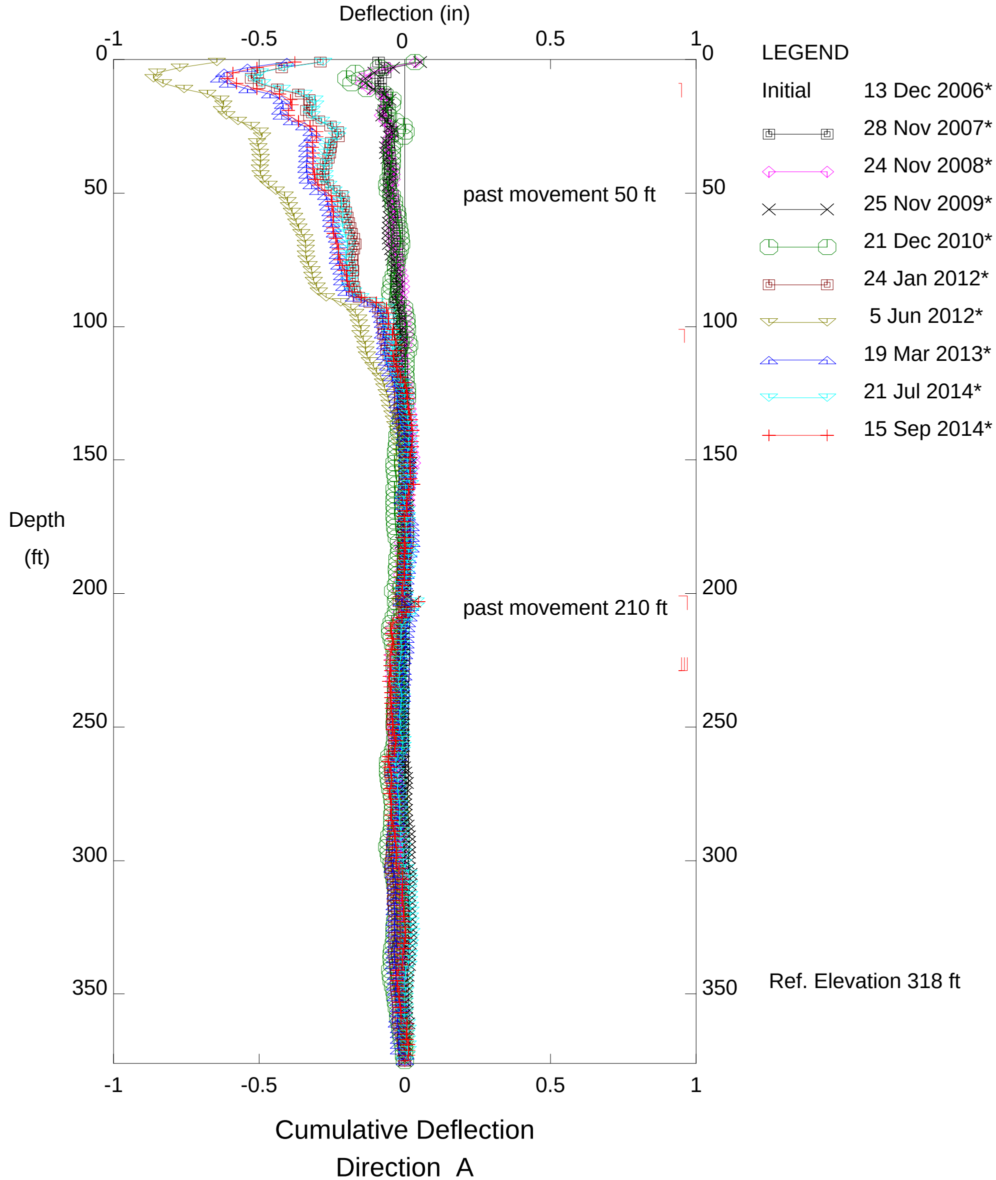
EASTERN REGION

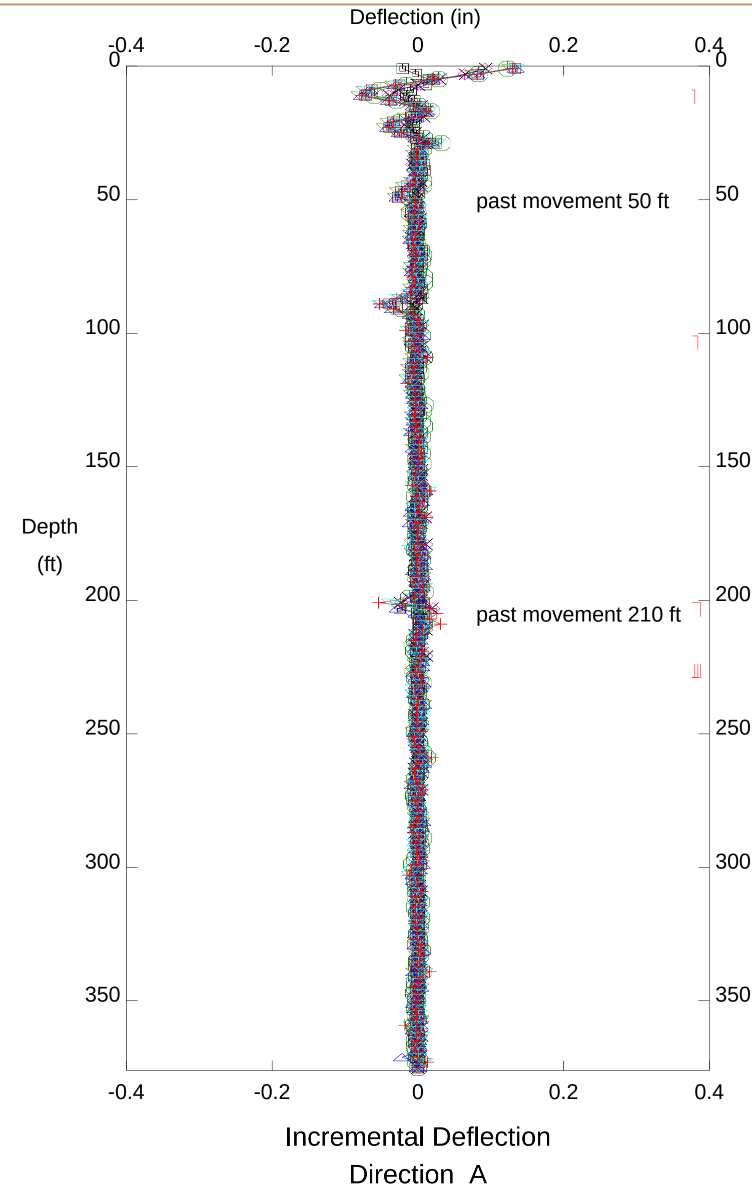
PLATE D-15c



BIG ROCK MESA, Inclinometer SP-3A

EASTERN REGION





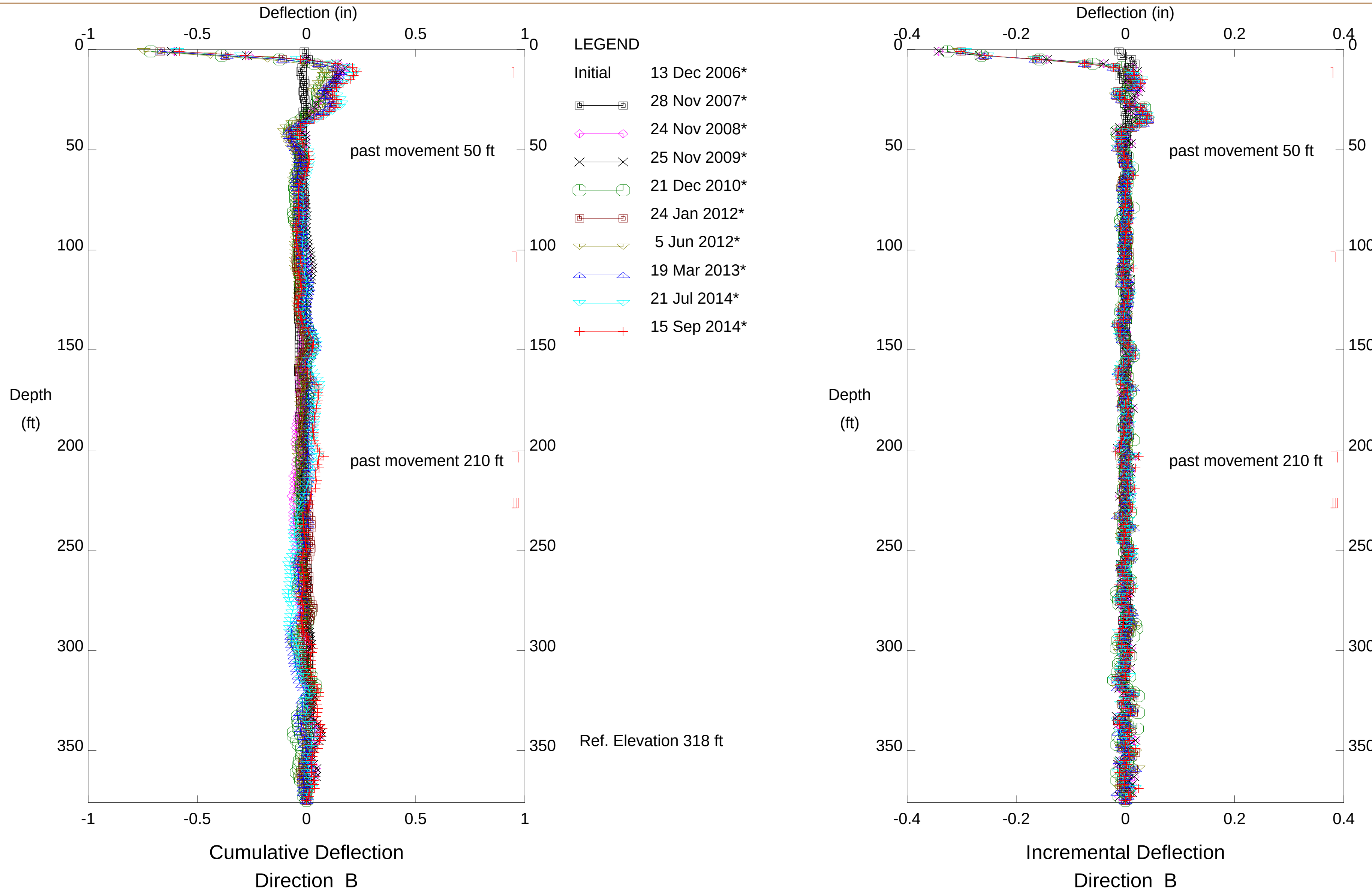
BIG ROCK MESA, Inclinometer SP-33

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-16a

Fugro Consultants, Inc. - Ventura, CA

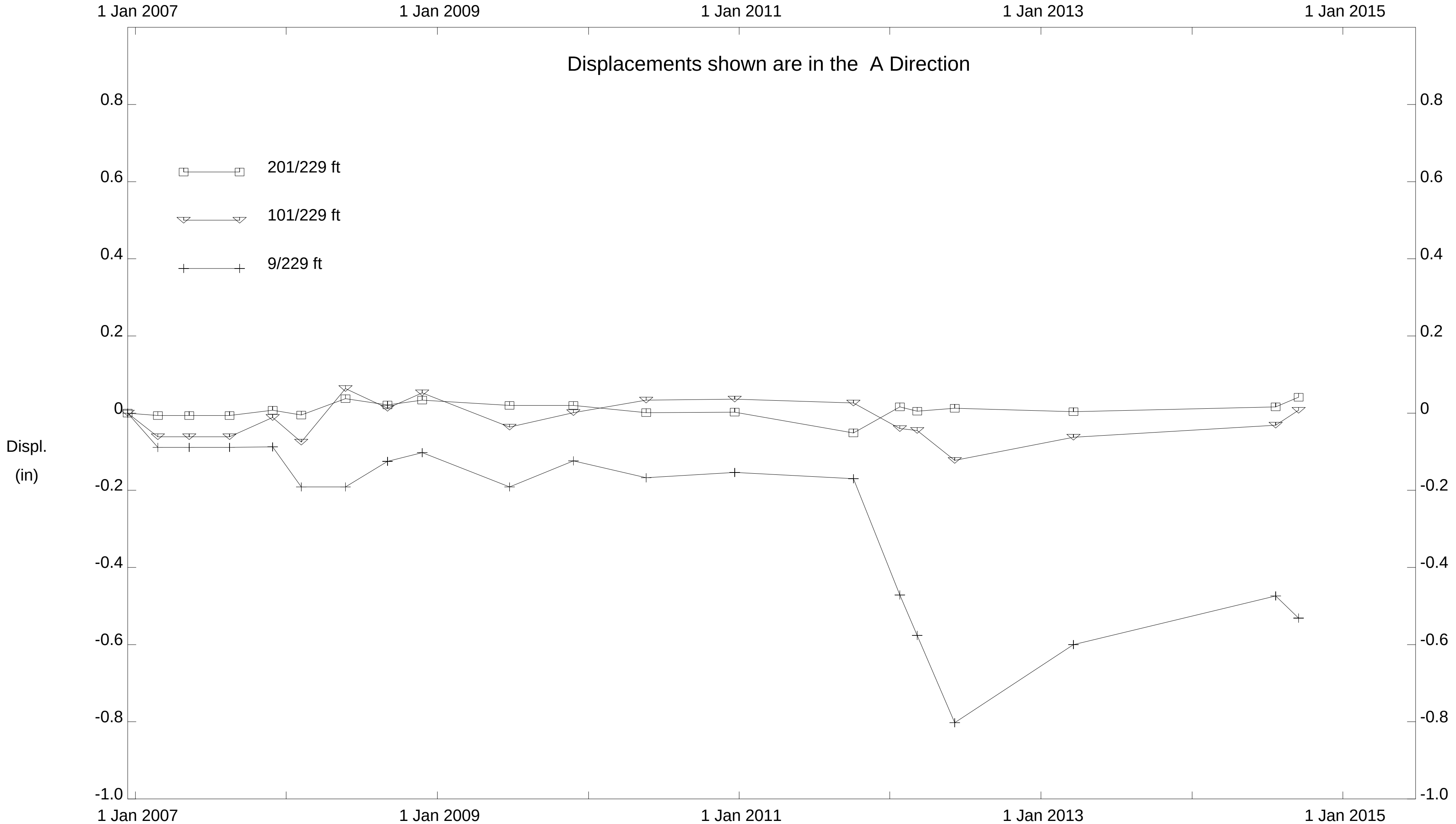


BIG ROCK MESA, Inclinometer SP-33

EASTERN REGION

Sets marked * include zero shift and/or rotation corrections.

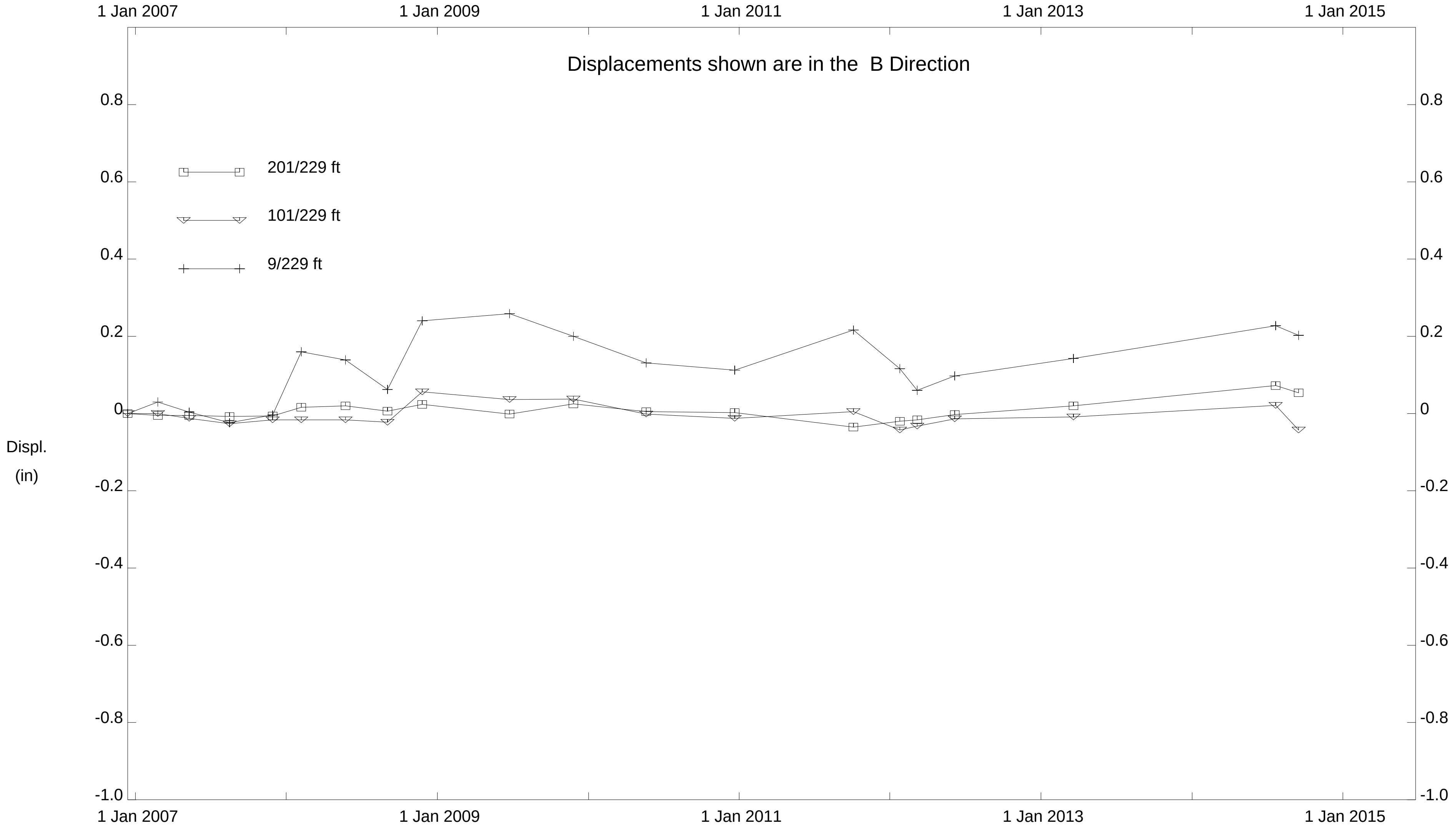
PLATE D-16b



BIG ROCK MESA, Inclinometer SP-33

EASTERN REGION

PLATE D-16c

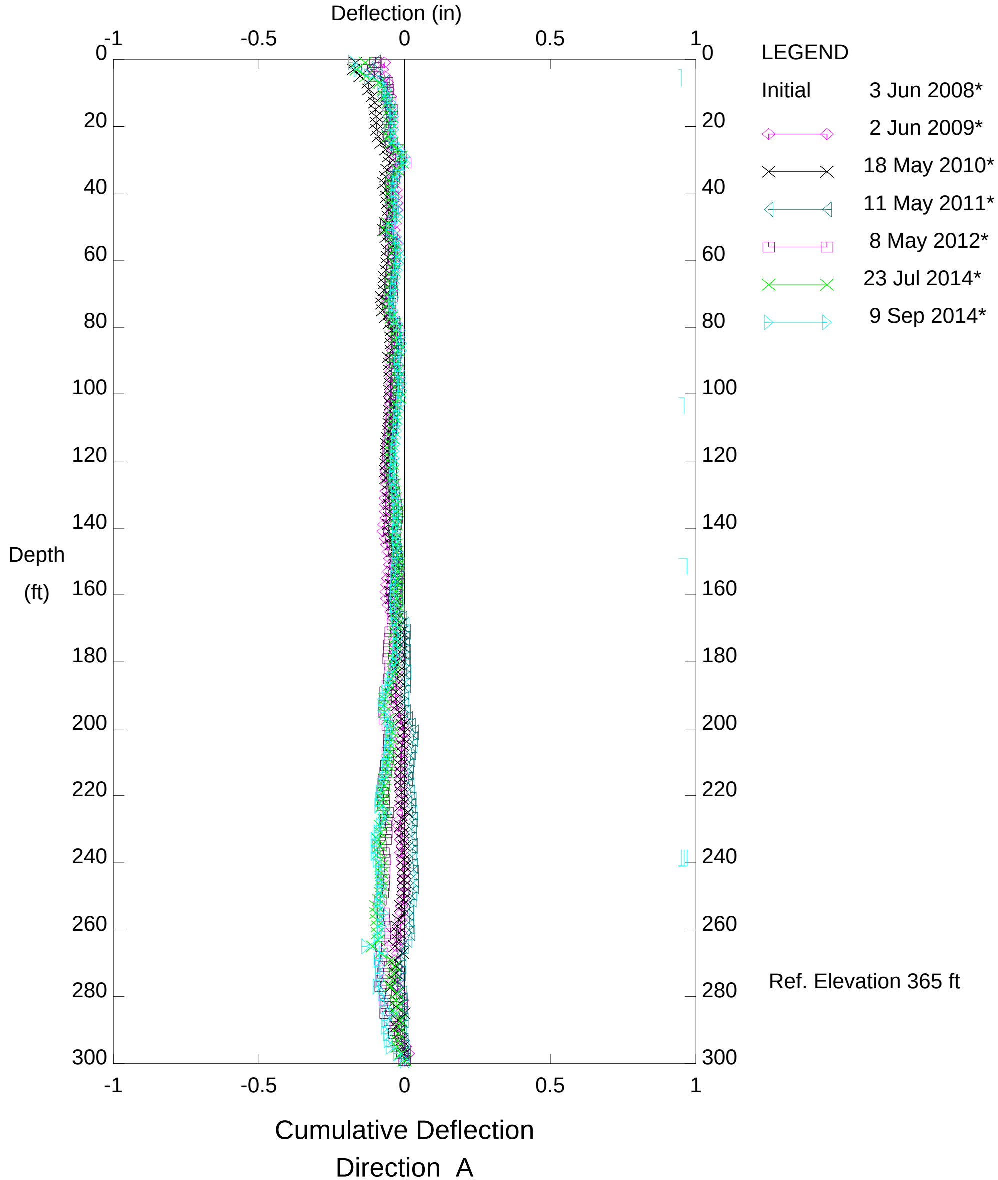


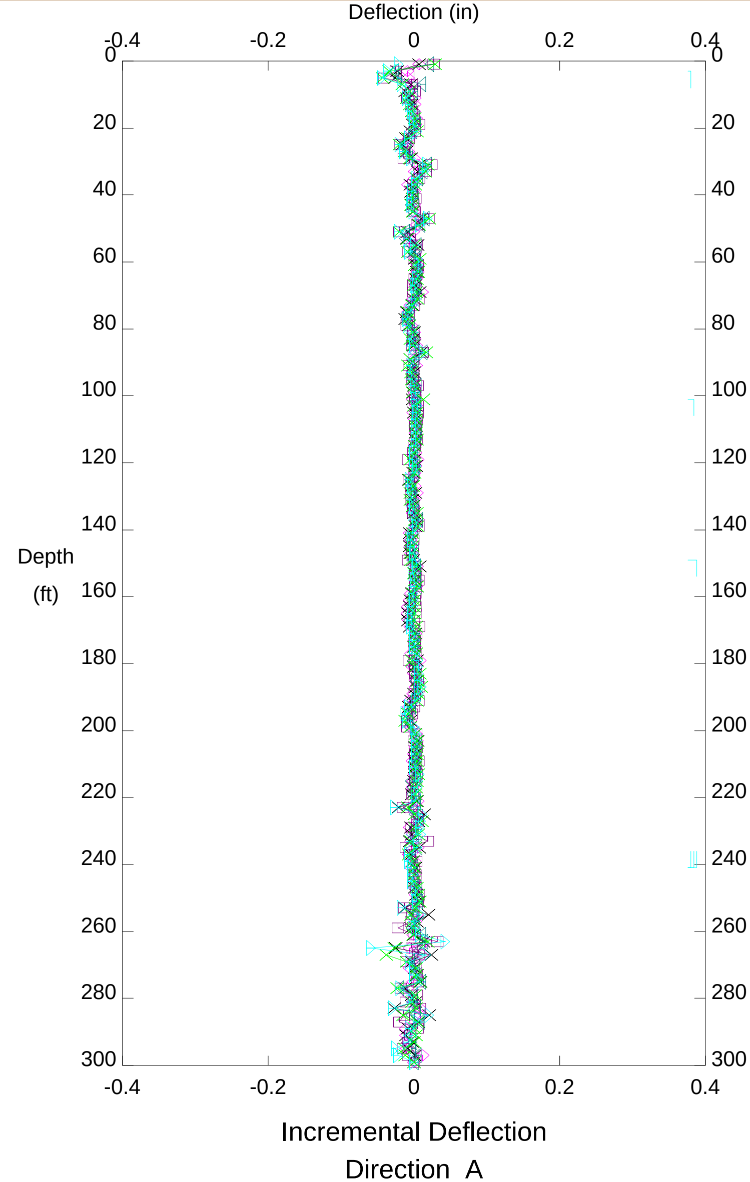
BIG ROCK MESA, Inclinometer SP-33

EASTERN REGION

PLATE D-16d

Fugro Consultants, Inc. - Ventura, CA



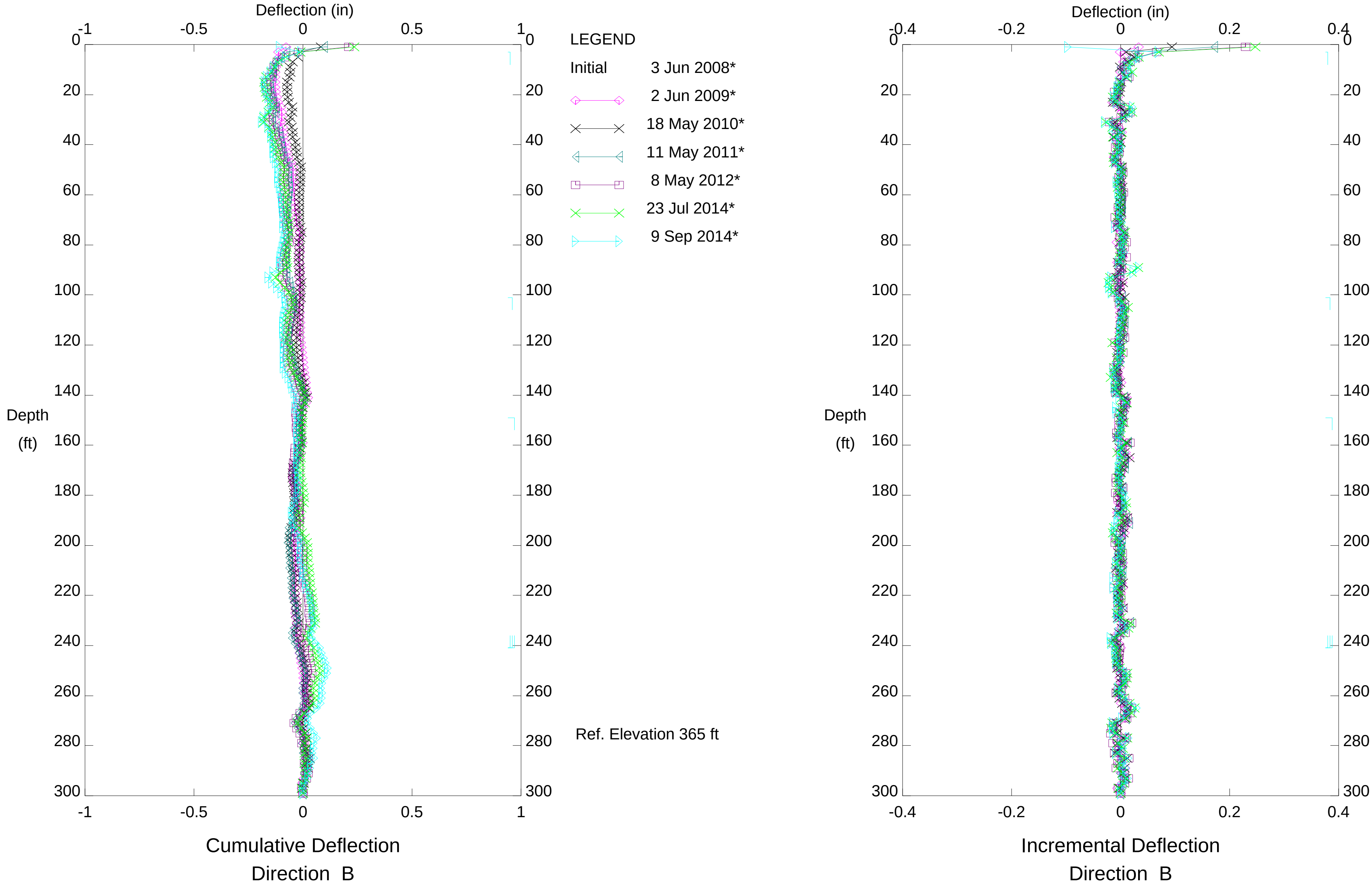


BIG ROCK MESA, Inclinometer SP-9A

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-17a



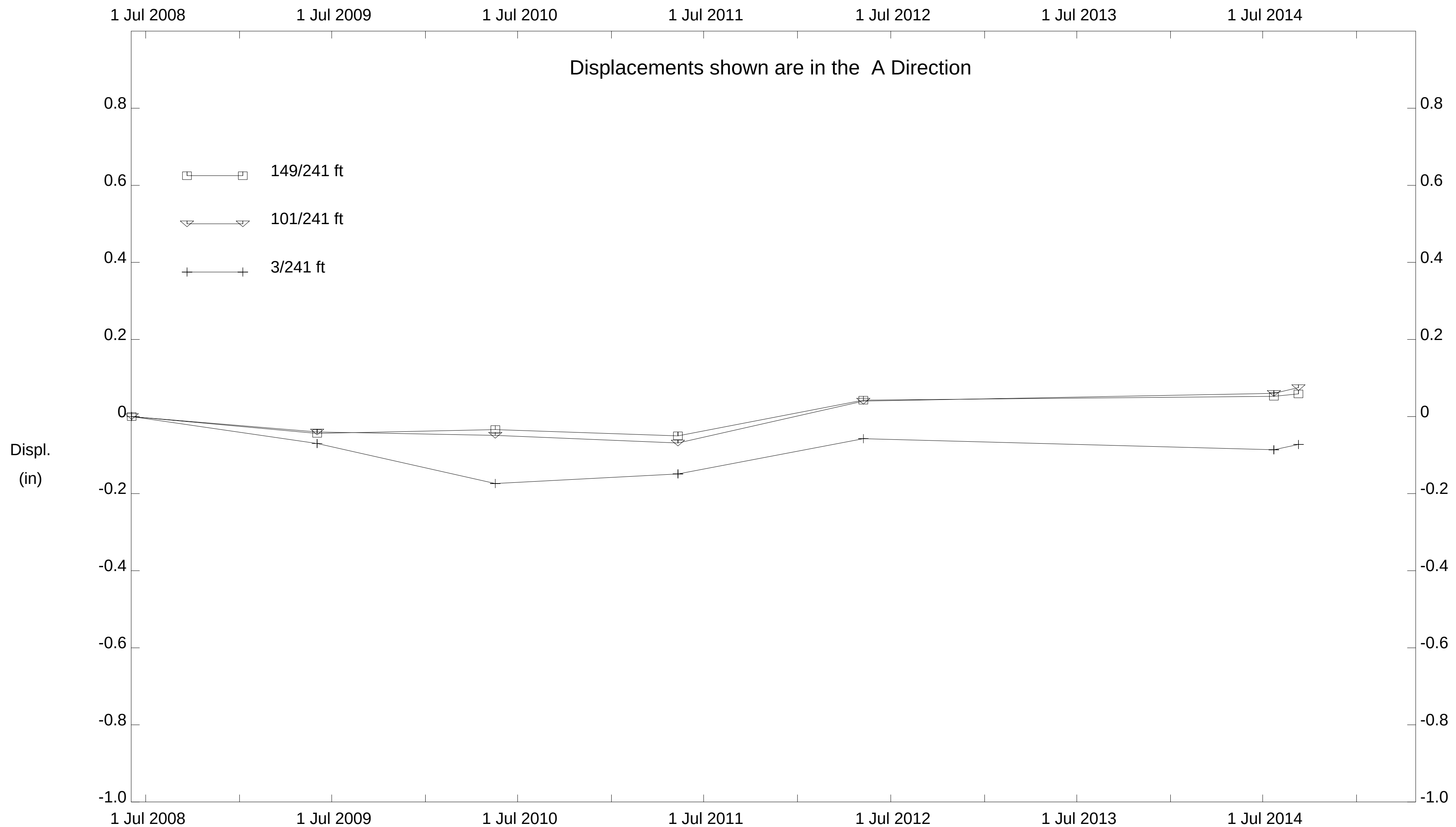
BIG ROCK MESA, Inclinometer SP-9A

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-17b

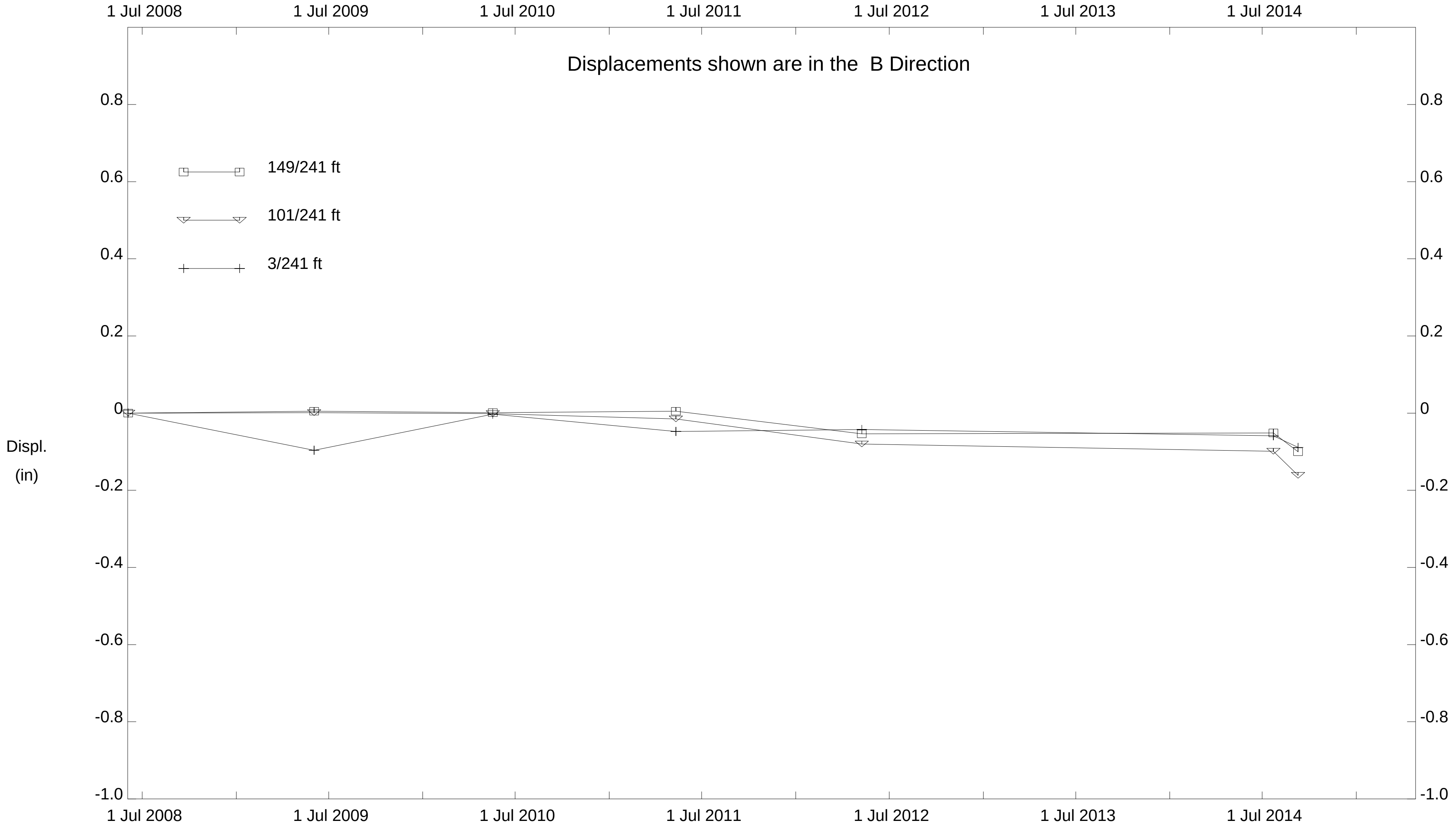
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-9A

CENTRAL REGION

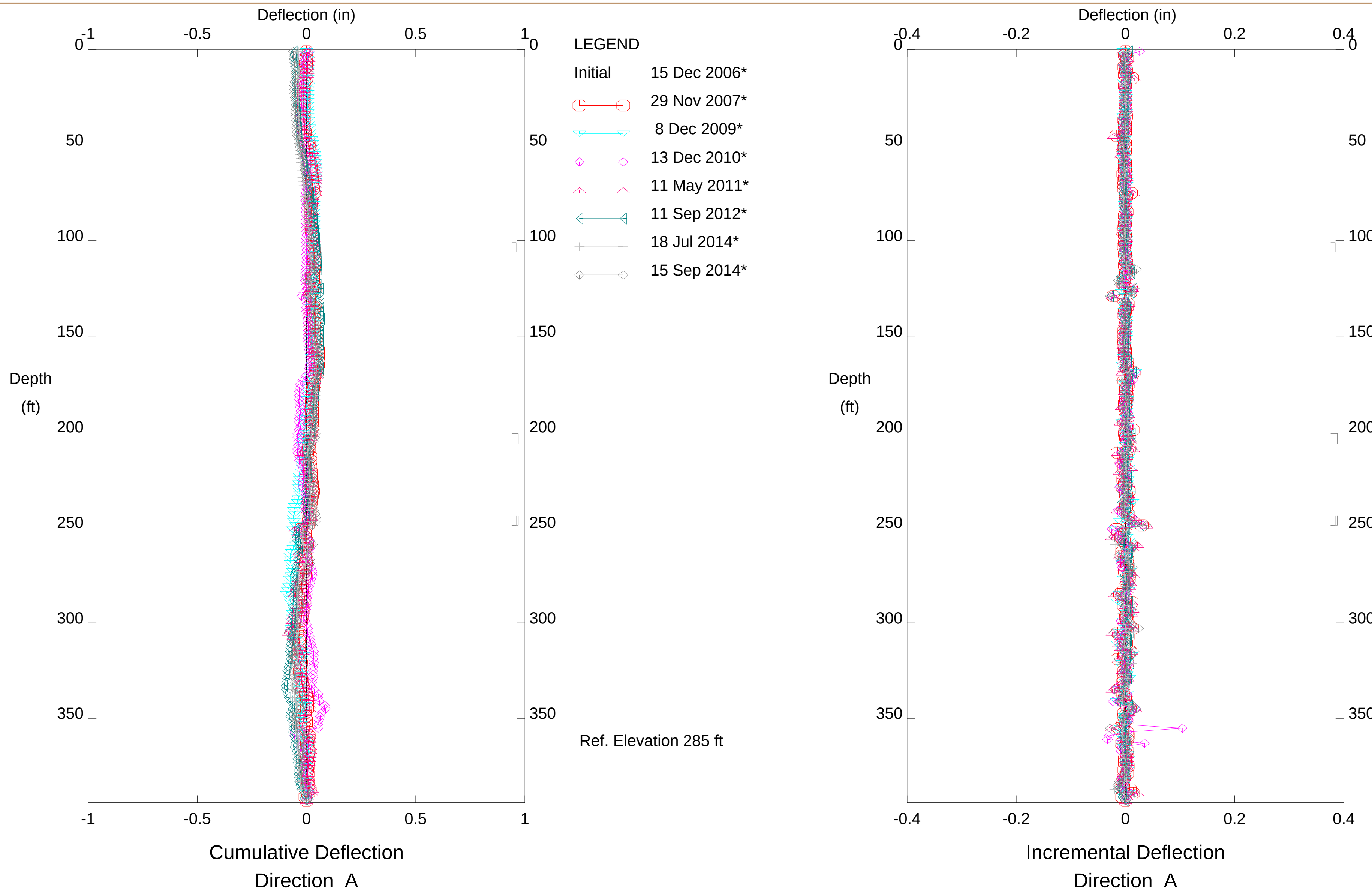
PLATE D-17c



BIG ROCK MESA, Inclinometer SP-9A

CENTRAL REGION

PLATE D-17d

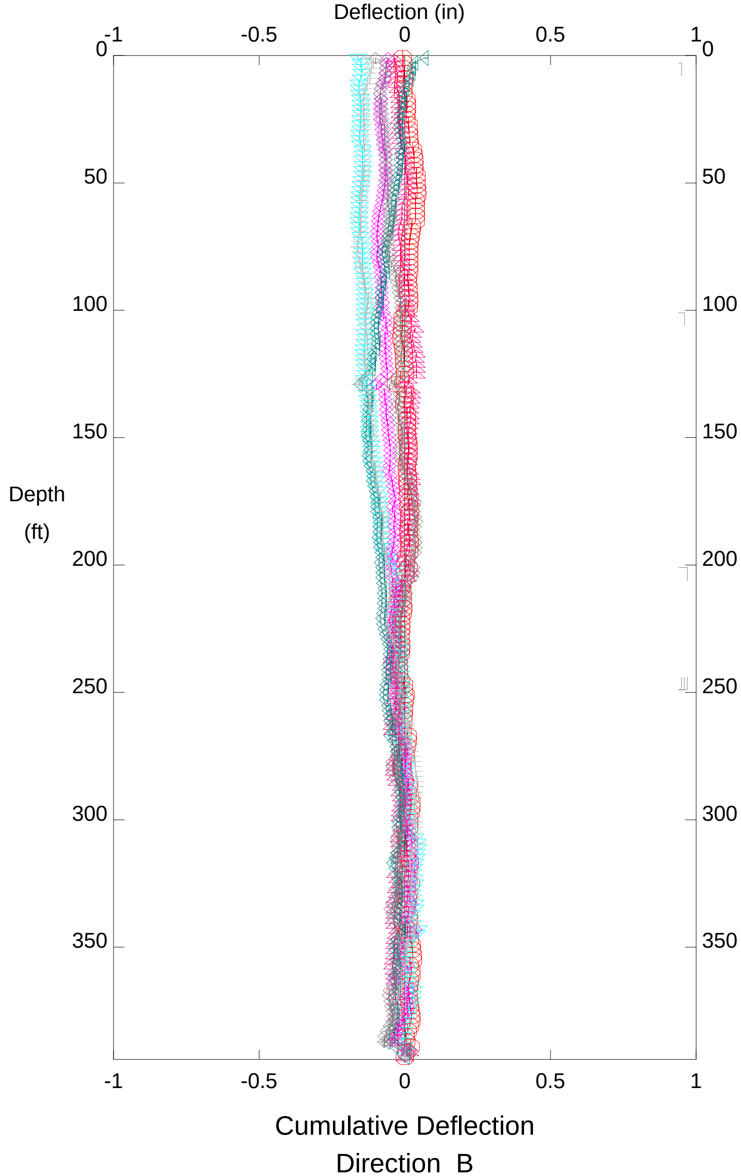


BIG ROCK MESA, Inclinometer SP-16A

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

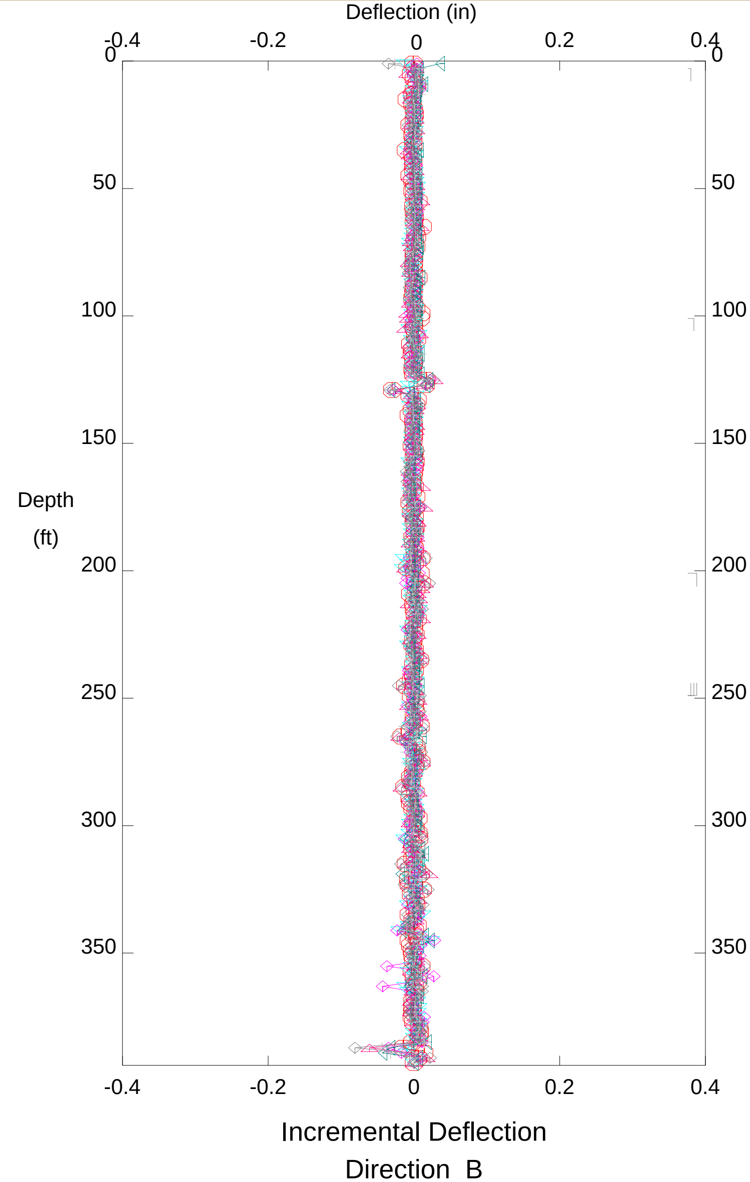
PLATE D-18a



LEGEND

Initial	15 Dec 2006*
	29 Nov 2007*
	8 Dec 2009*
	13 Dec 2010*
	11 May 2011*
	11 Sep 2012*
	18 Jul 2014*
	15 Sep 2014*

Ref. Elevation 285 ft

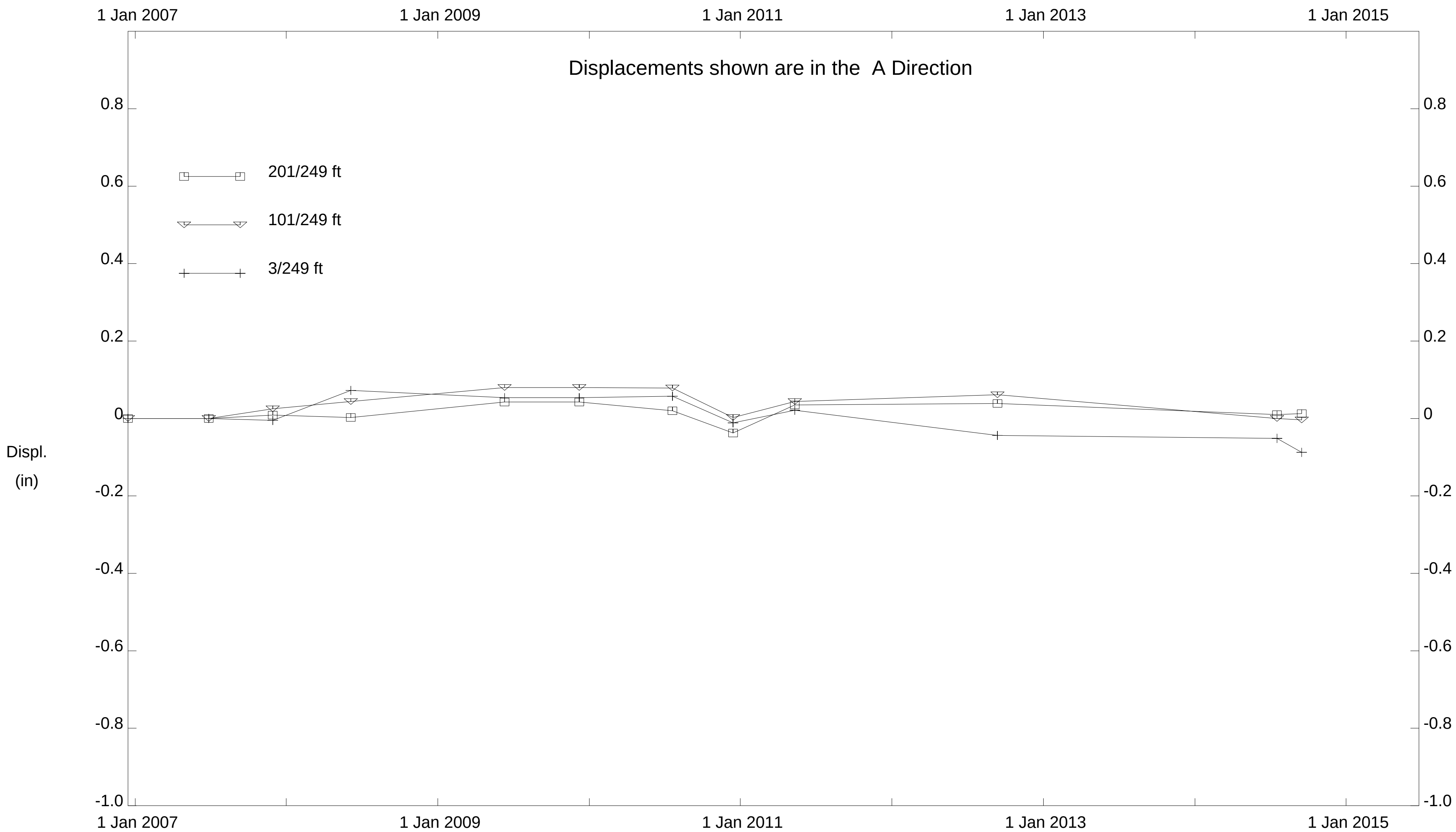


BIG ROCK MESA, Inclinometer SP-16A

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

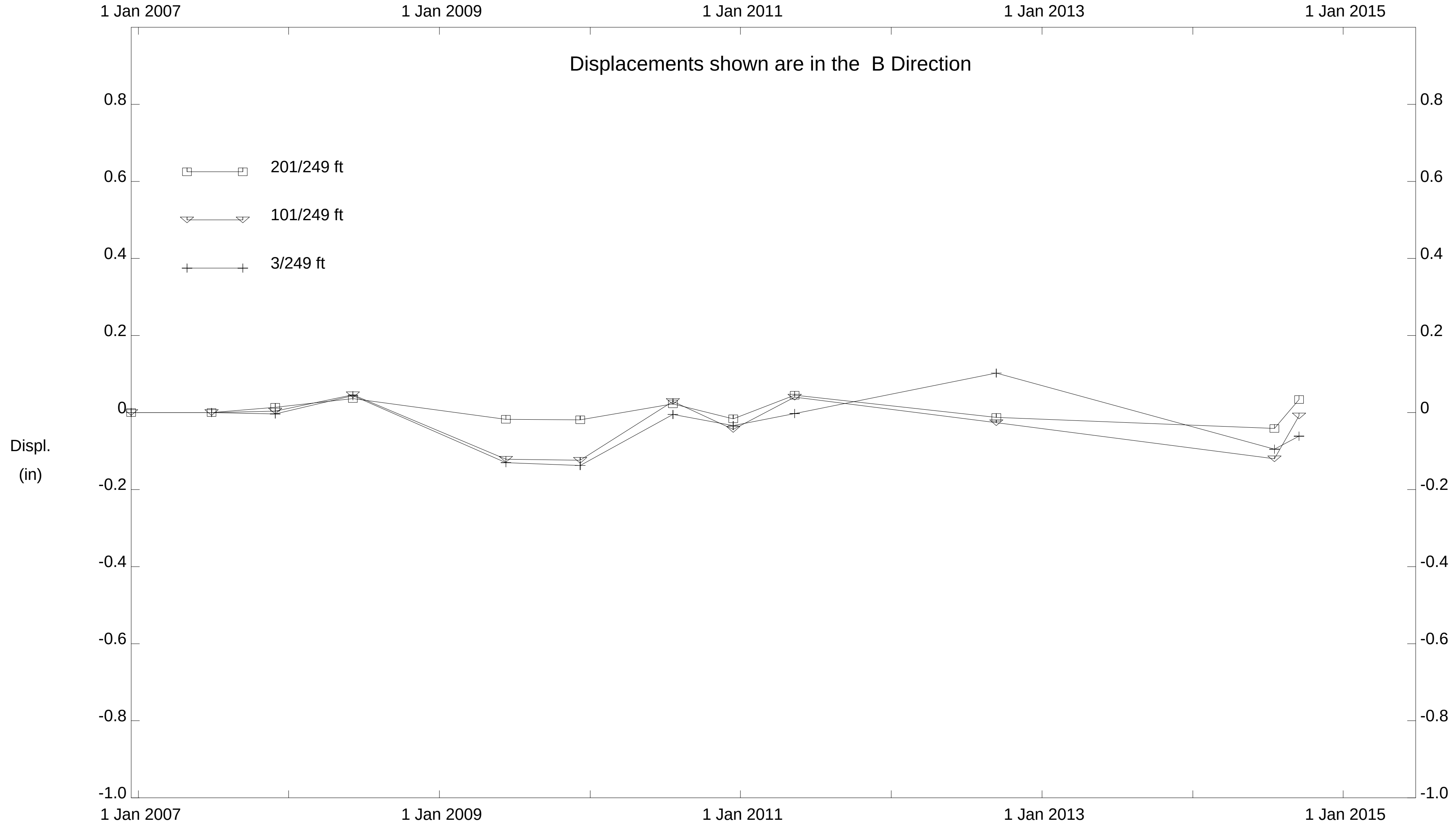
PLATE D-18b



BIG ROCK MESA, Inclinometer SP-16A

CENTRAL REGION

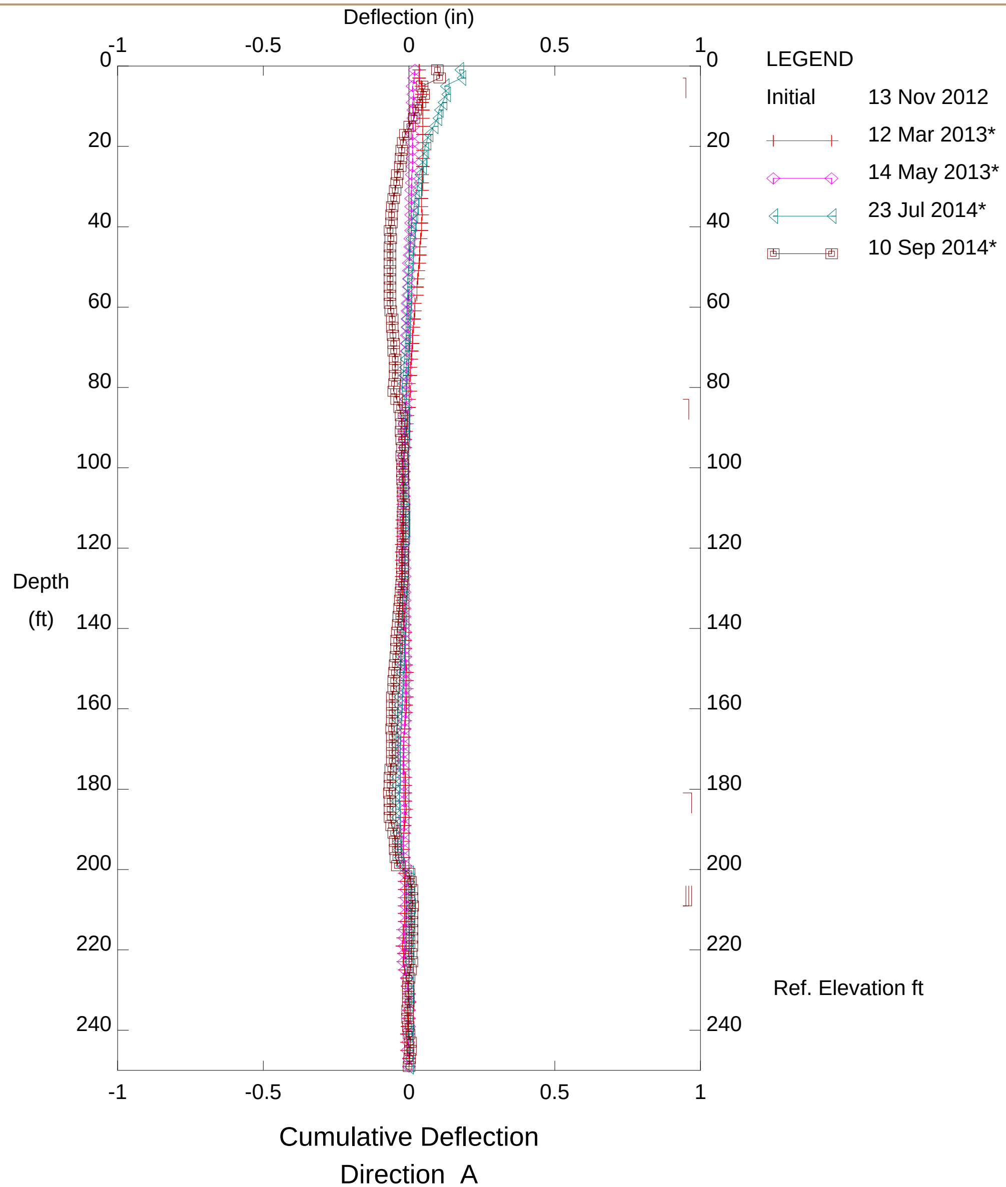
PLATE D-18c

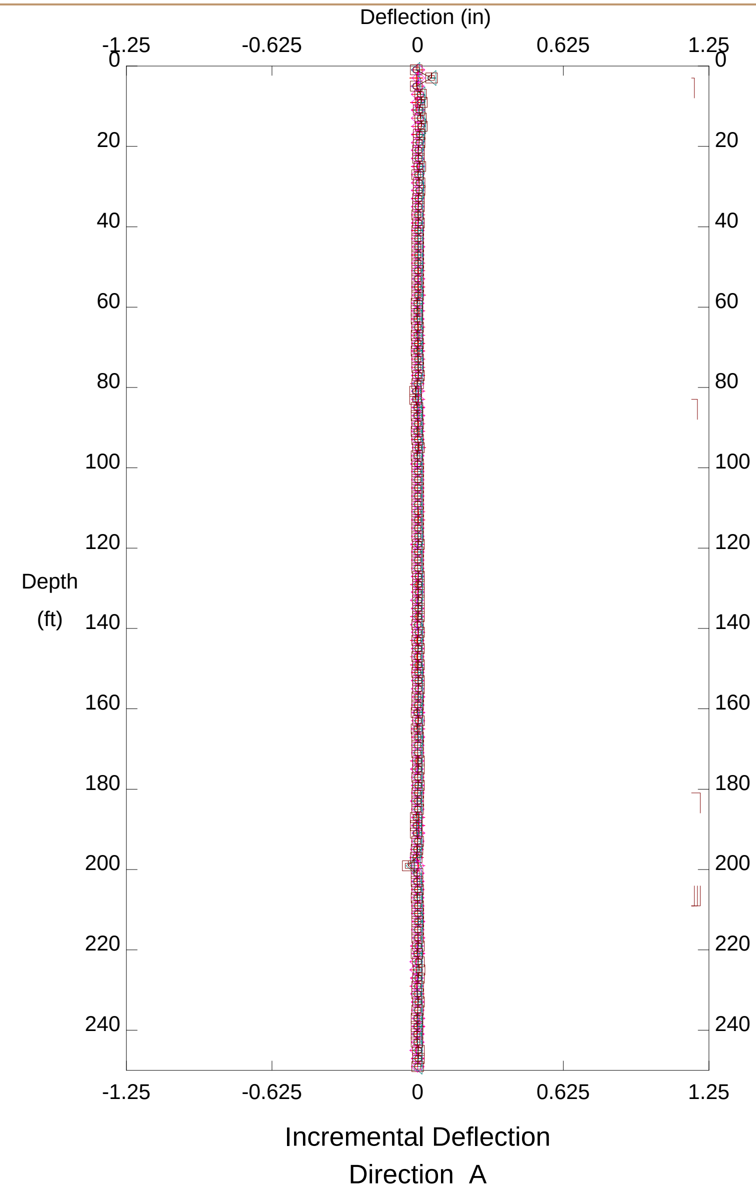


BIG ROCK MESA, Inclinometer SP-16A

CENTRAL REGION

PLATE D-18d



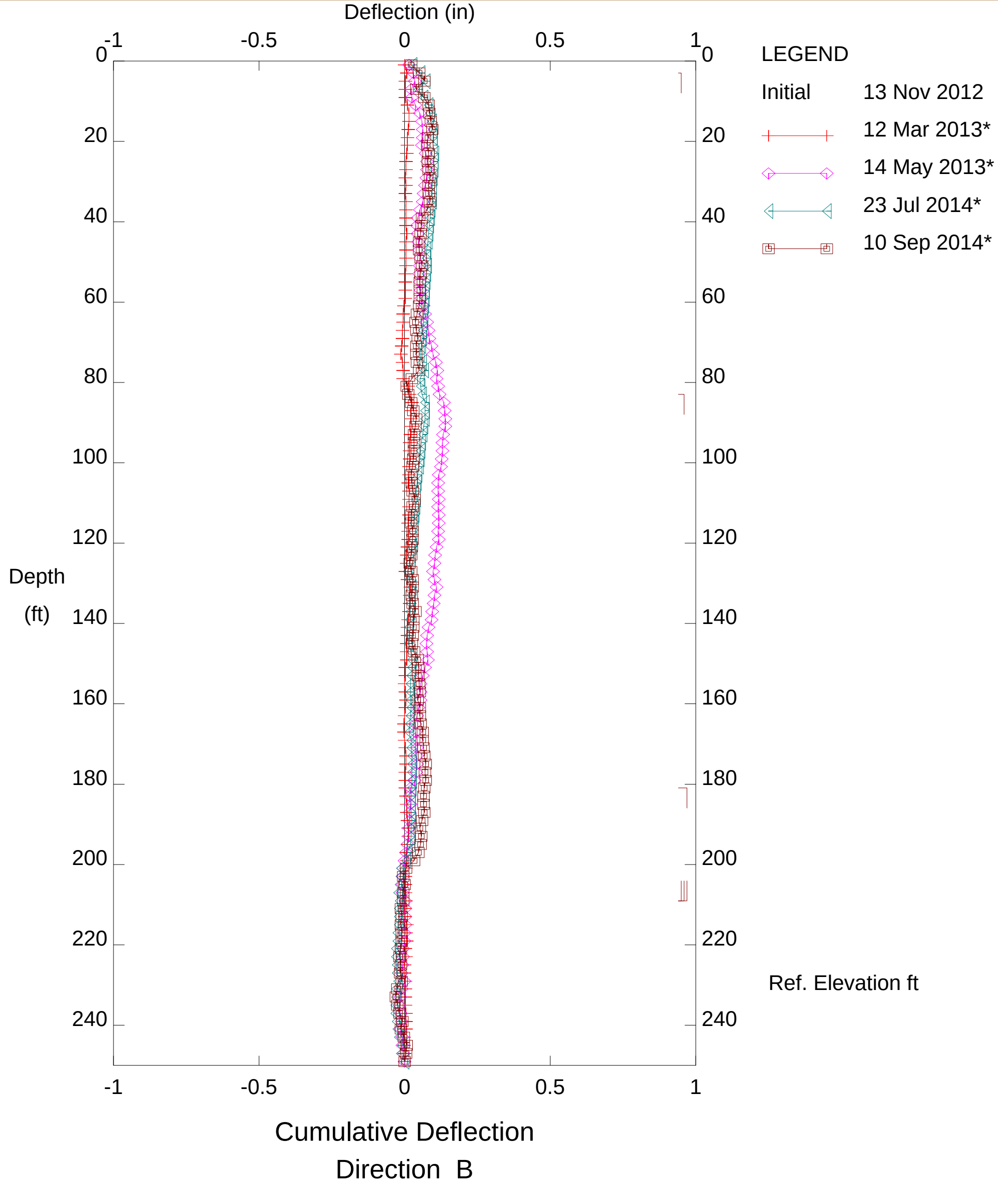


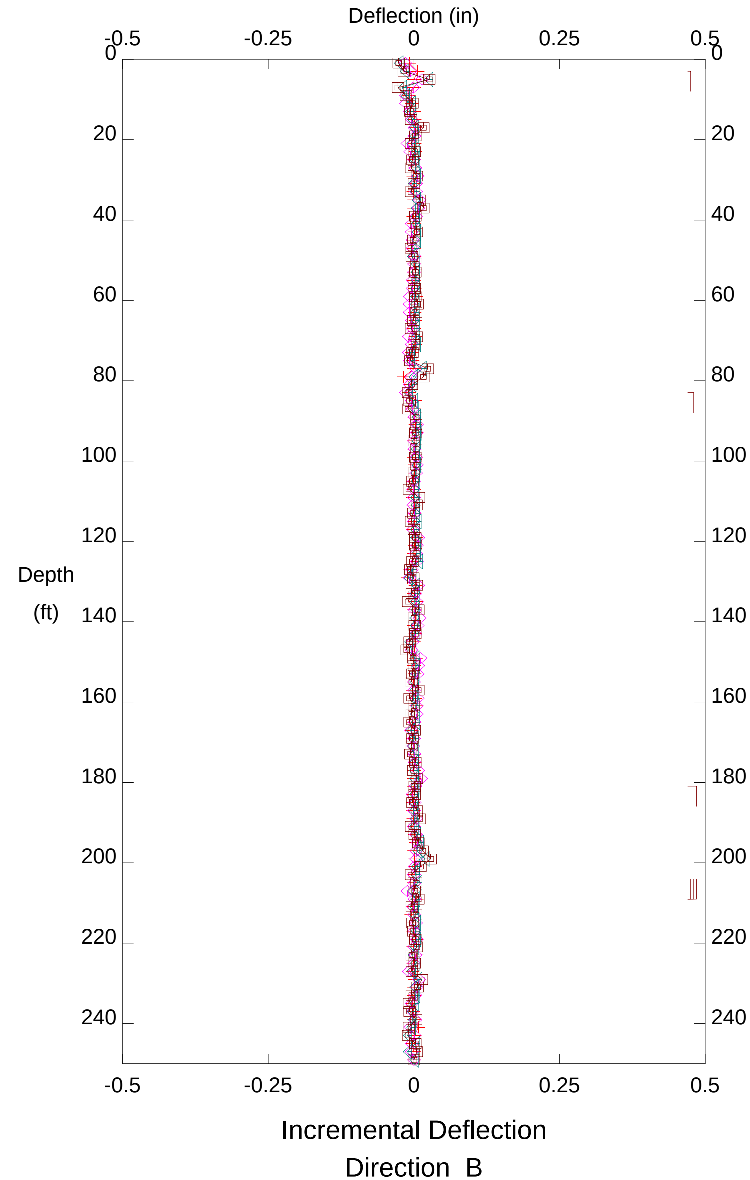
BRM, Inclinometer SP-17B

Sets marked * include zero shift and/or rotation corrections.

PLATE D-19a

Fugro Consultants, Inc. - Ventura, CA



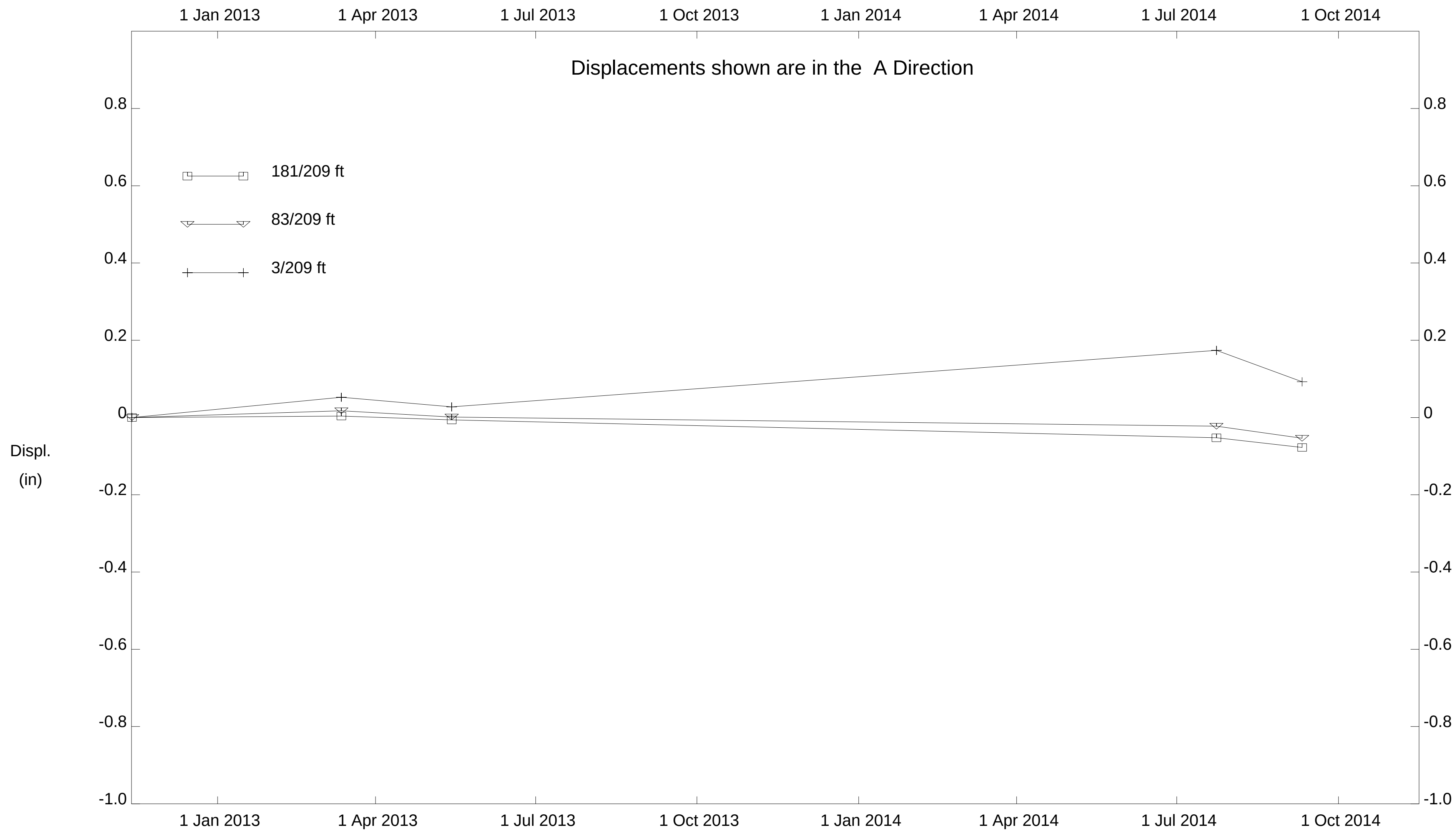


BRM, Inclinometer SP-17B

Sets marked * include zero shift and/or rotation corrections.

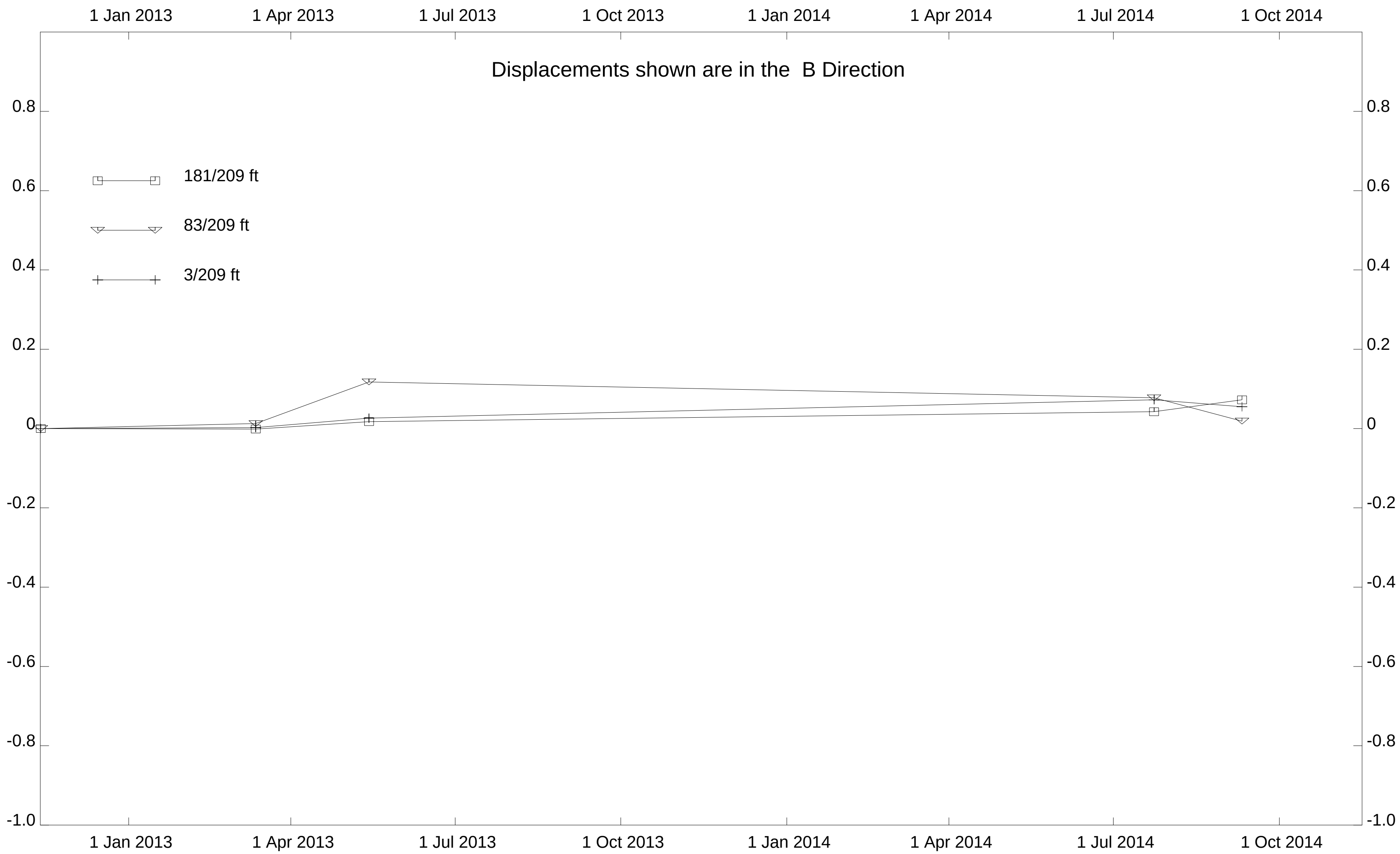
PLATE D-19b

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP-17B.gtl

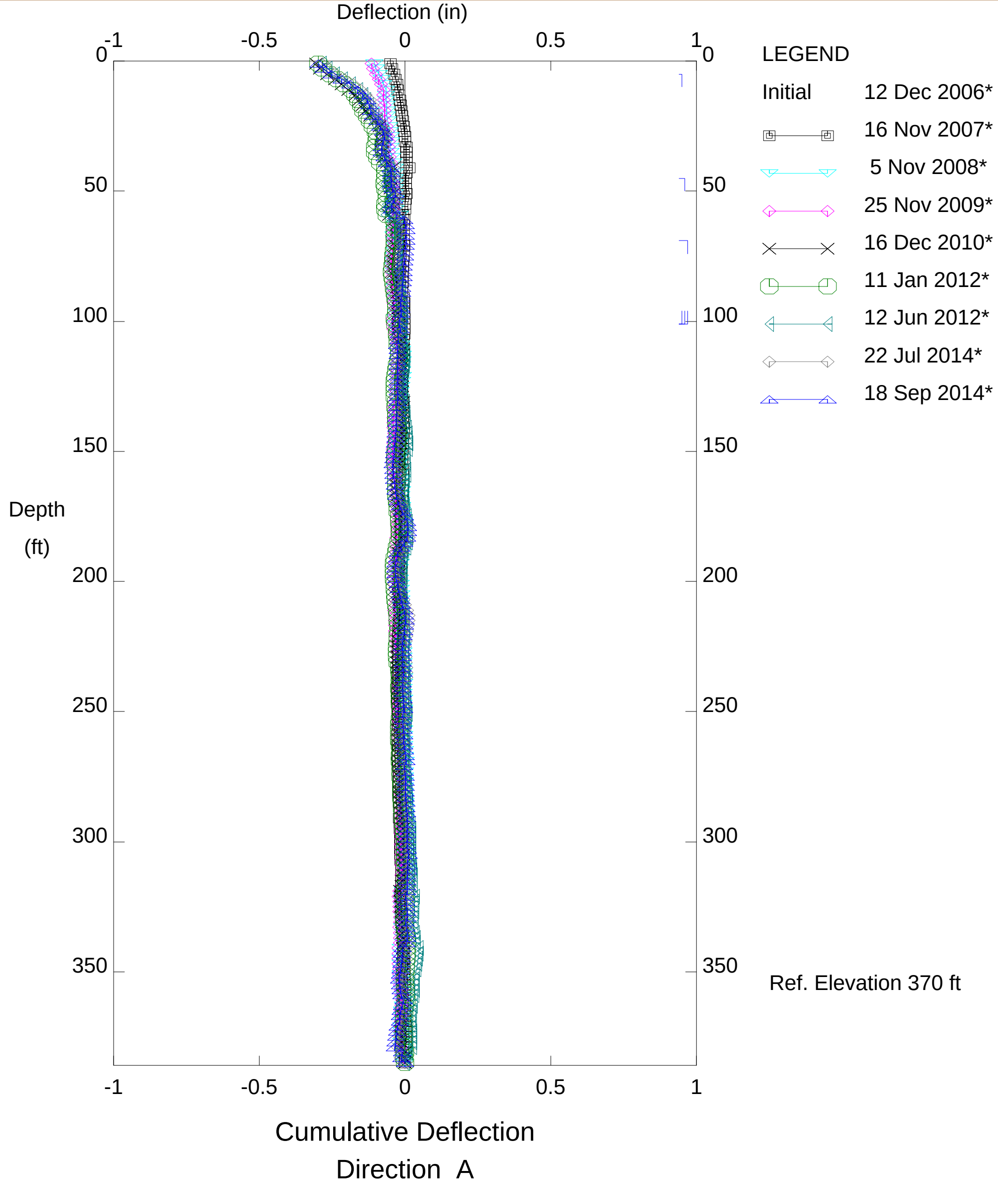


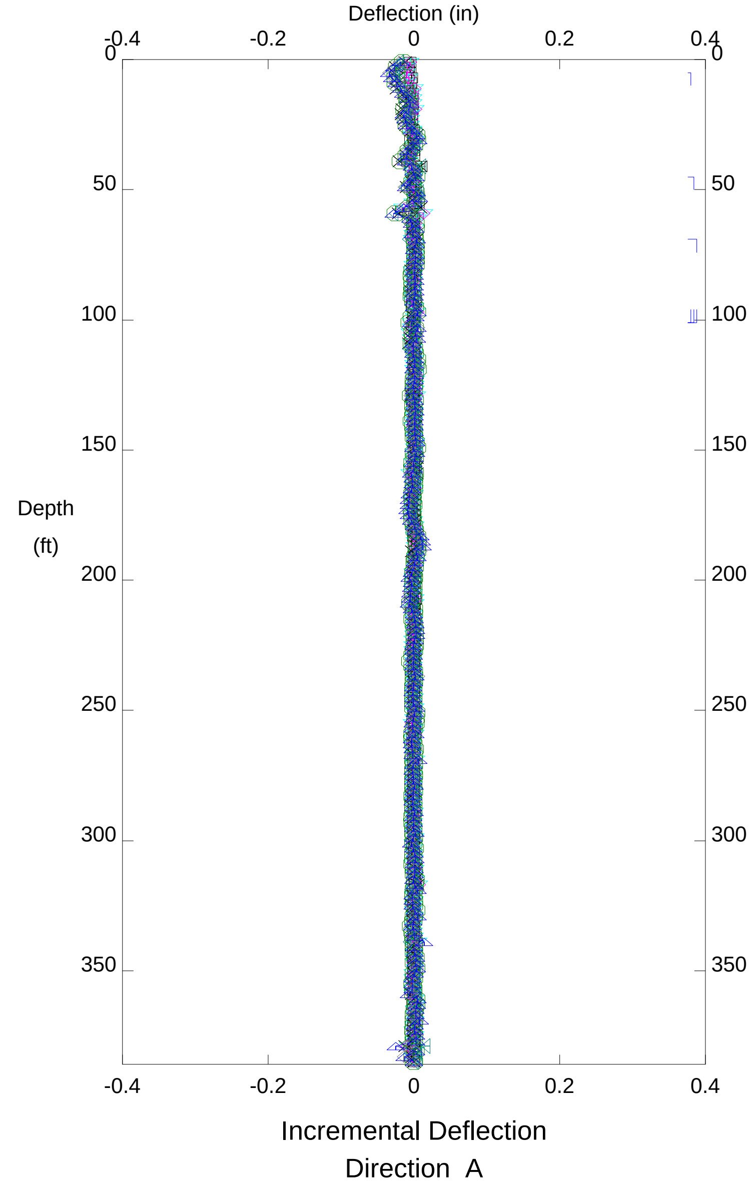
BRM, Inclinometer SP-17B

PLATE D-19c



BRM, Inclinometer SP-17B



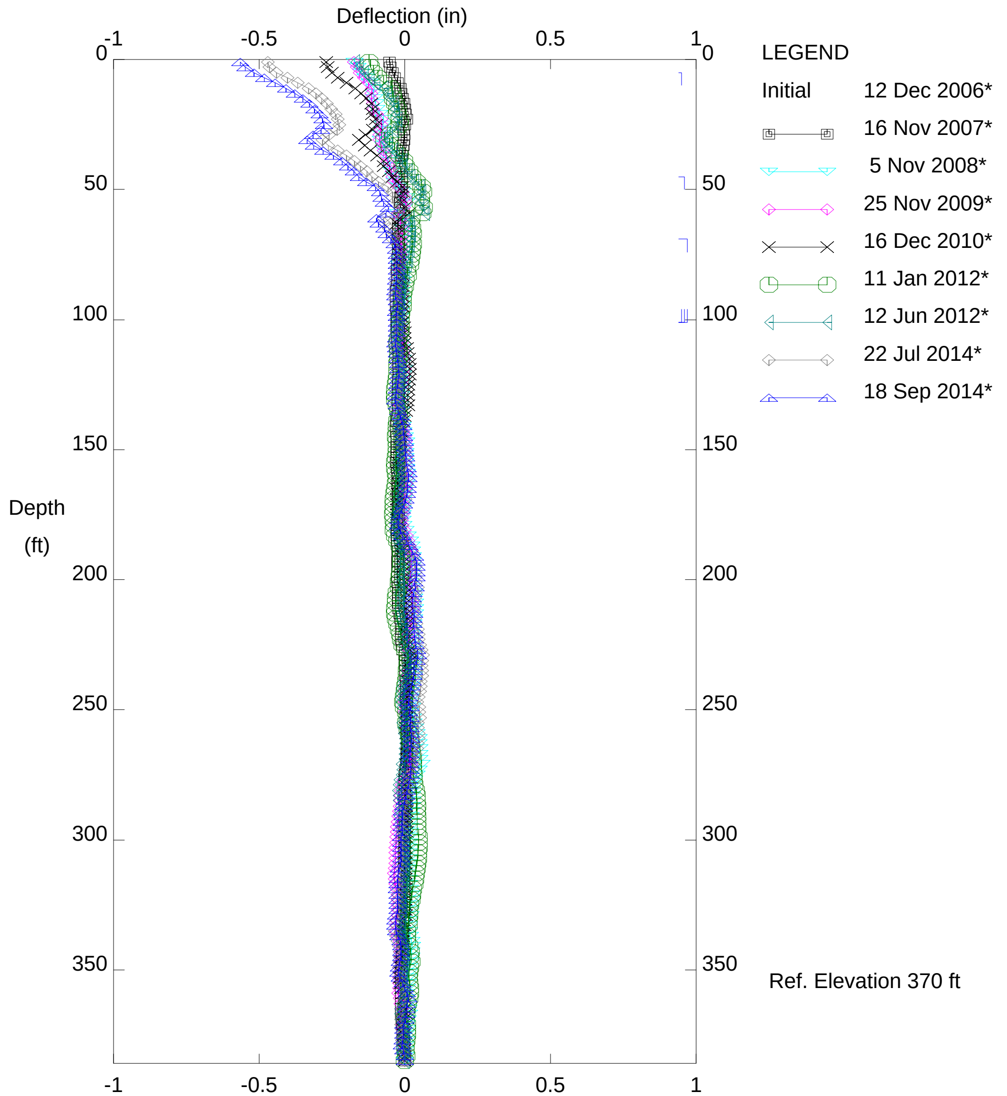


BIG ROCK MESA, Inclinometer SP-24

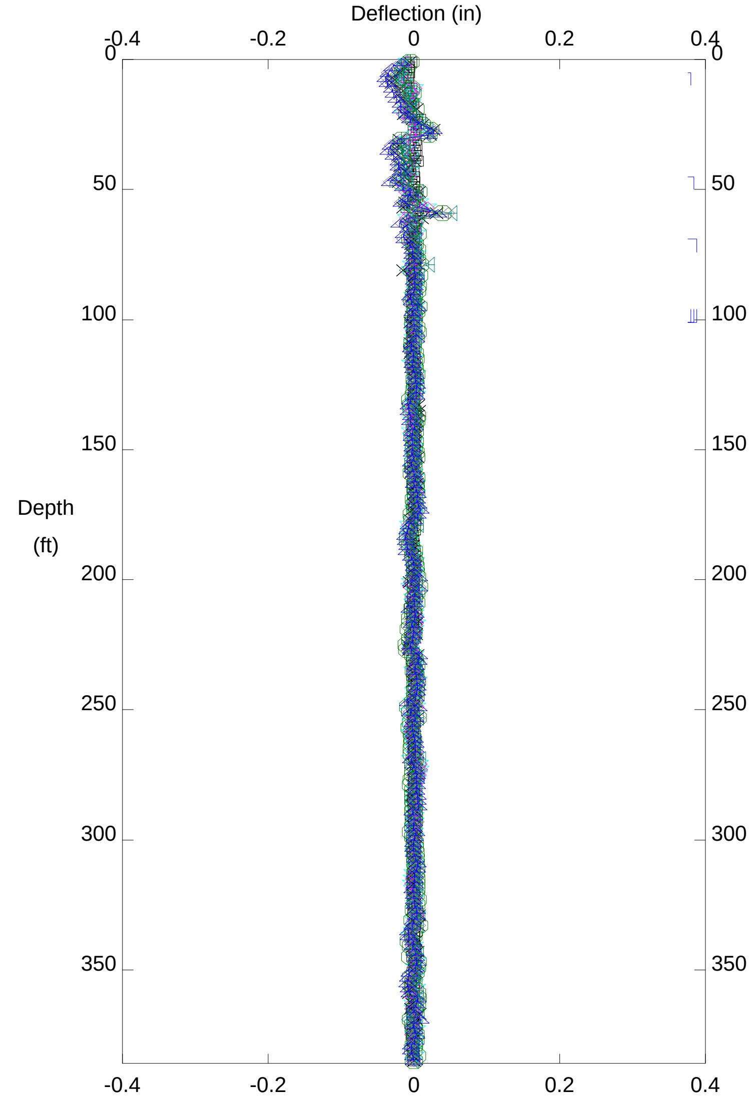
CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-20a



Cumulative Deflection
Direction B



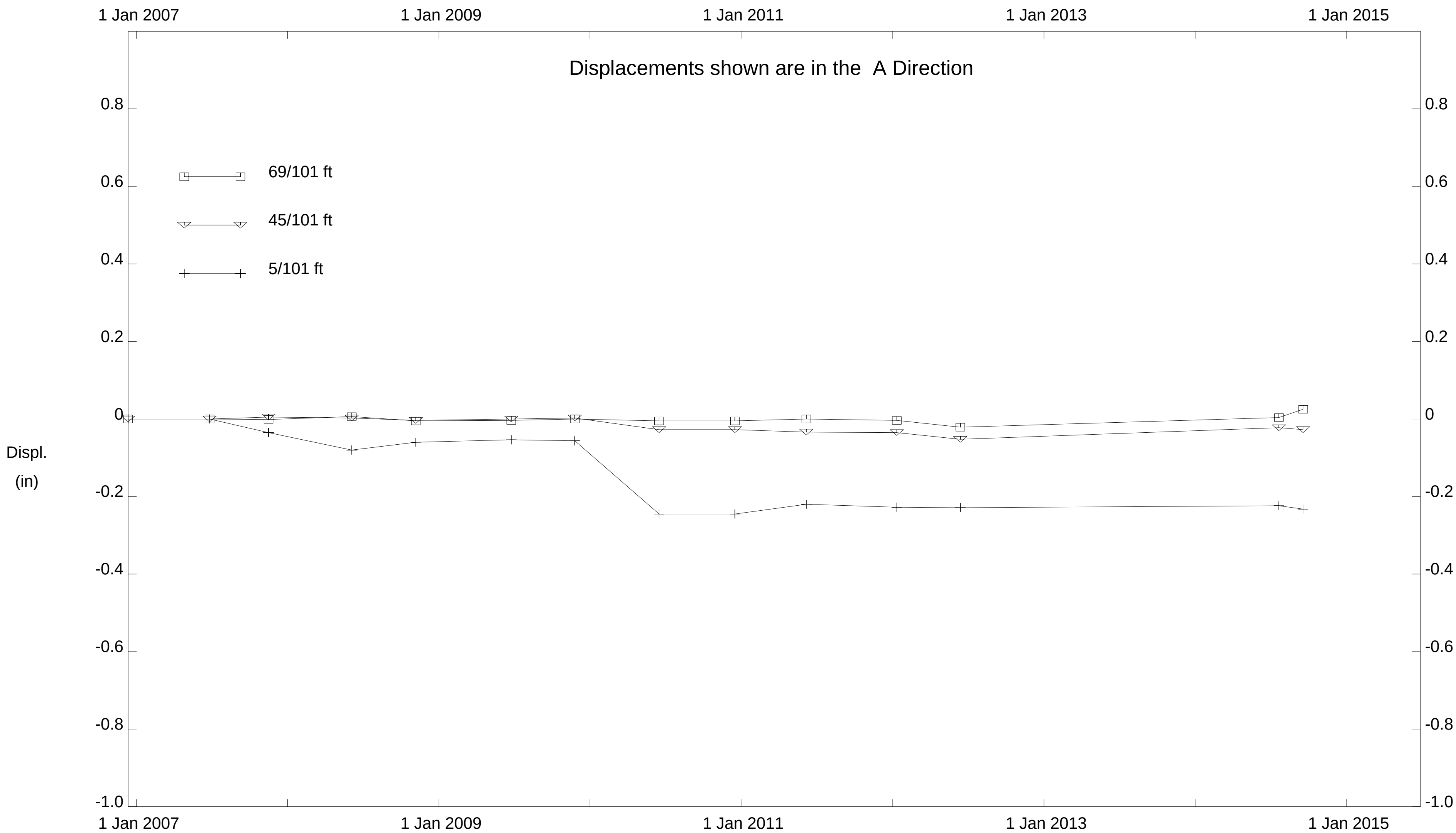
Incremental Deflection
Direction B

BIG ROCK MESA, Inclinometer SP-24

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

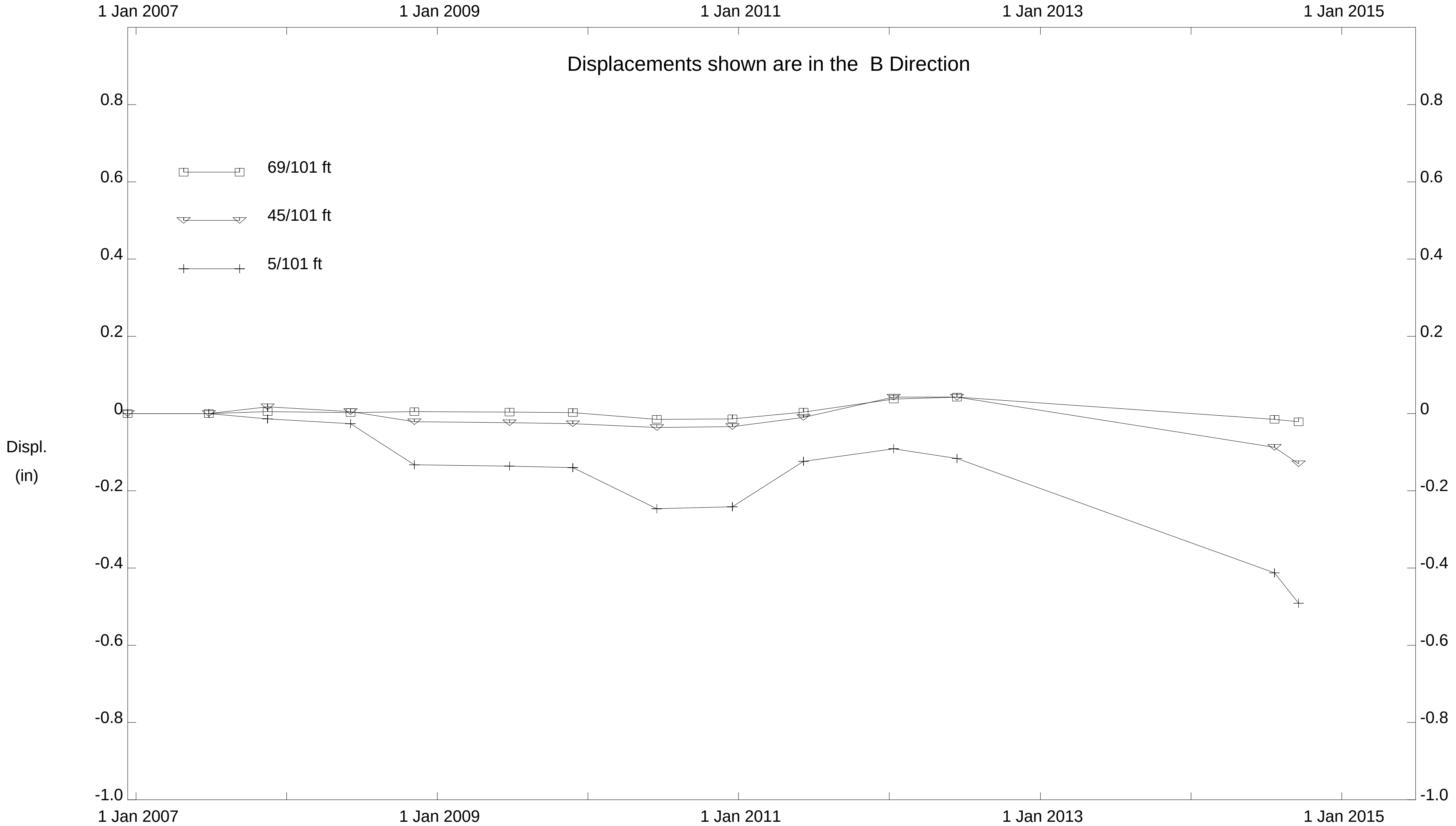
PLATE D-20b



BIG ROCK MESA, Inclinometer SP-24

CENTRAL REGION

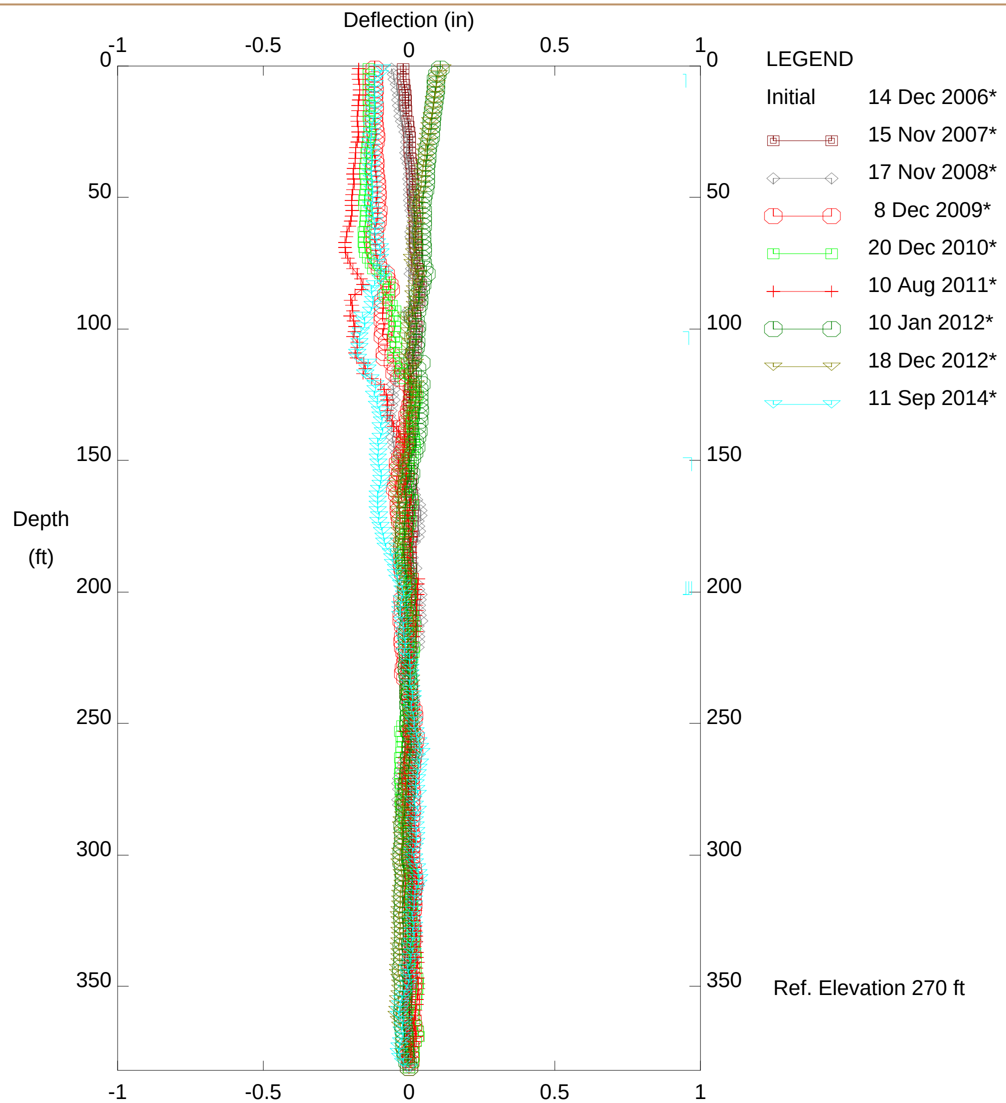
PLATE D-20c



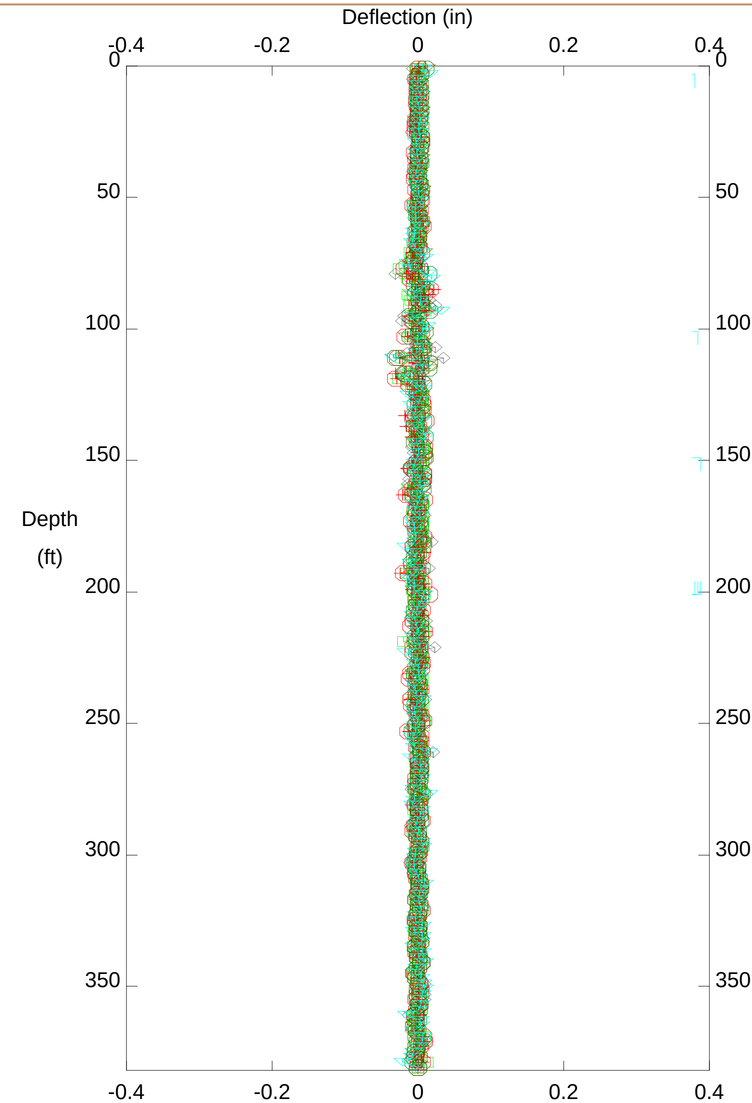
BIG ROCK MESA, Inclinometer SP-24

CENTRAL REGION

PLATE D-20d



Cumulative Deflection
Direction A



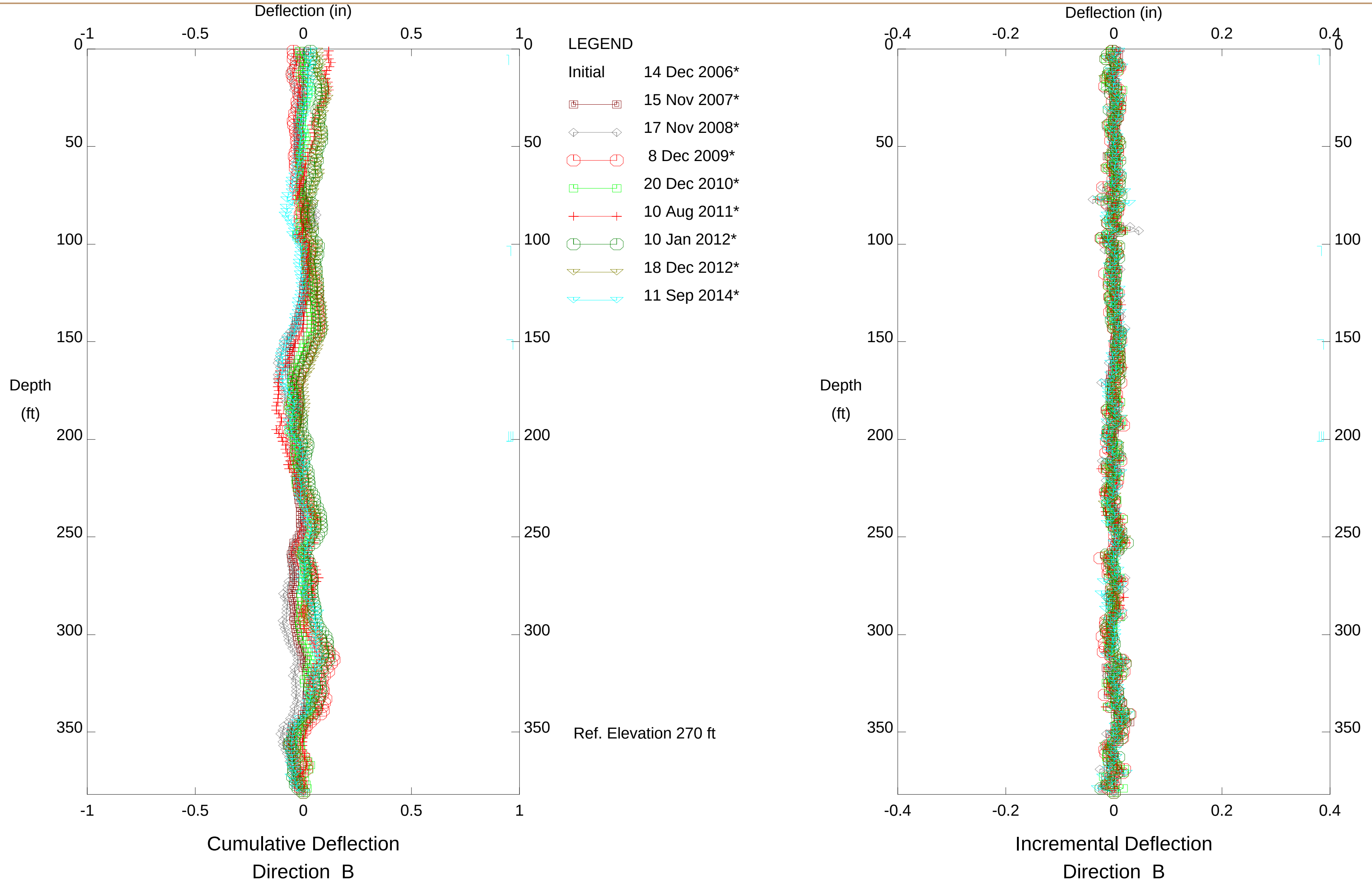
Incremental Deflection
Direction A

BIG ROCK MESA, Inclinometer SP-34

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-21a



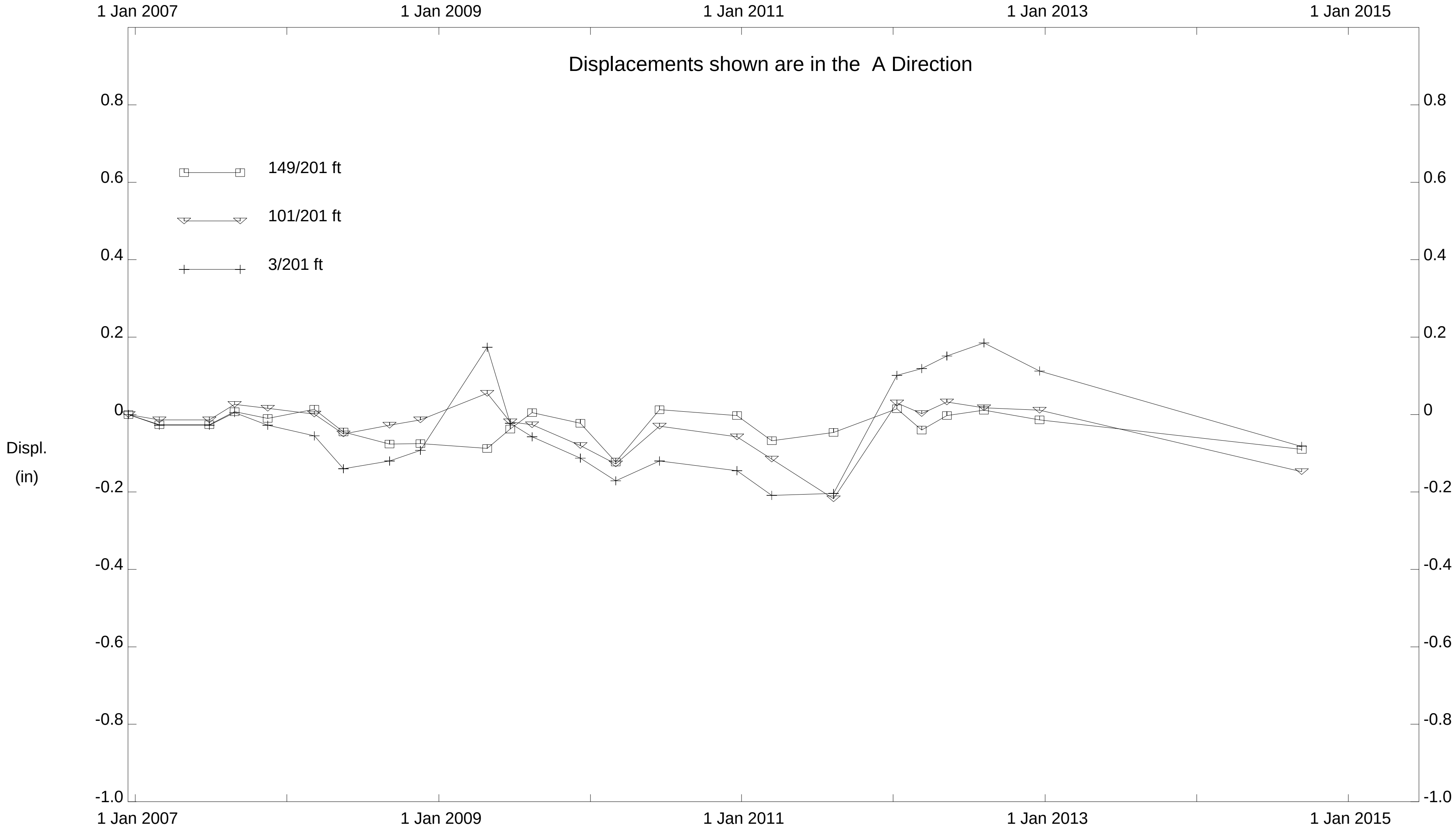
BIG ROCK MESA, Inclinometer SP-34

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-21b

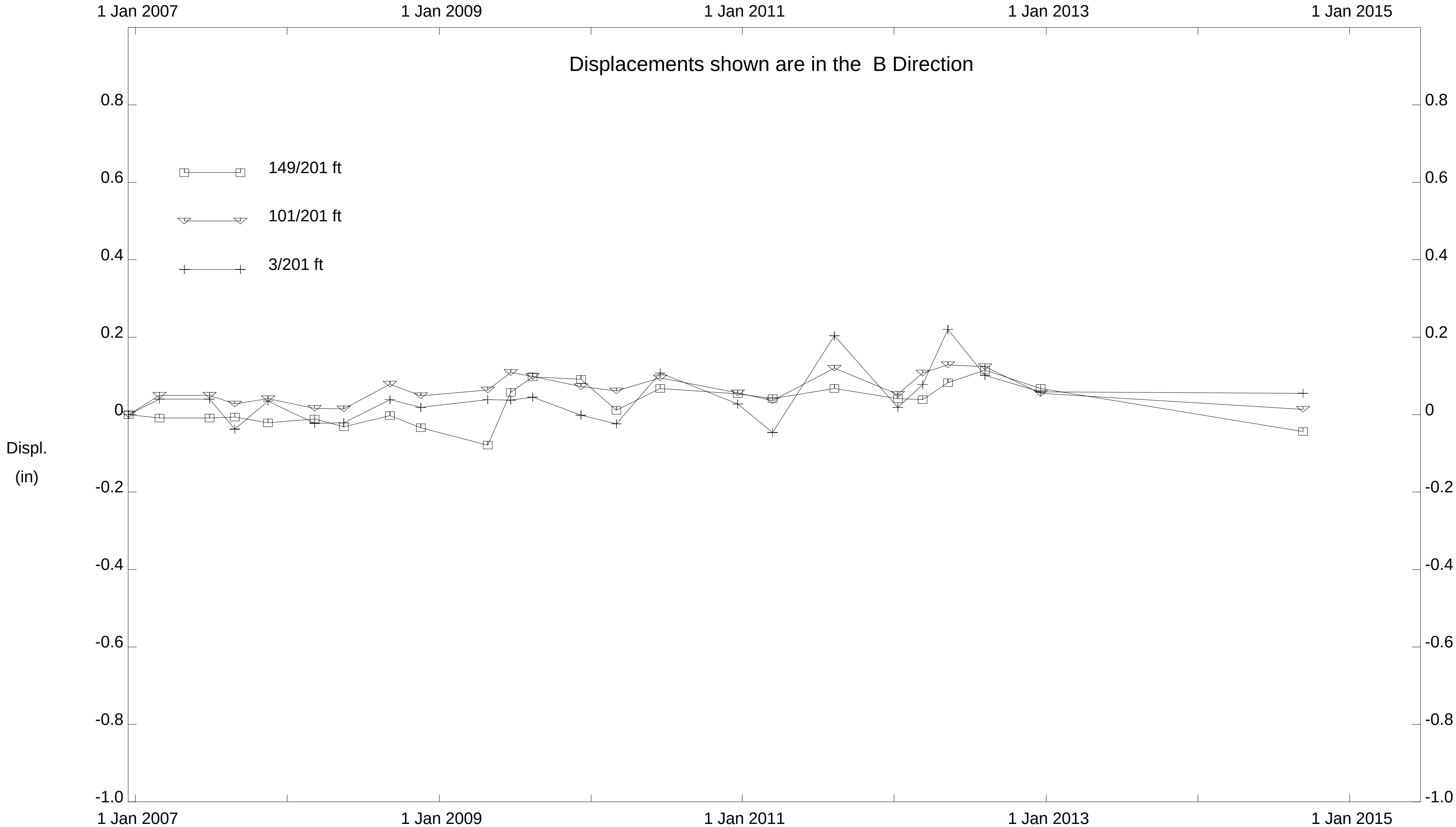
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-34

CENTRAL REGION

PLATE D-21c

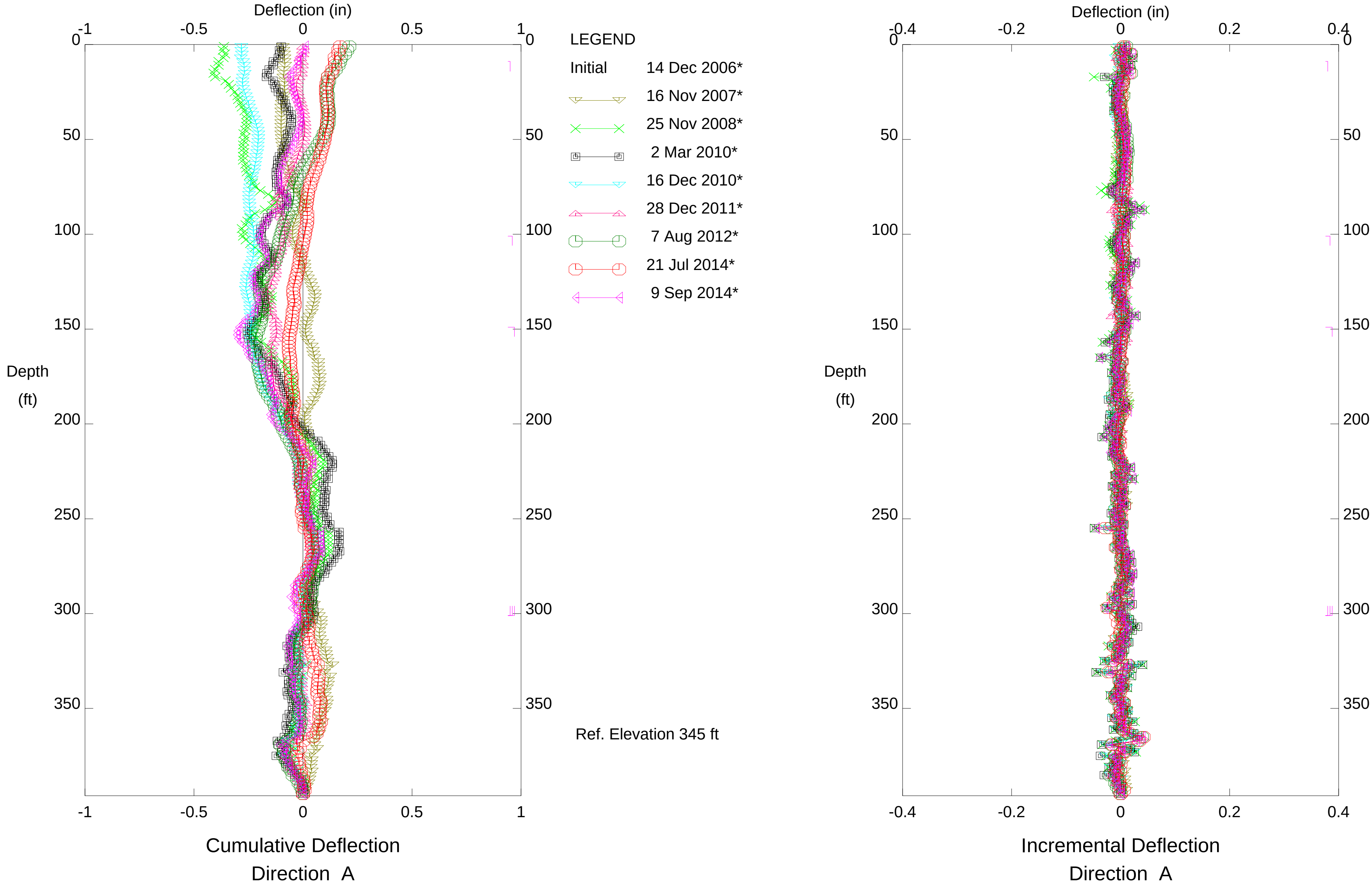


BIG ROCK MESA, Inclinometer SP-34

CENTRAL REGION

PLATE D-21d

Fugro Consultants, Inc. - Ventura, CA



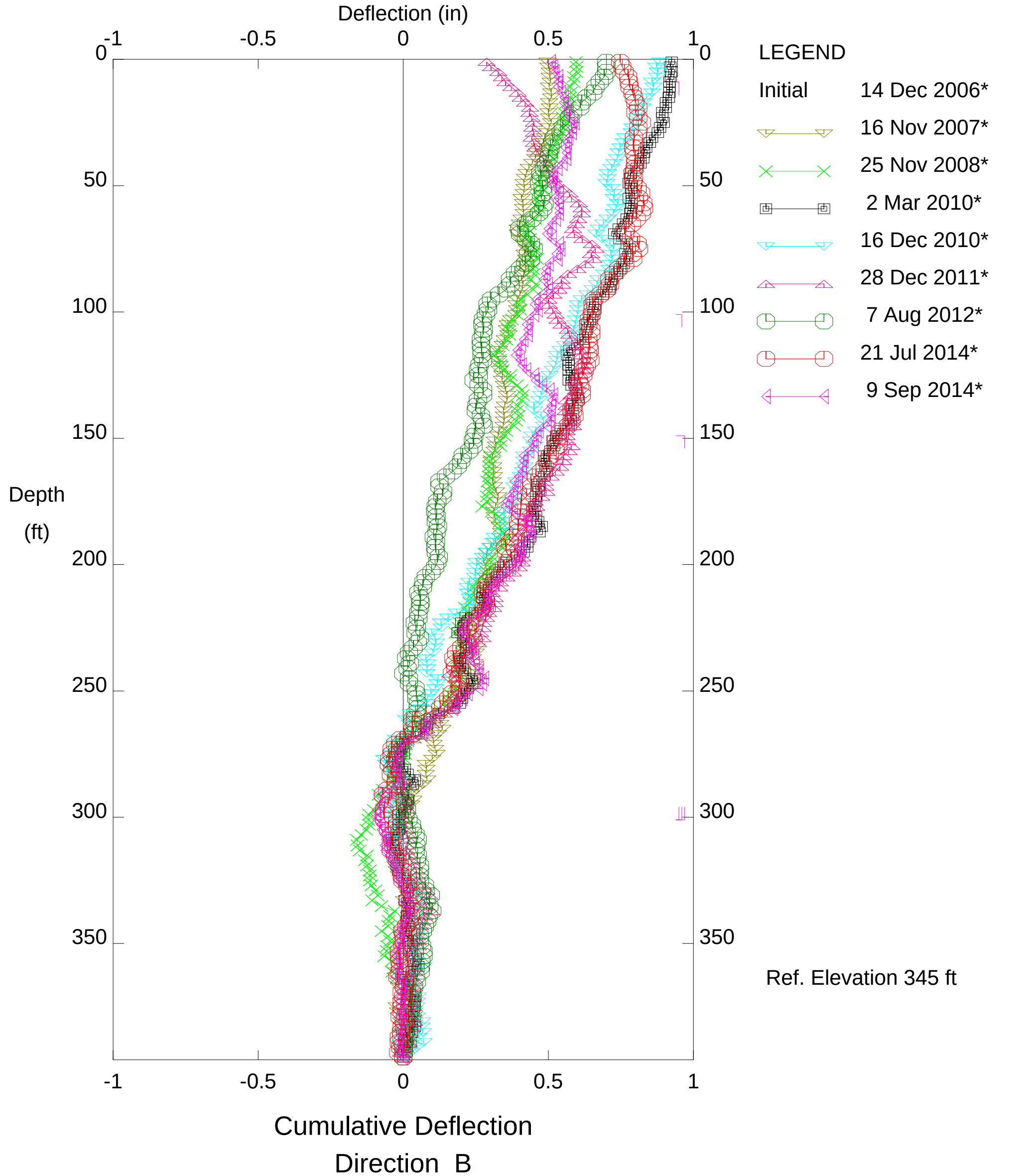
BIG ROCK MESA, Inclinometer SP-35

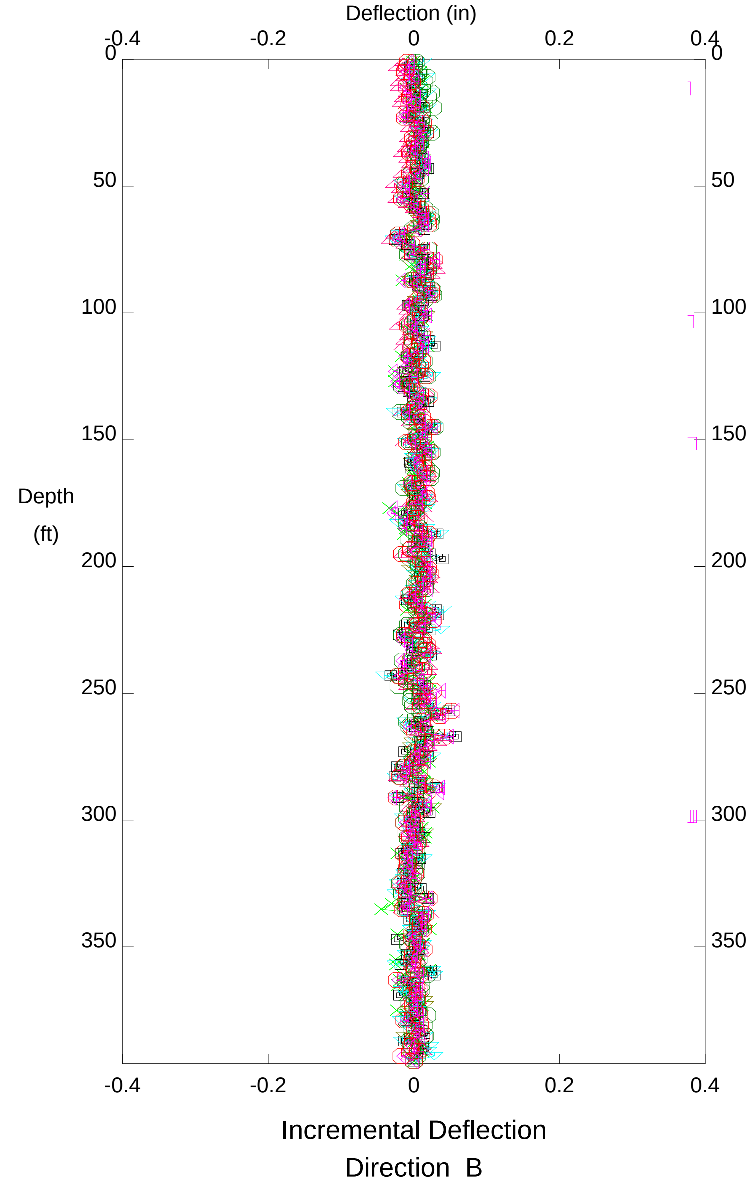
CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-22a

Fugro Consultants, Inc. - Ventura, CA





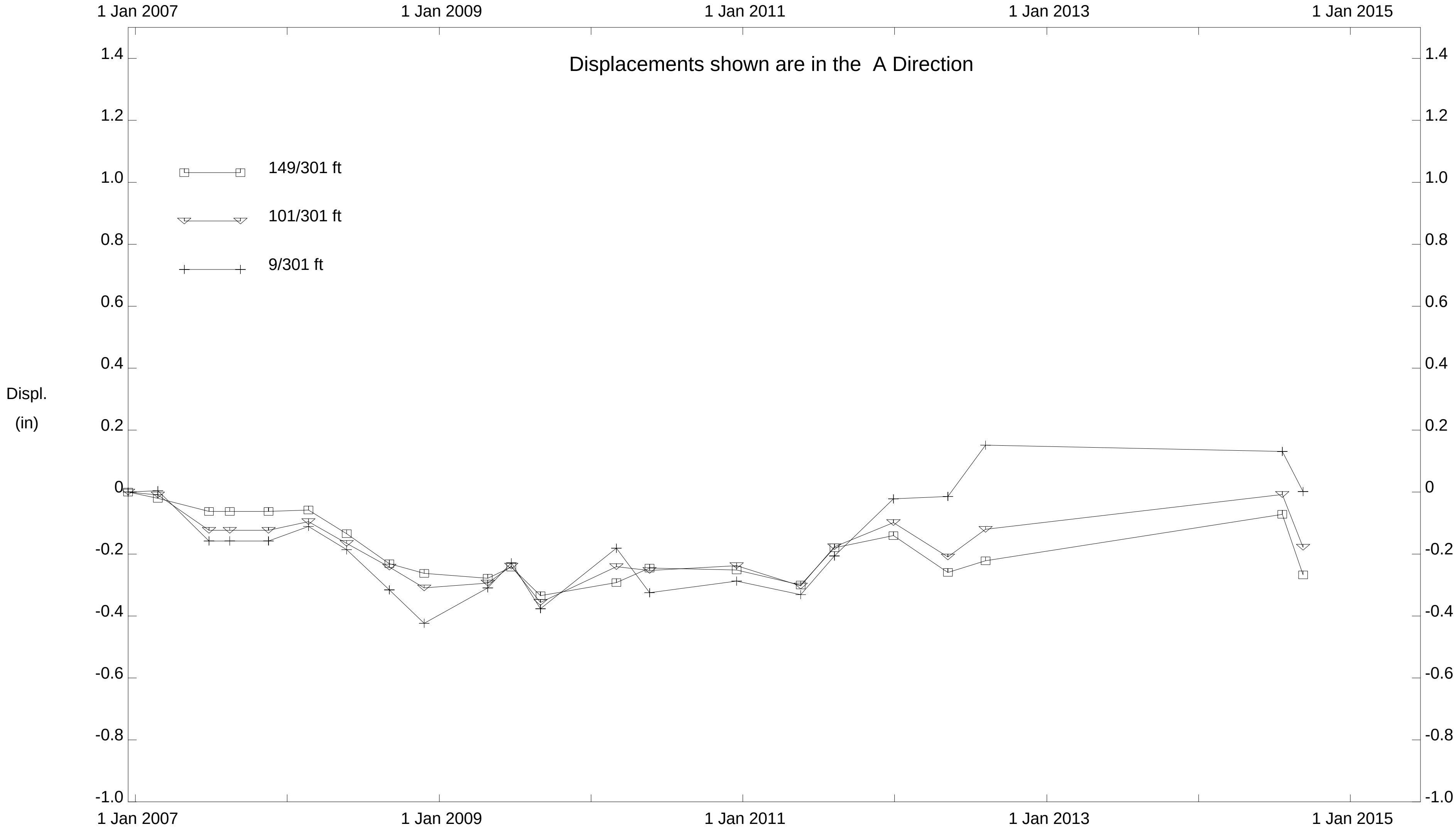
BIG ROCK MESA, Inclinometer SP-35

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-22b

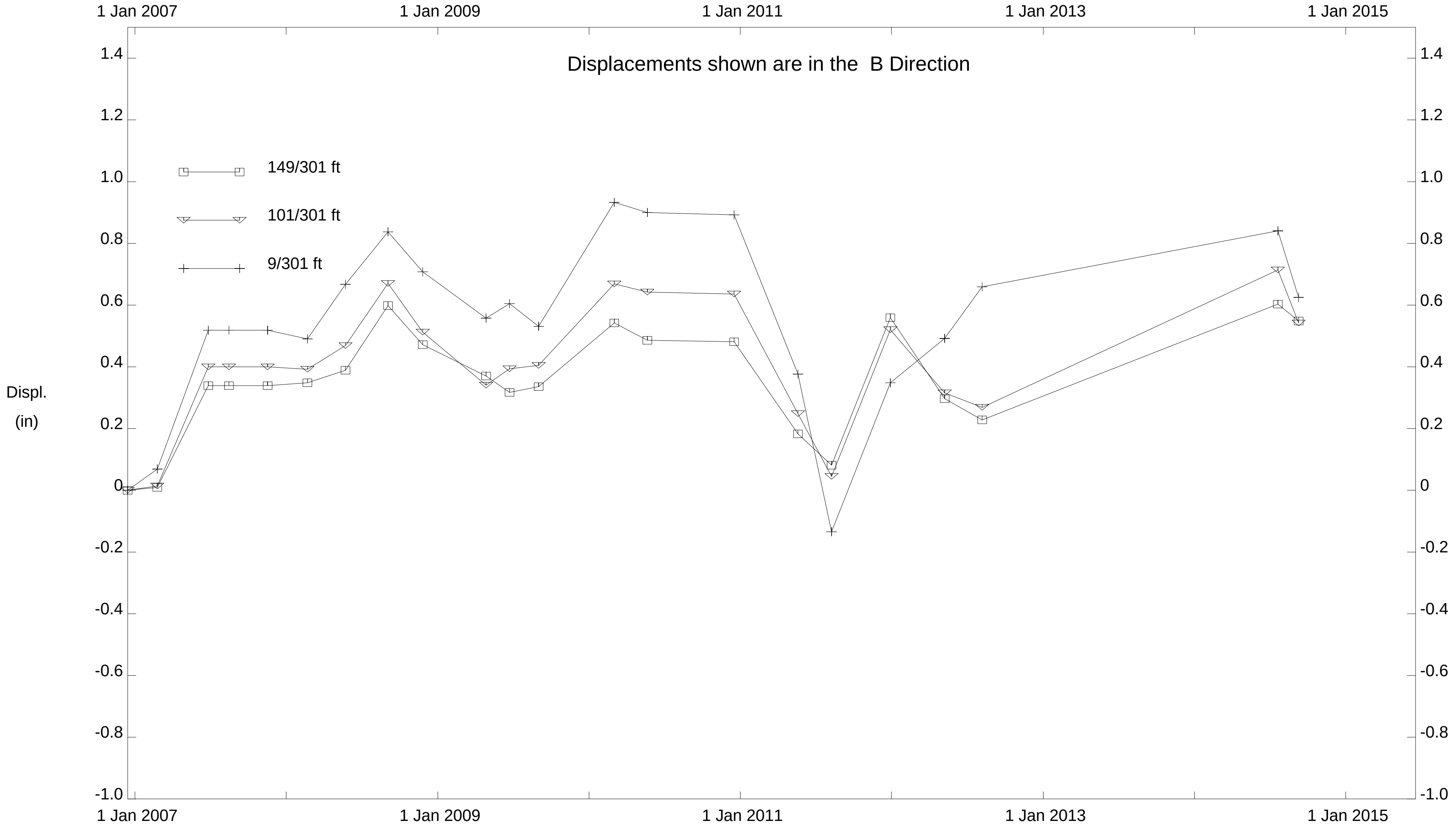
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP35.gtl



BIG ROCK MESA, Inclinometer SP-35

CENTRAL REGION

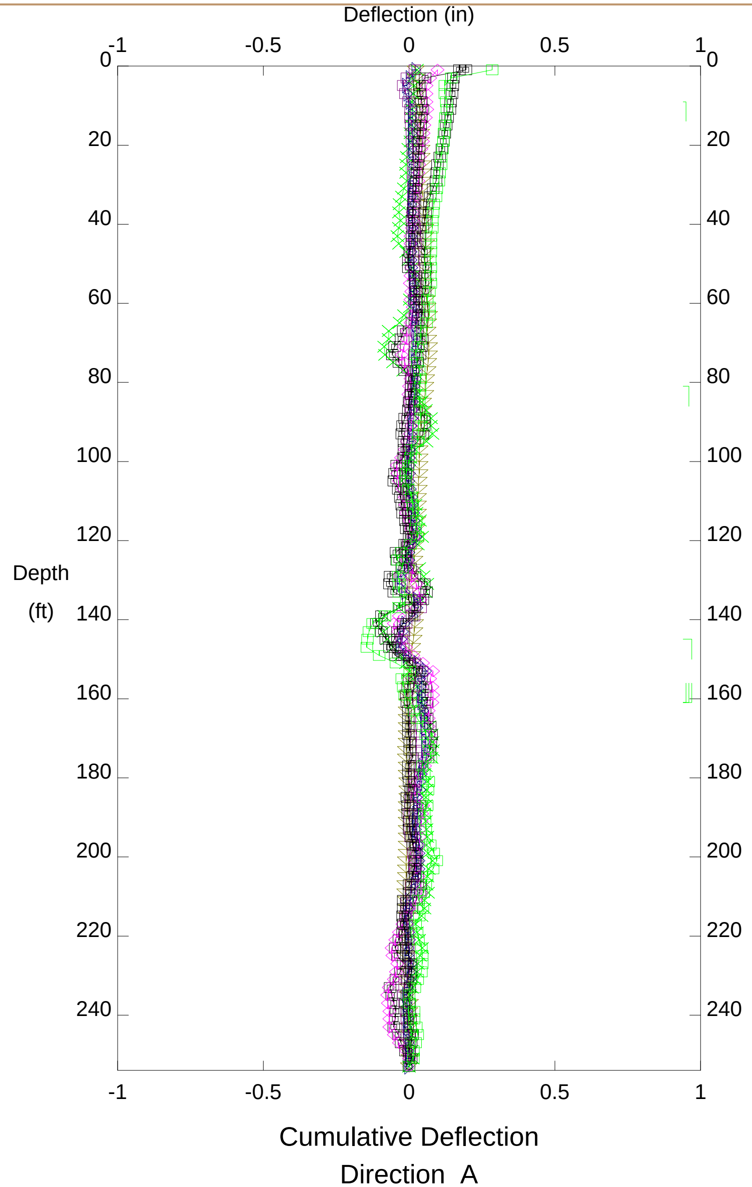
PLATE D-22c



BIG ROCK MESA, Inclinometer SP-35

CENTRAL REGION

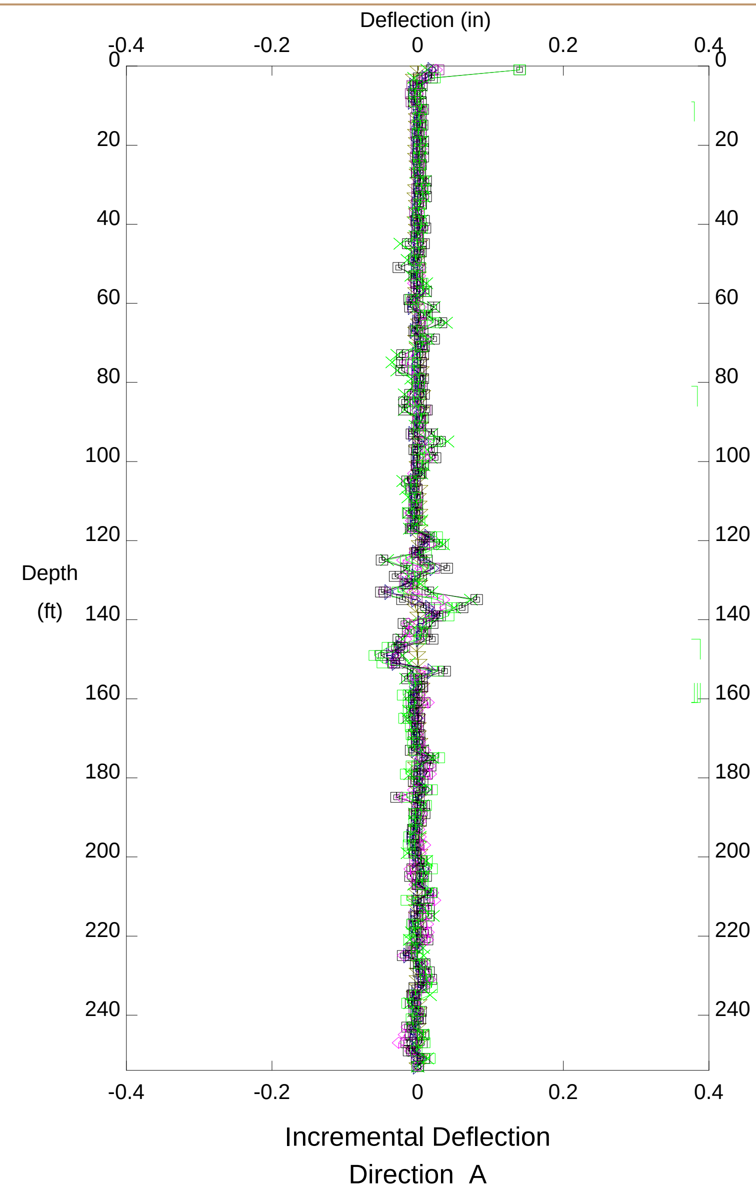
PLATE D-22d



LEGEND

Initial	13 Dec 2006*
	13 Nov 2007*
	14 Nov 2008*
	16 Dec 2009*
	14 Mar 2011*
	11 Jan 2012*
	17 Dec 2012*
	17 Jul 2014*
	11 Sep 2014*

Ref. Elevation 380 ft



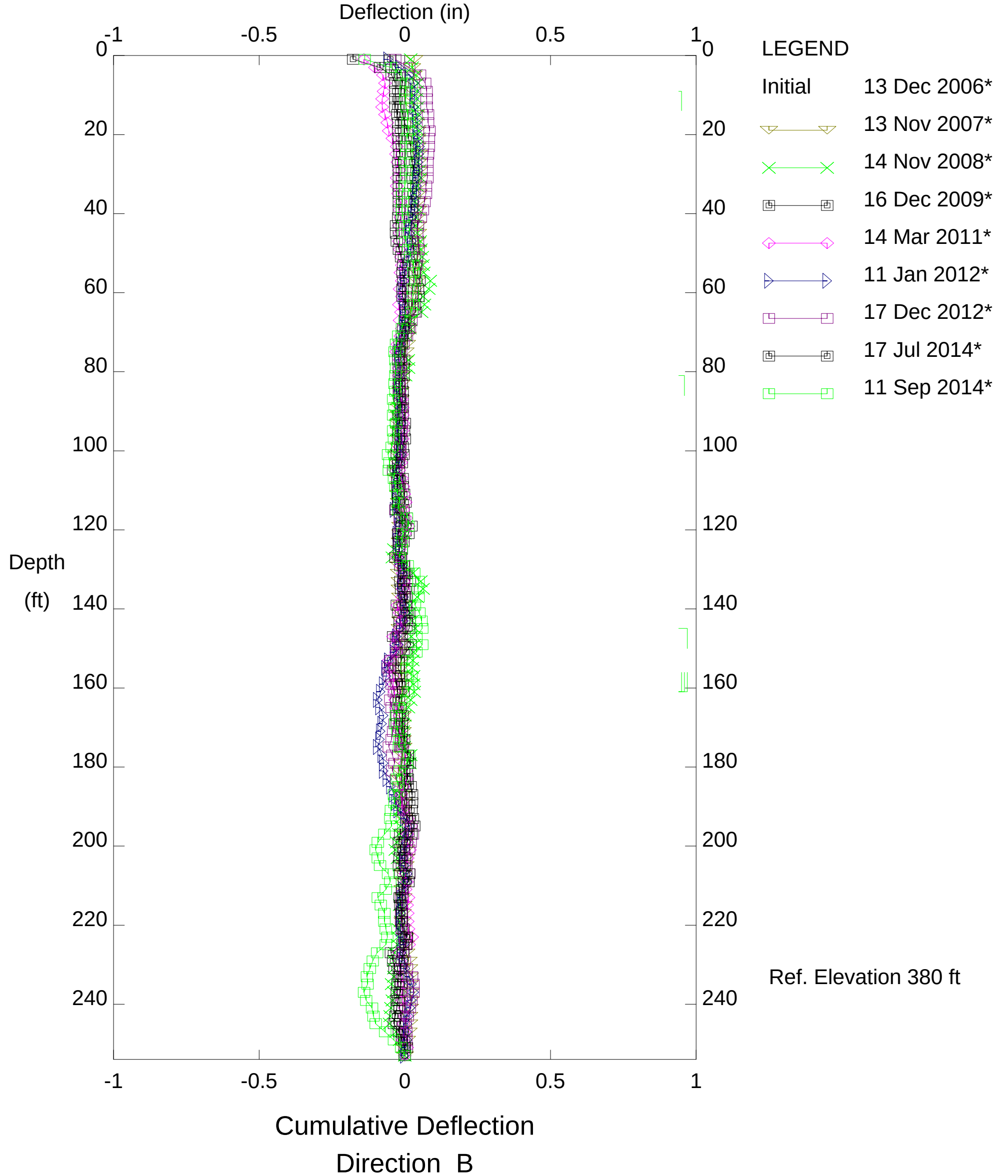
BIG ROCK MESA, Inclinometer SP-36

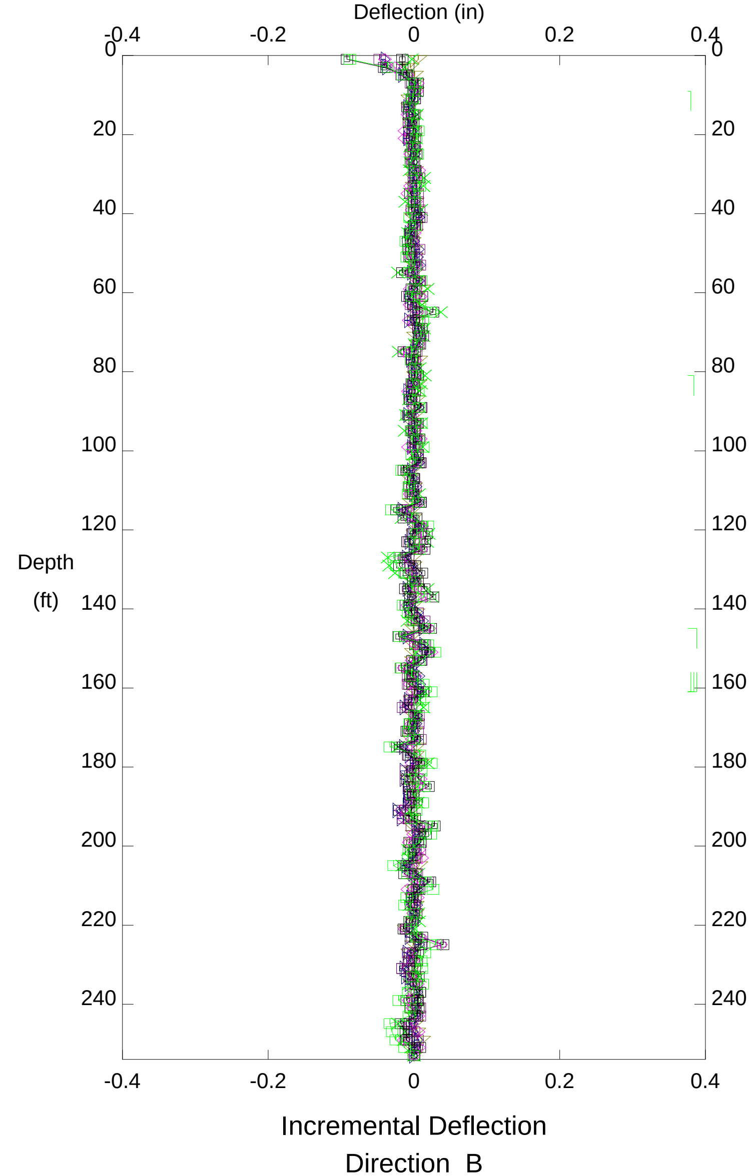
CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-23a

Fugro Consultants, Inc. - Ventura, CA





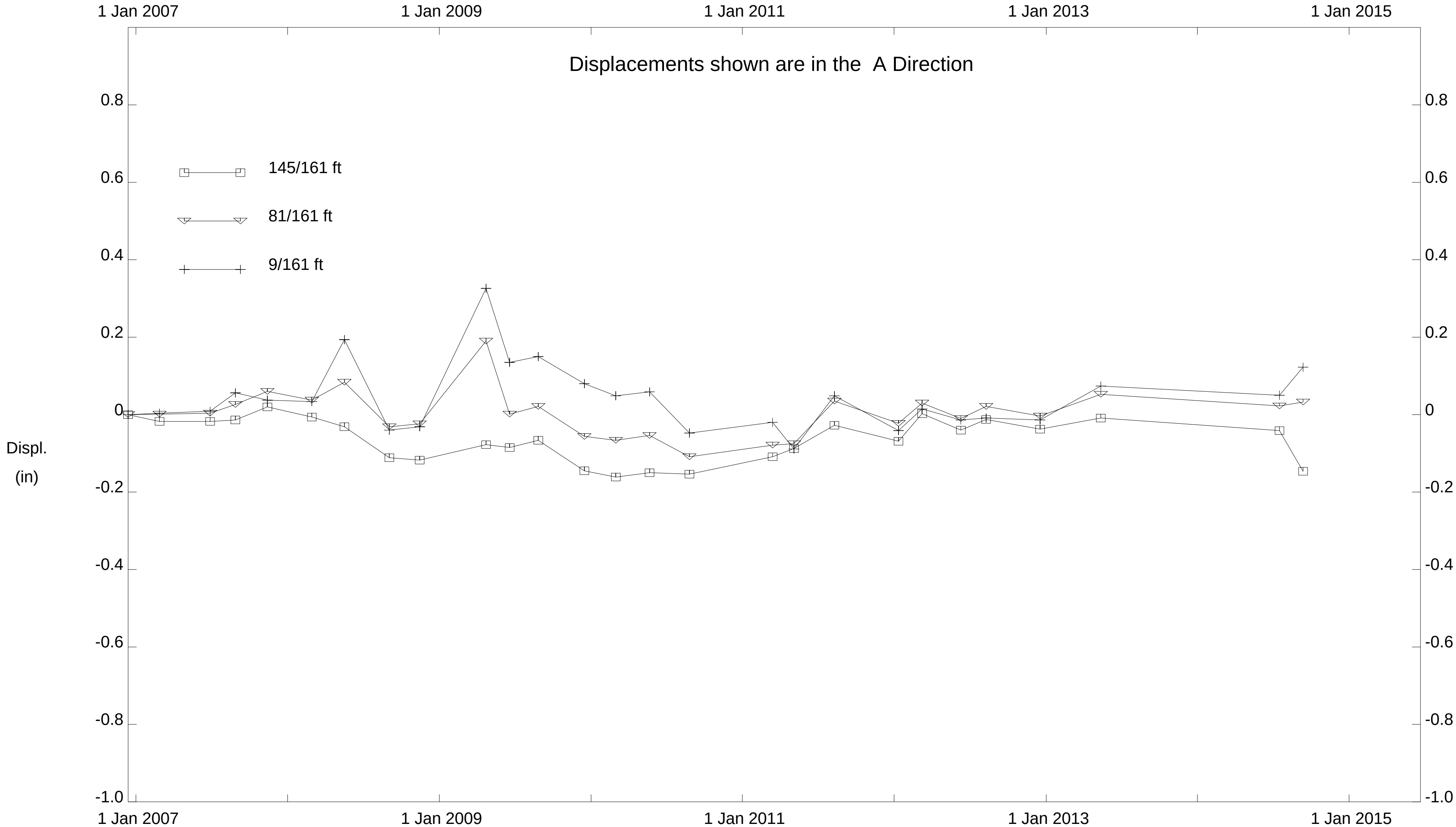
BIG ROCK MESA, Inclinometer SP-36

CENTRAL REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-23b

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP36.gtl

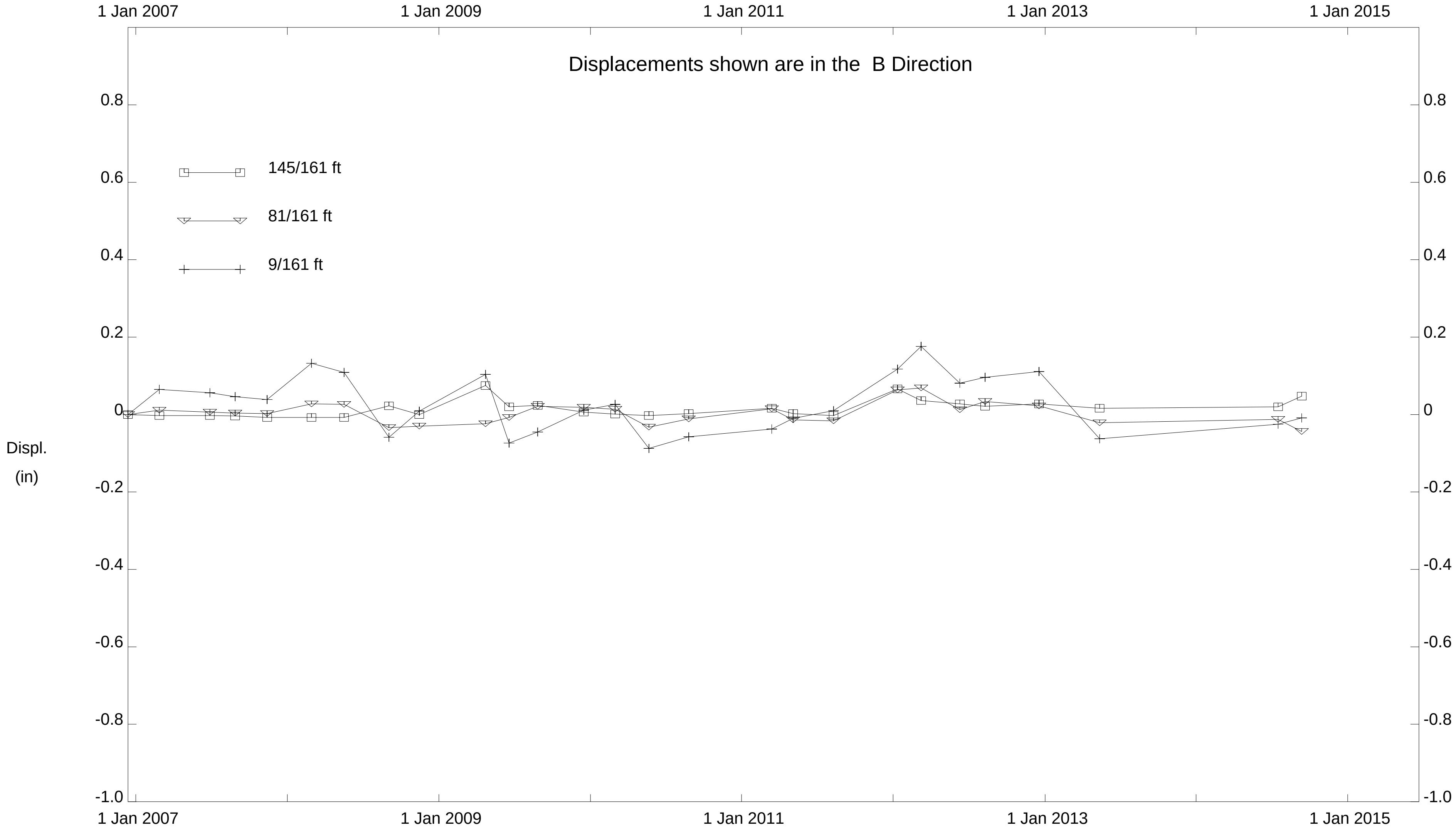


BIG ROCK MESA, Inclinometer SP-36

CENTRAL REGION

PLATE D-23c

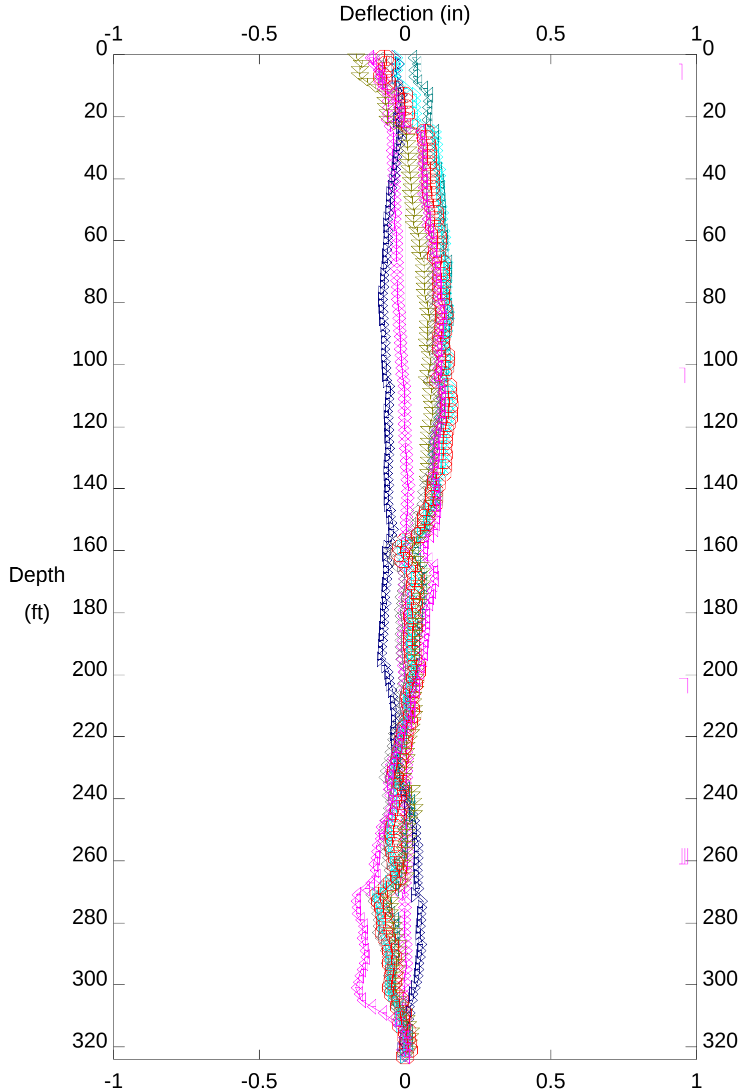
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-36

CENTRAL REGION

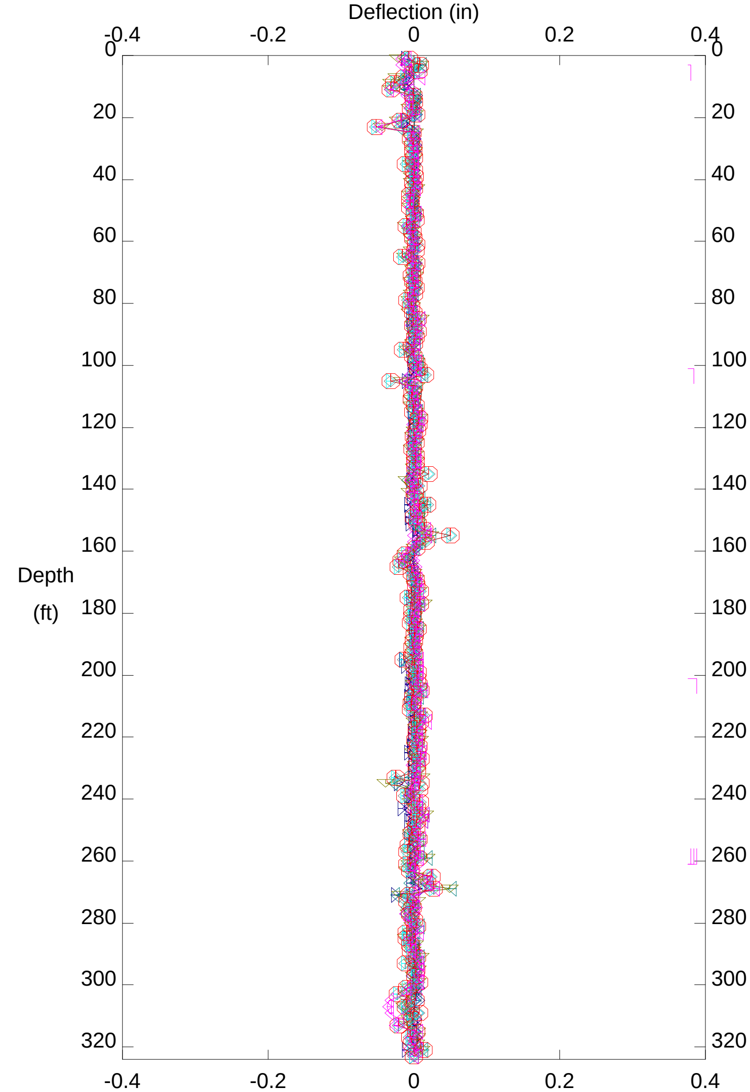
PLATE D-23d



LEGEND

Initial	14 Dec 2006*
	1 Dec 2007*
	2 Dec 2008*
	1 Dec 2009*
	18 May 2011*
	8 May 2012*
	10 Dec 2013*
	8 May 2014*
	24 Jul 2014*

Ref. Elevation 430 ft



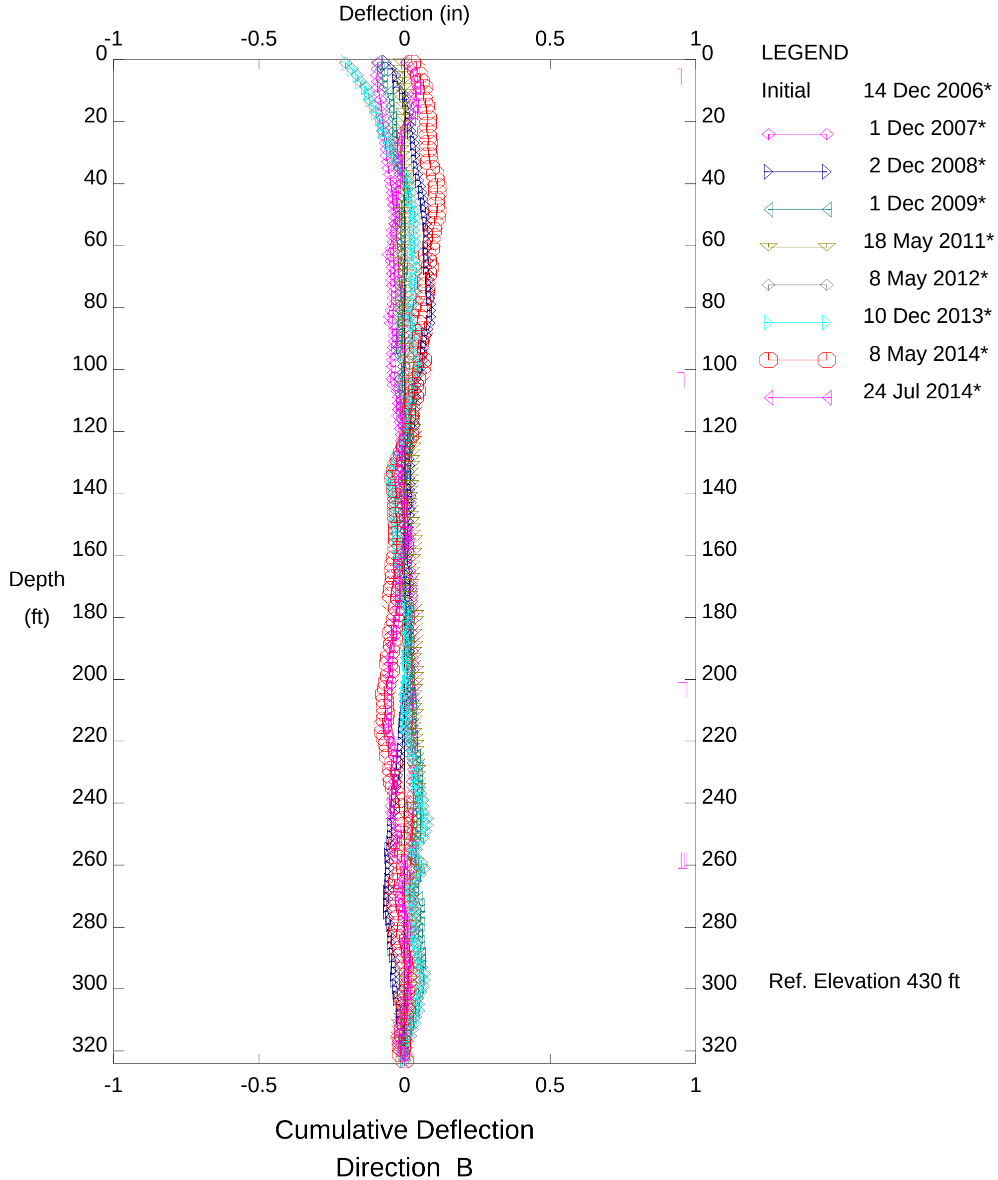
BIG ROCK MESA, Inclinometer SP-20

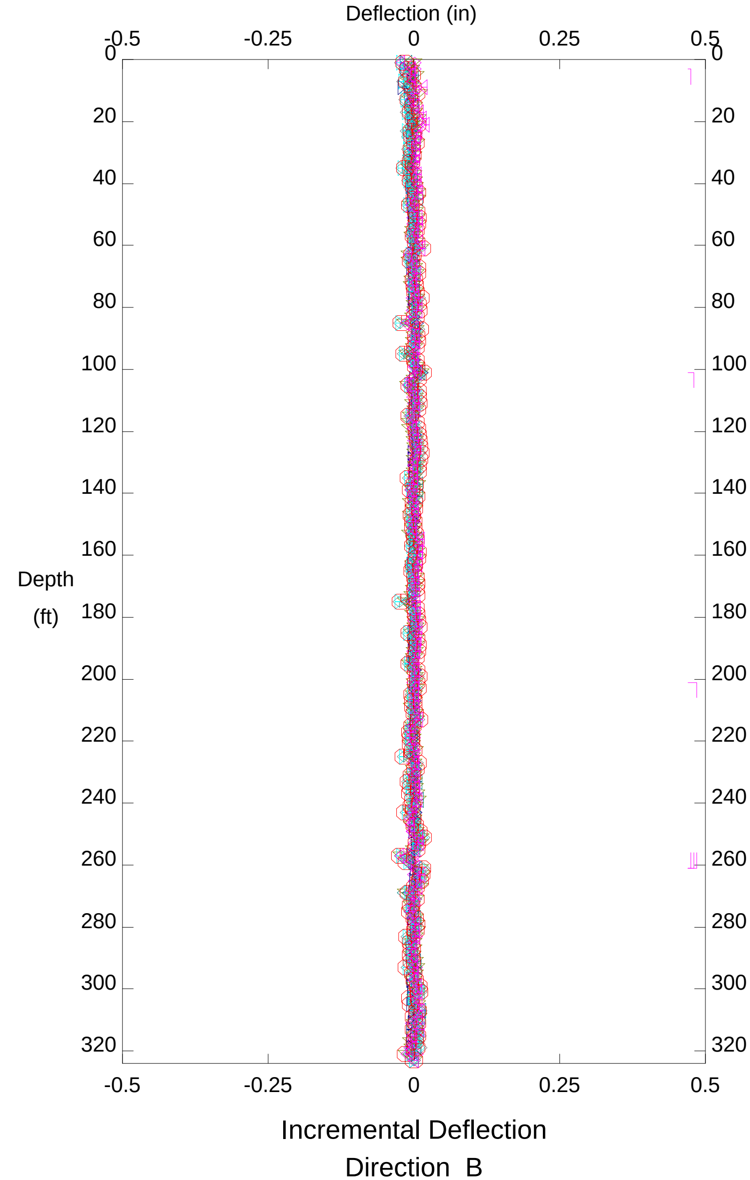
WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-24a

Fugro Consultants, Inc. - Ventura, CA





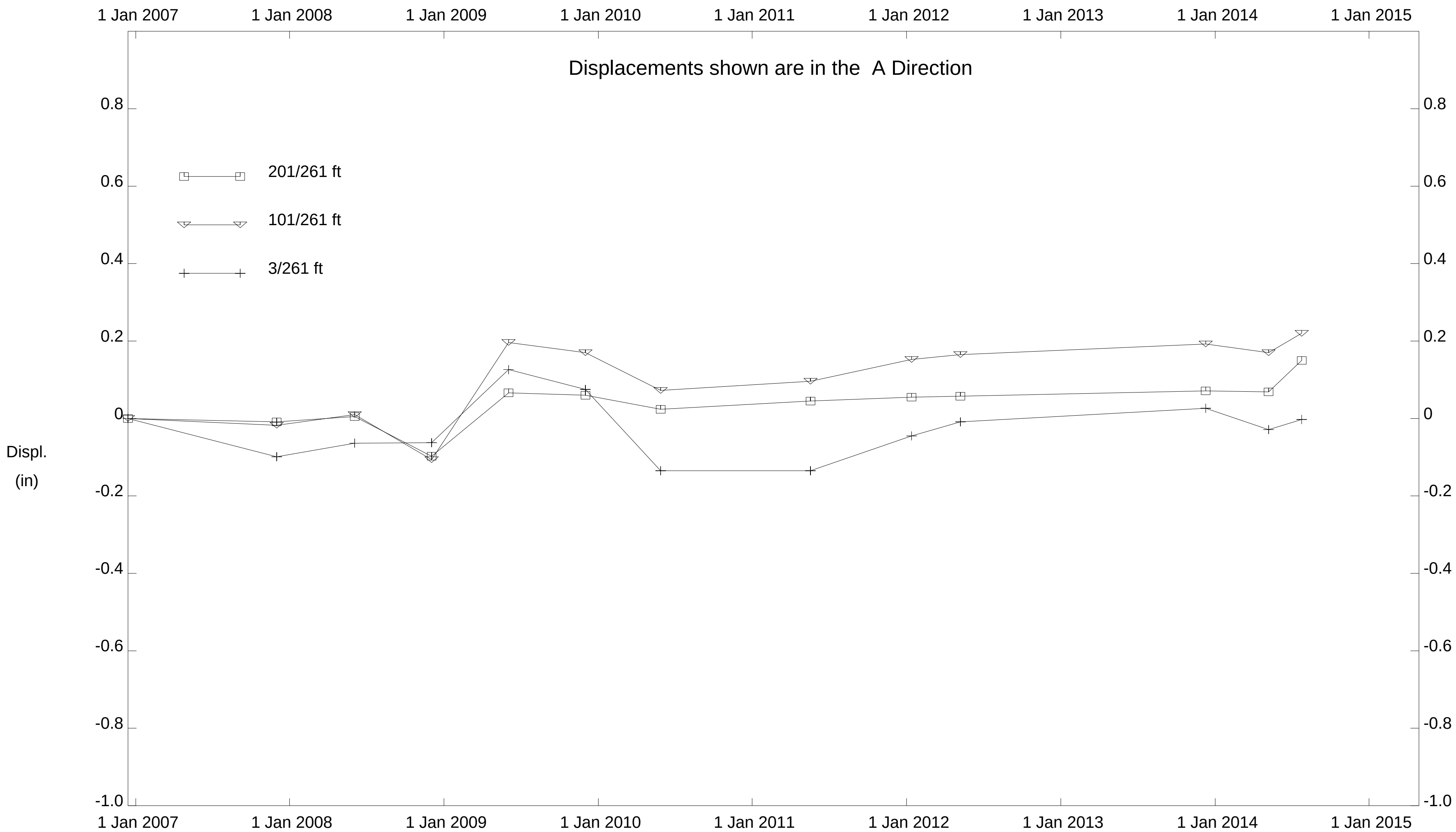
BIG ROCK MESA, Inclinometer SP-20

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-24b

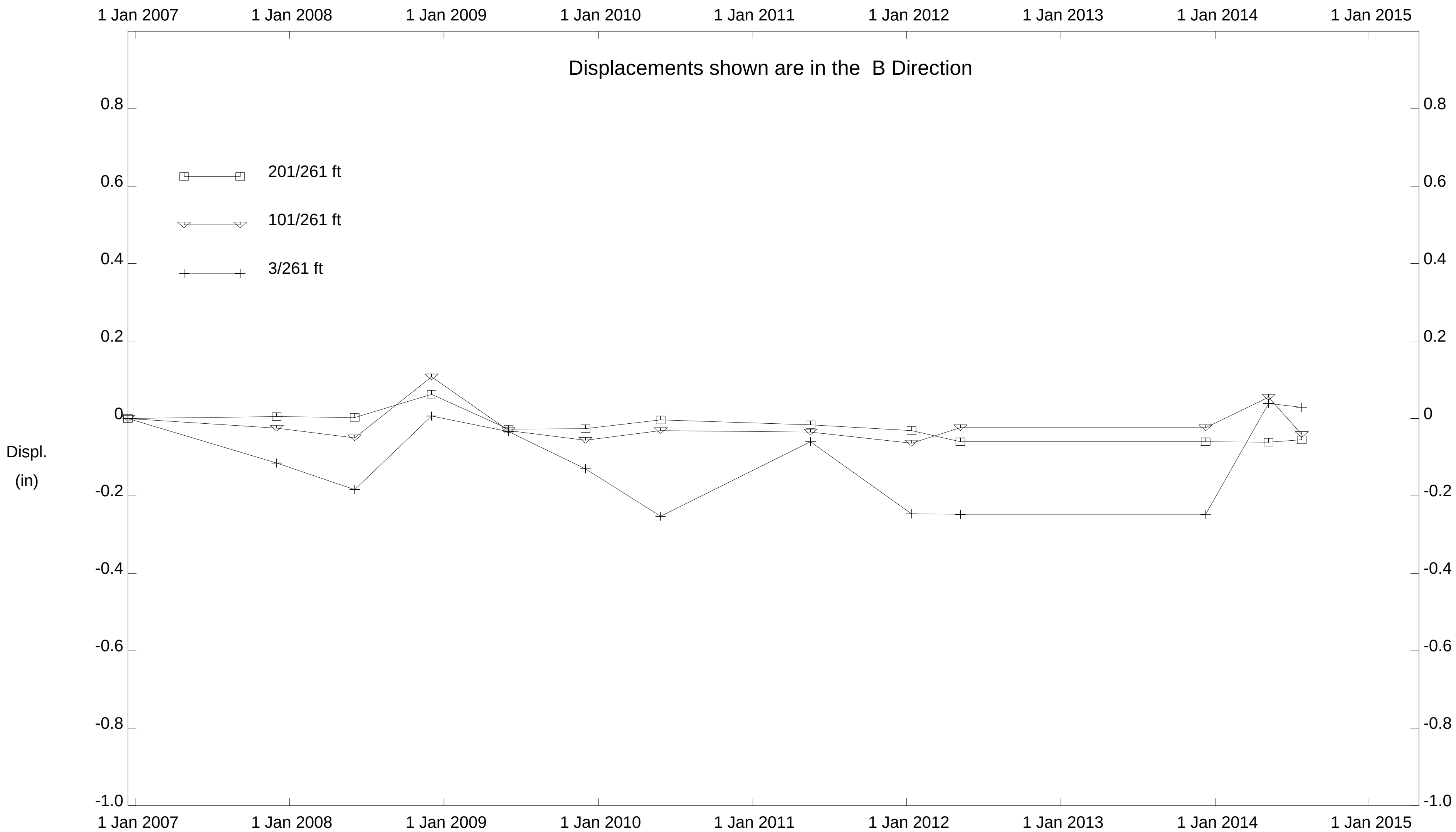
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP20.gtl



BIG ROCK MESA, Inclinometer SP-20

WESTERN REGION

PLATE D-24c

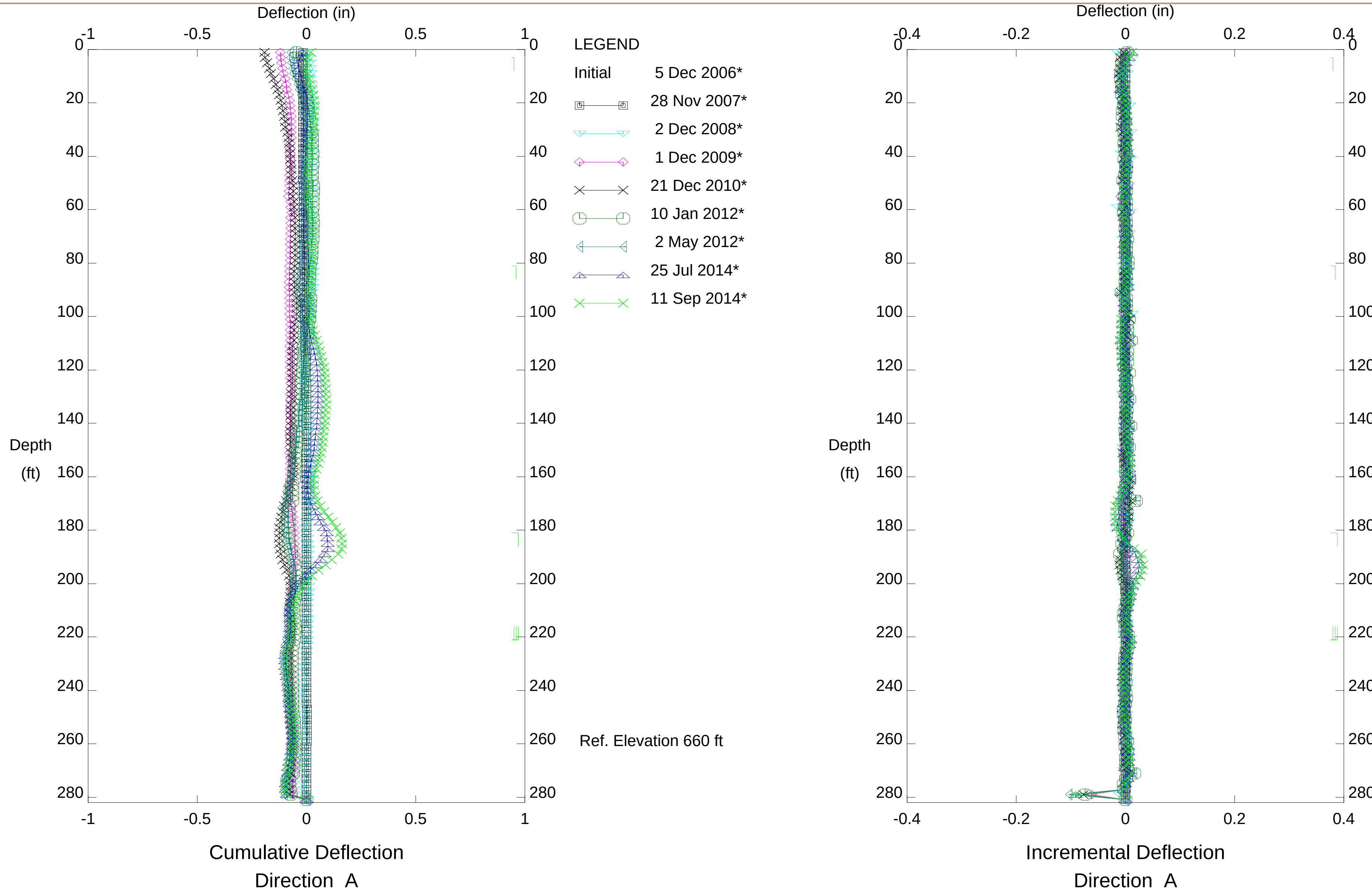


BIG ROCK MESA, Inclinometer SP-20

WESTERN REGION

PLATE D-24d

Fugro Consultants, Inc. - Ventura, CA

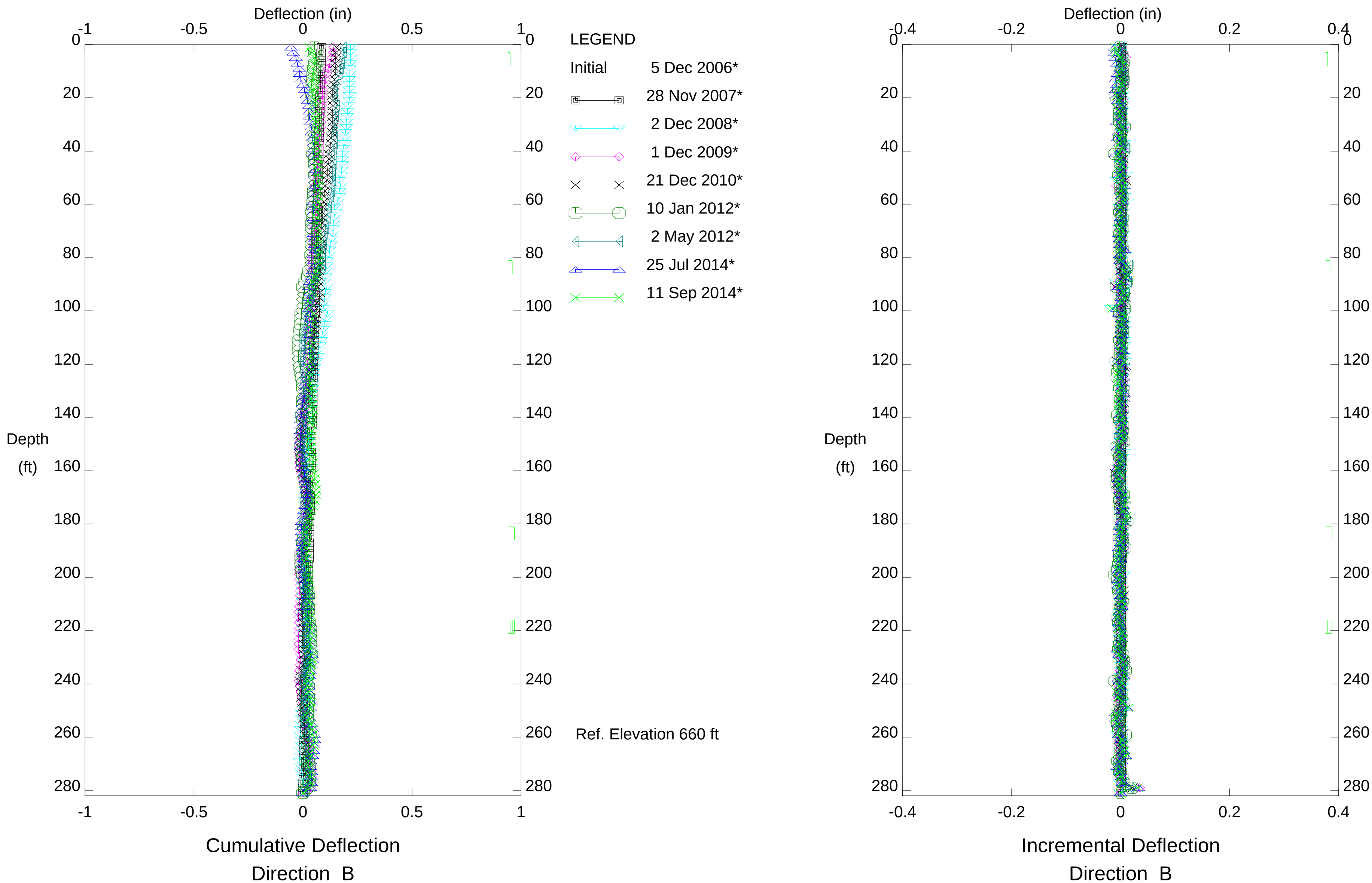


BIG ROCK MESA, Inclinometer SP-21

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-25a

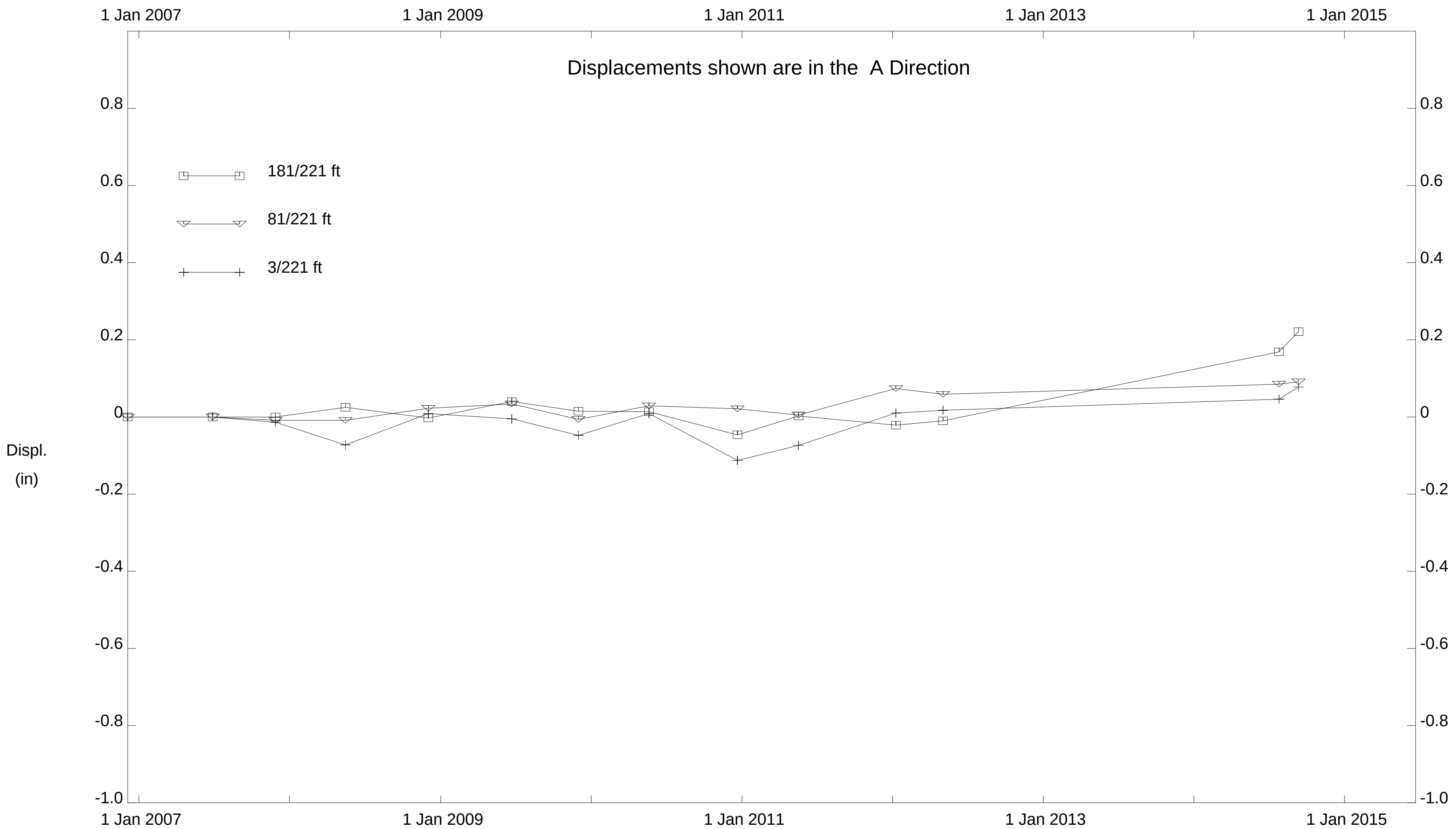


BIG ROCK MESA, Inclinometer SP-21

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

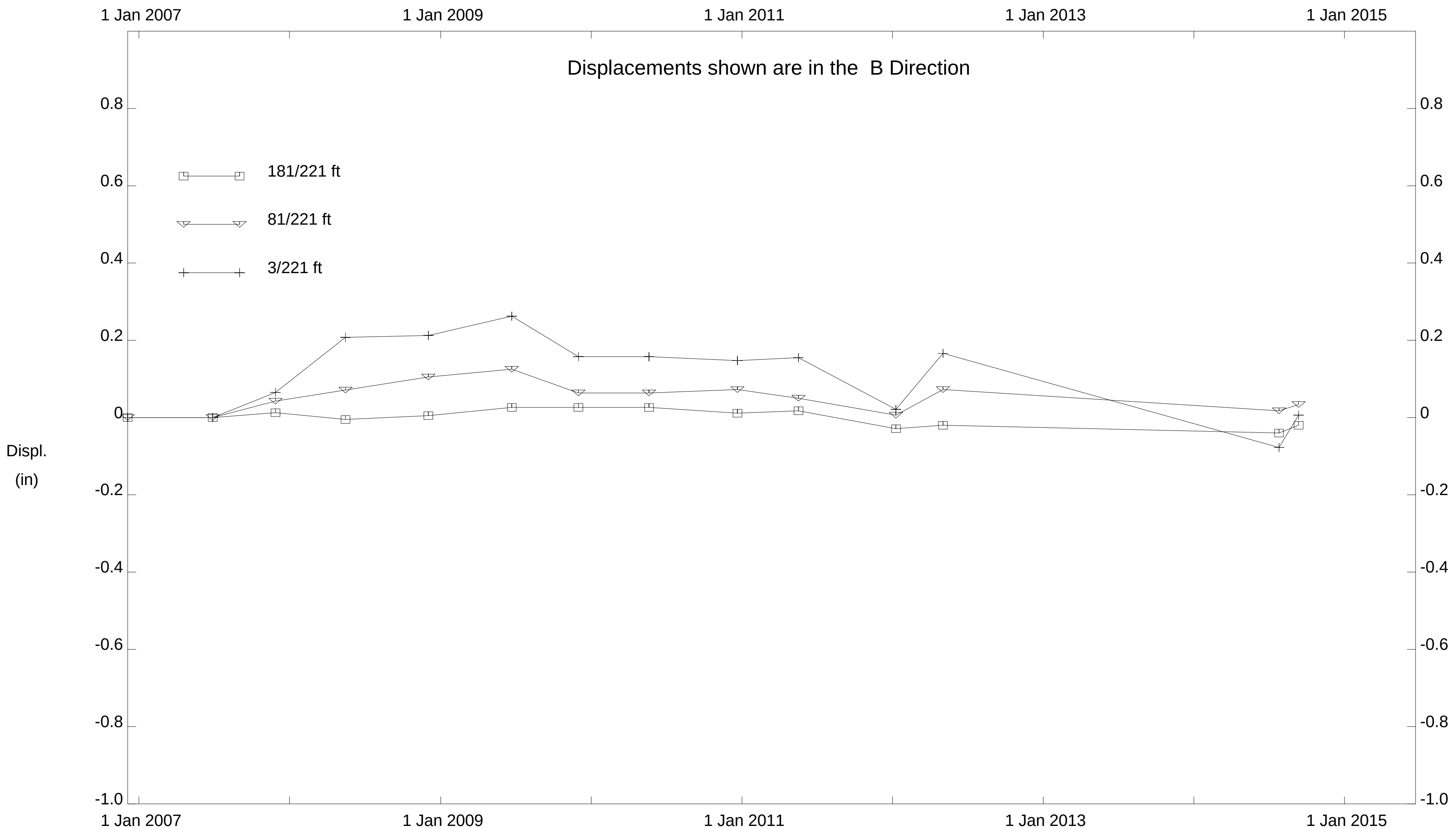
PLATE D-25b



BIG ROCK MESA, Inclinometer SP-21

WESTERN REGION

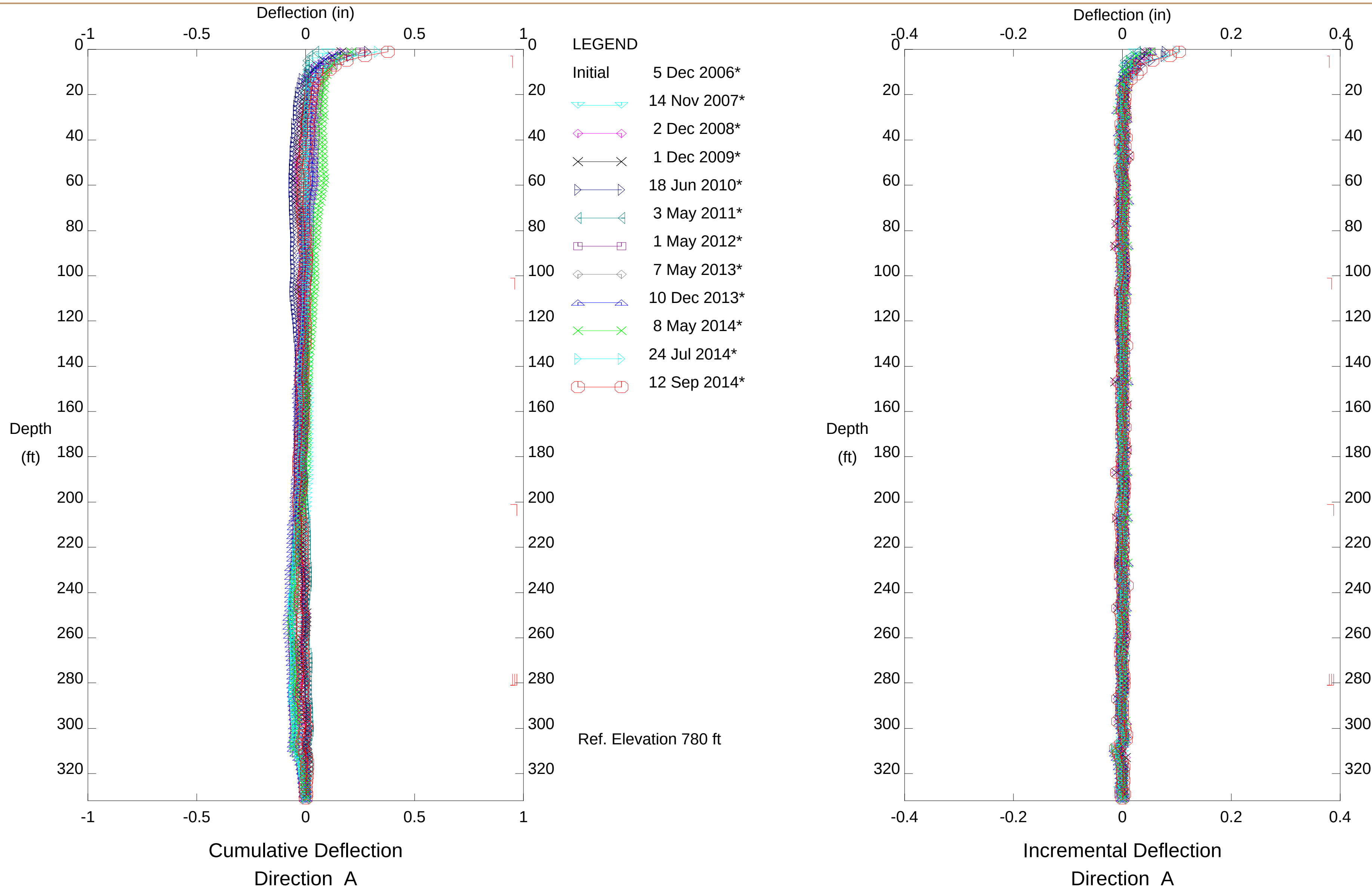
PLATE D-25c



BIG ROCK MESA, Inclinometer SP-21

WESTERN REGION

PLATE D-25d

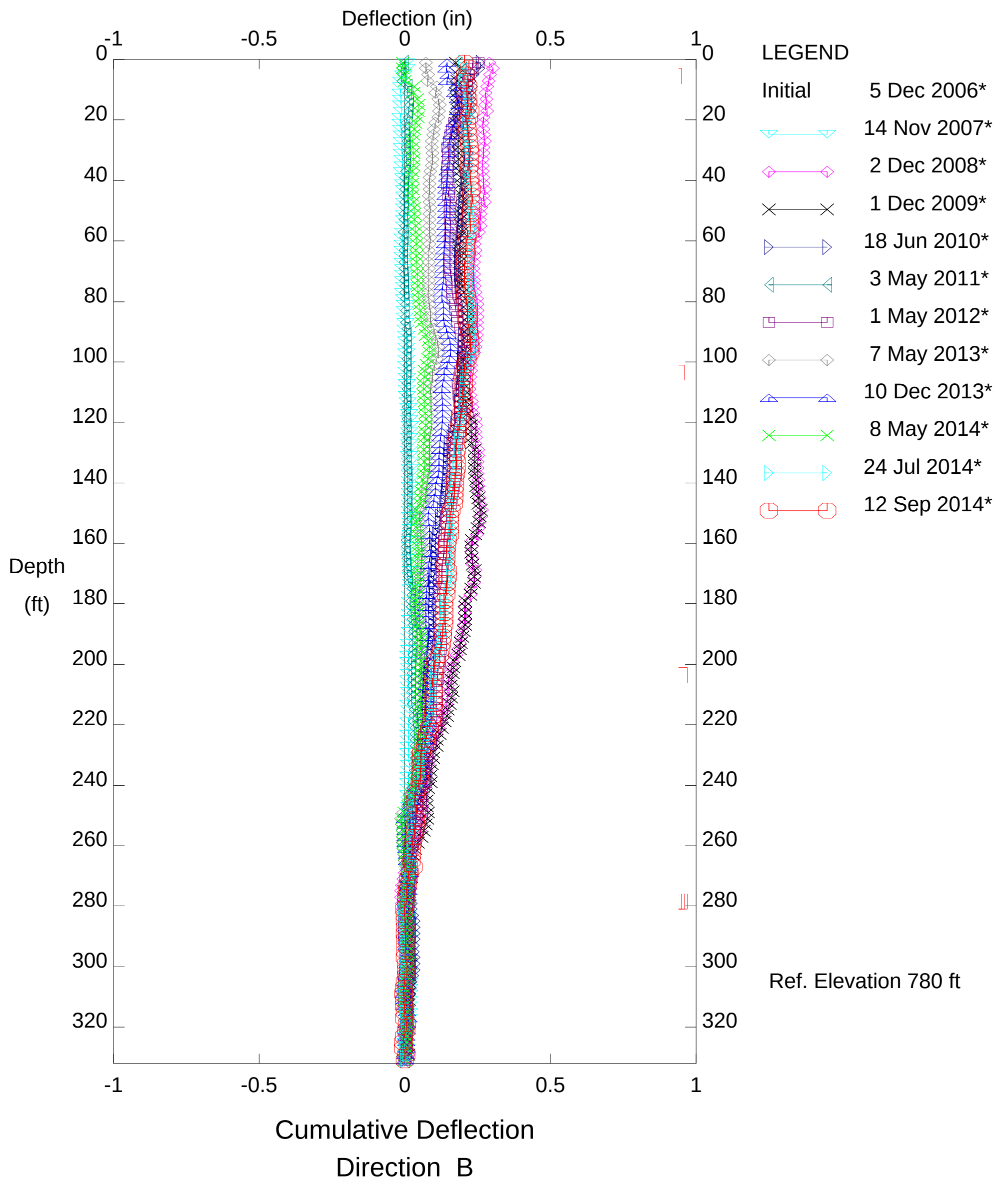


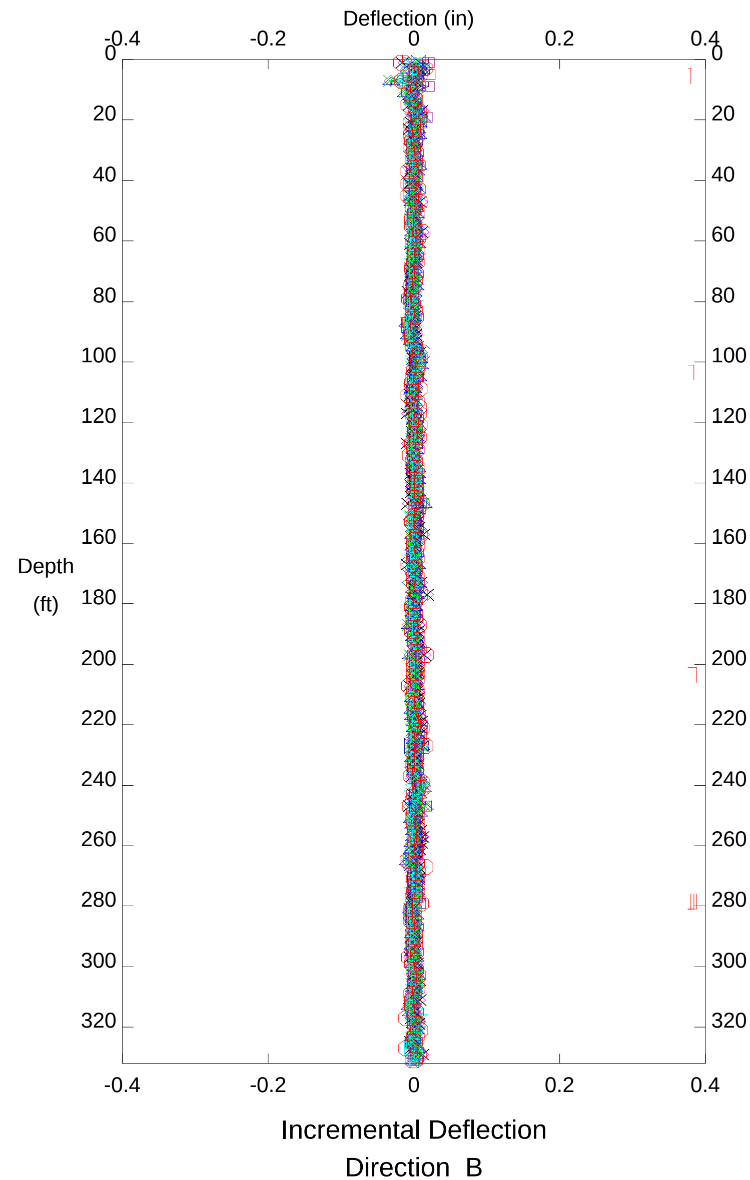
BIG ROCK MESA, Inclinometer SP-22

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-26a





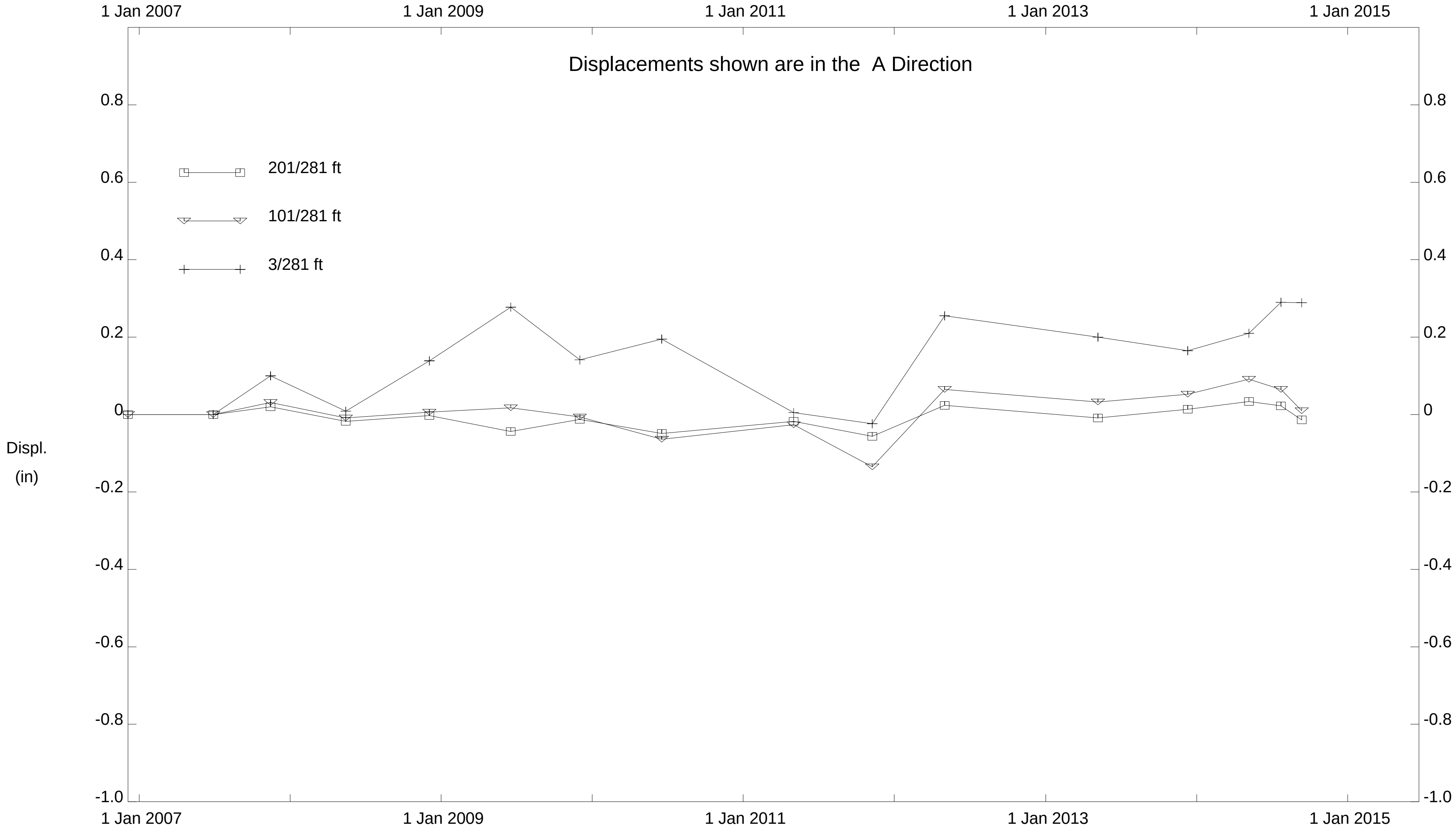
BIG ROCK MESA, Inclinometer SP-22

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-26b

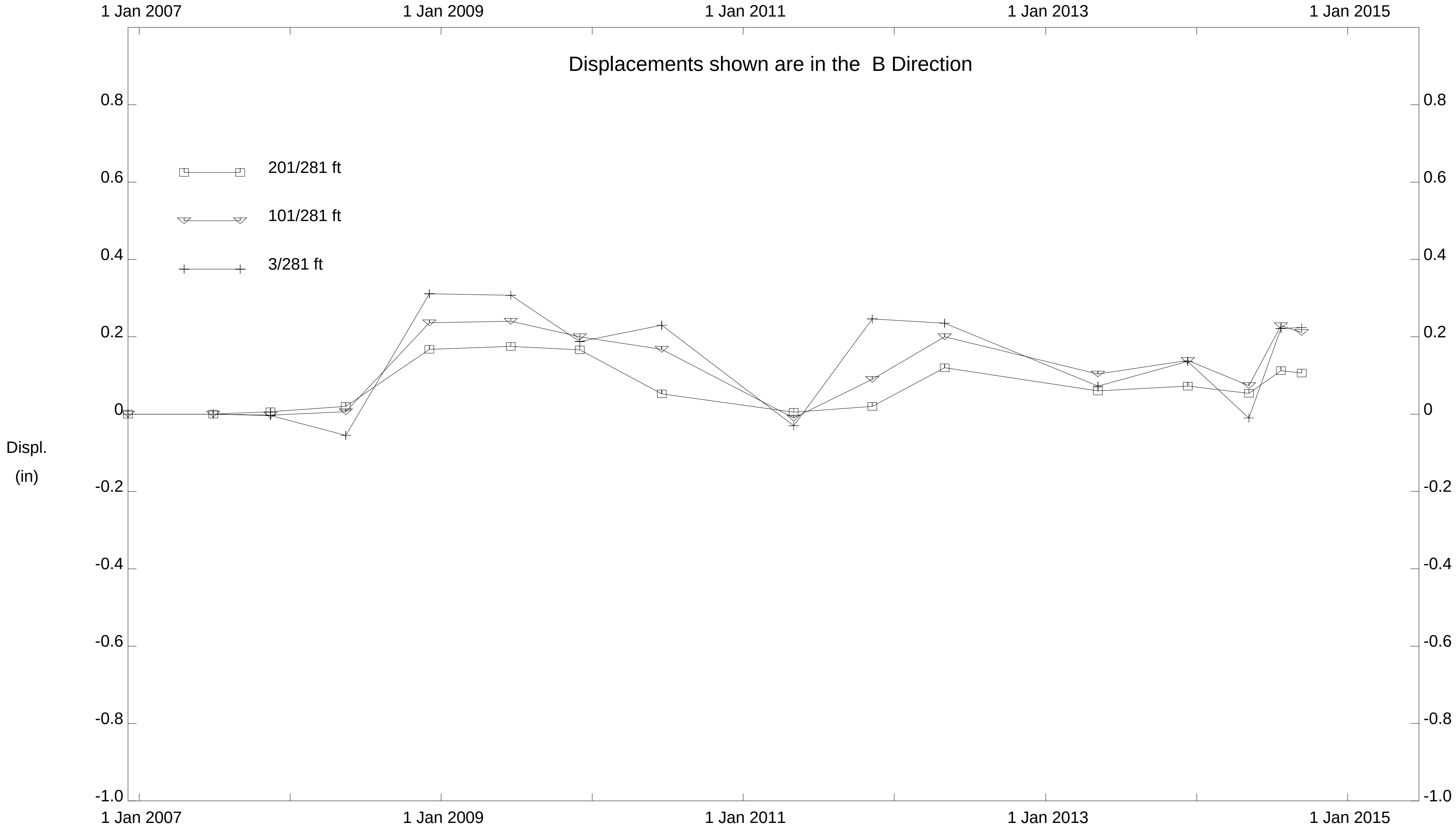
Fugro Consultants, Inc. - Ventura, CA



BIG ROCK MESA, Inclinometer SP-22

WESTERN REGION

PLATE D-26c

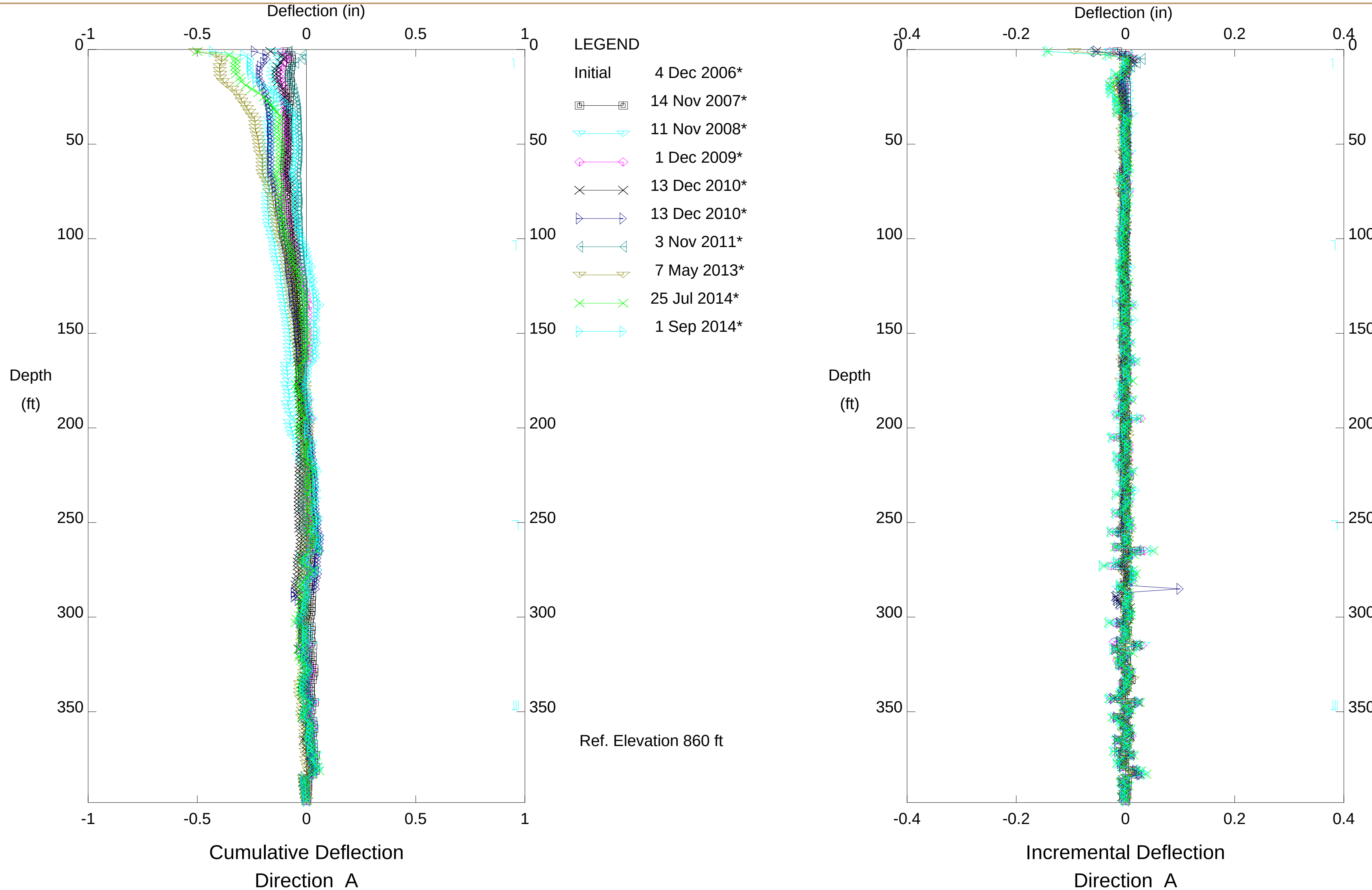


BIG ROCK MESA, Inclinometer SP-22

WESTERN REGION

PLATE D-26d

Fugro Consultants, Inc. - Ventura, CA



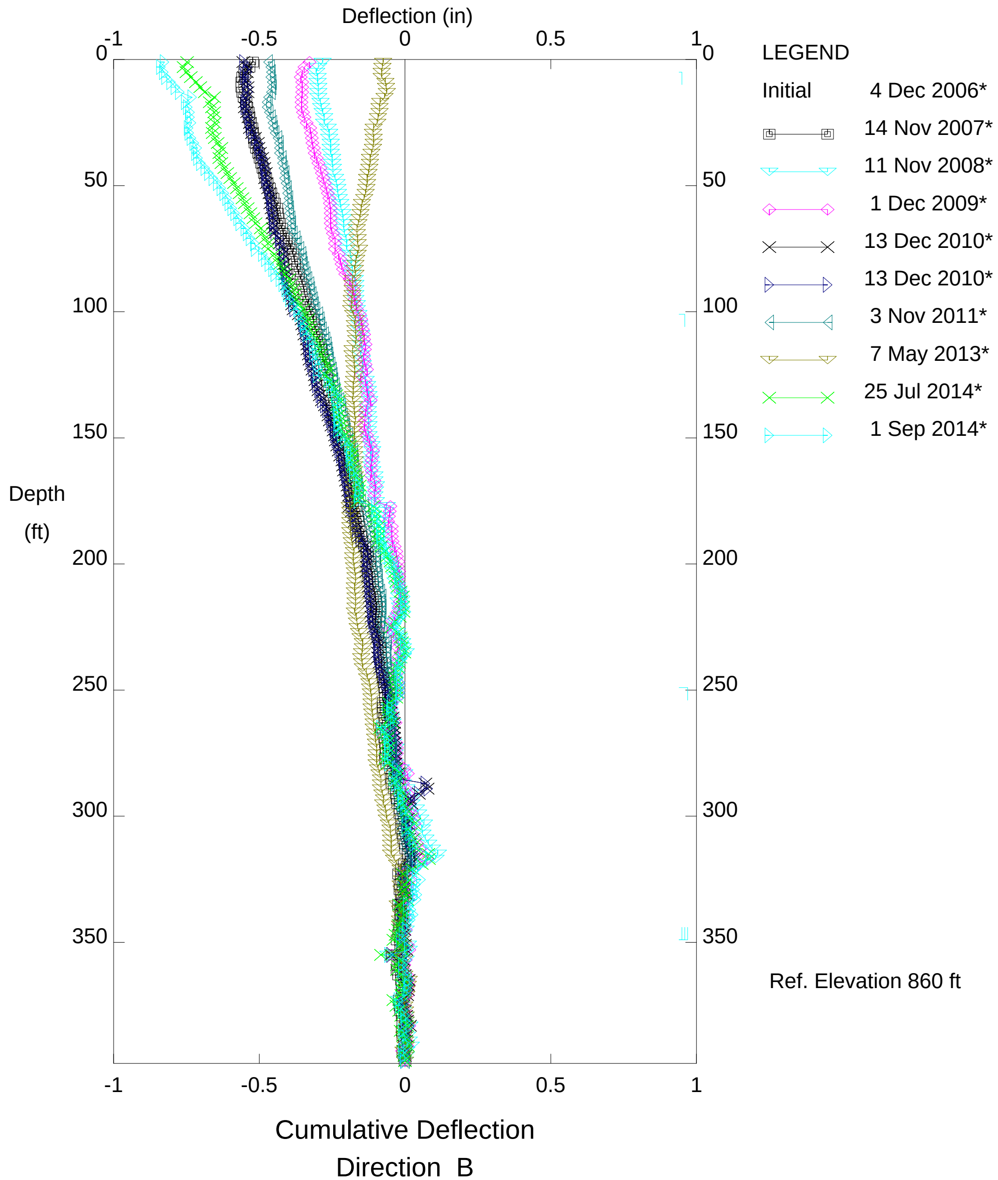
BIG ROCK MESA, Inclinometer SP-23

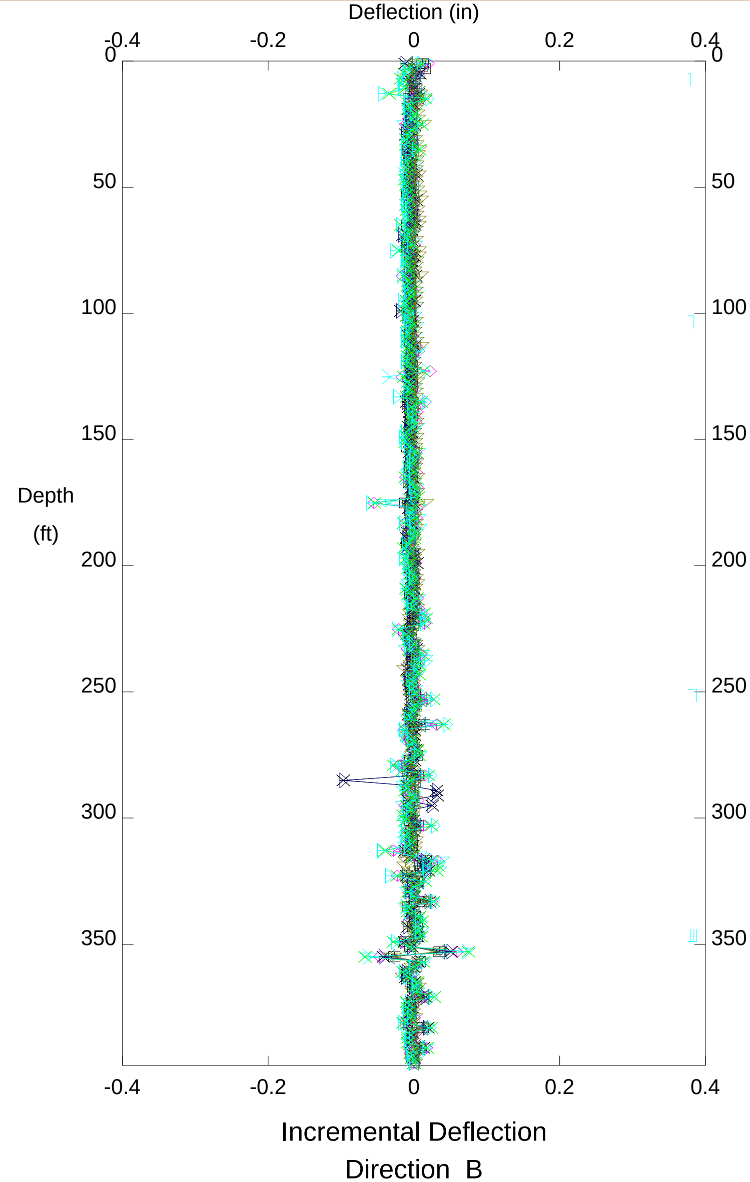
WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-27a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP23.gtl



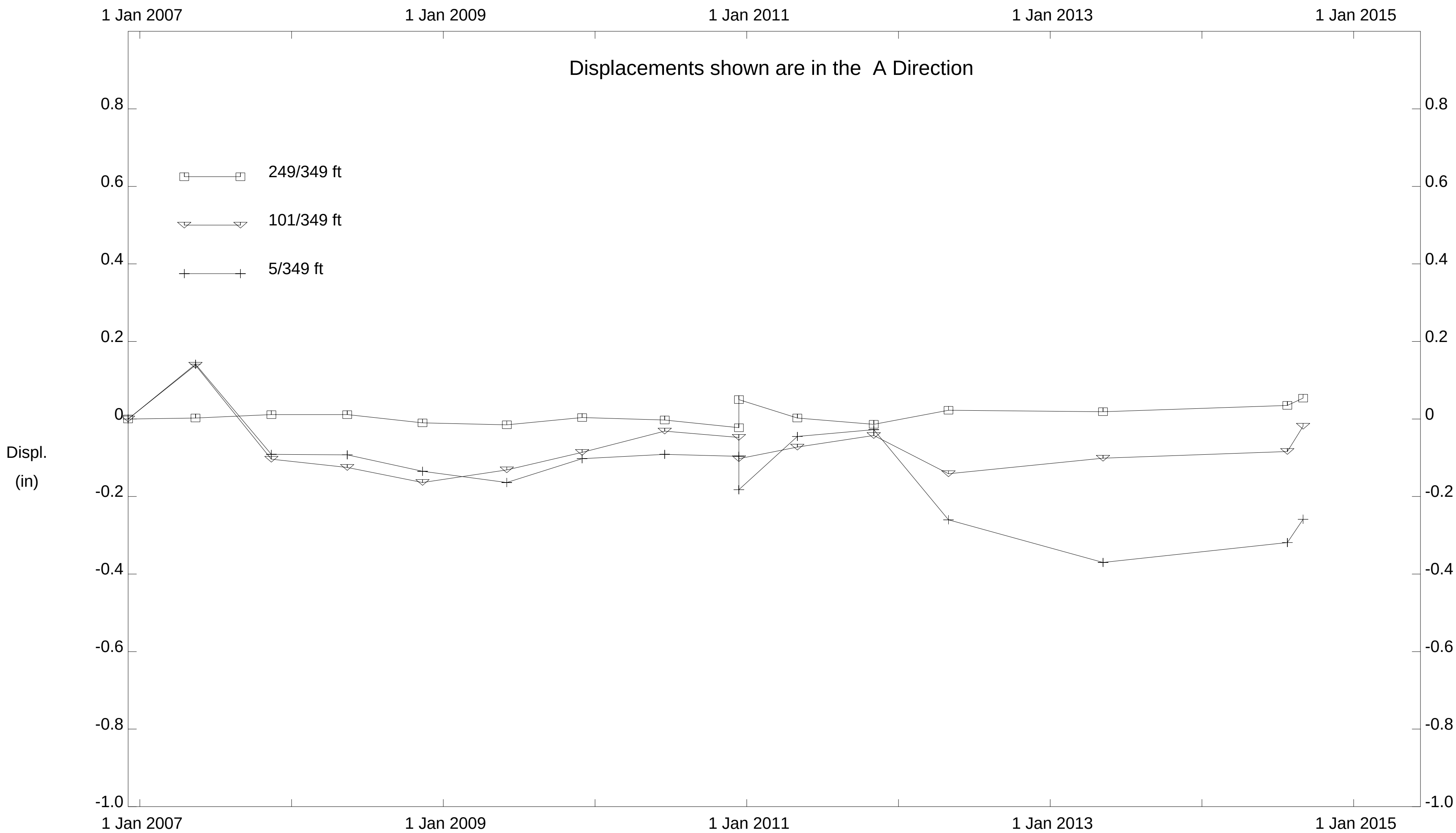


BIG ROCK MESA, Inclinometer SP-23

WESTERN REGION

Sets marked * include zero shift and/or rotation corrections.

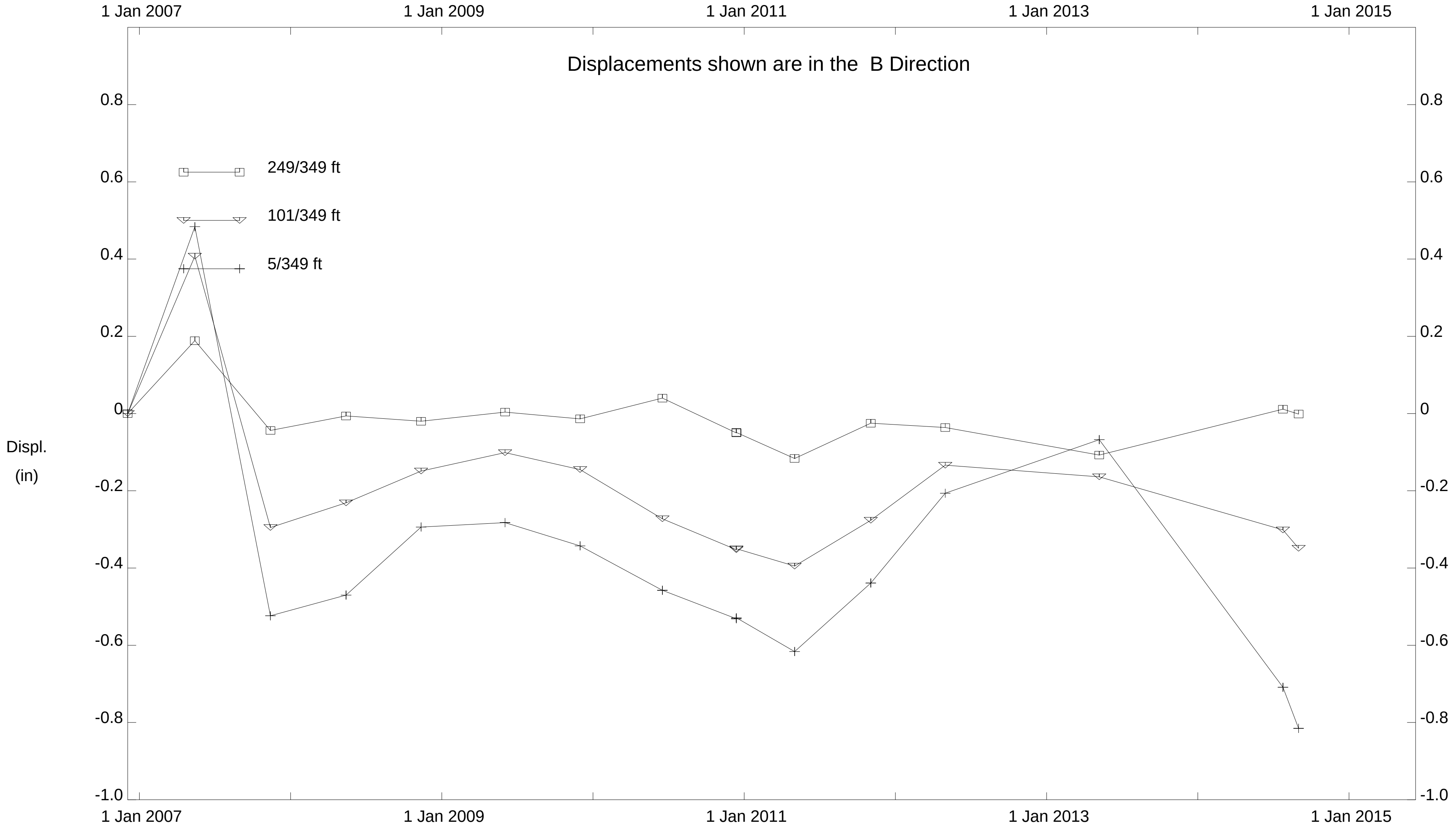
PLATE D-27b



BIG ROCK MESA, Inclinometer SP-23

WESTERN REGION

PLATE D-27c

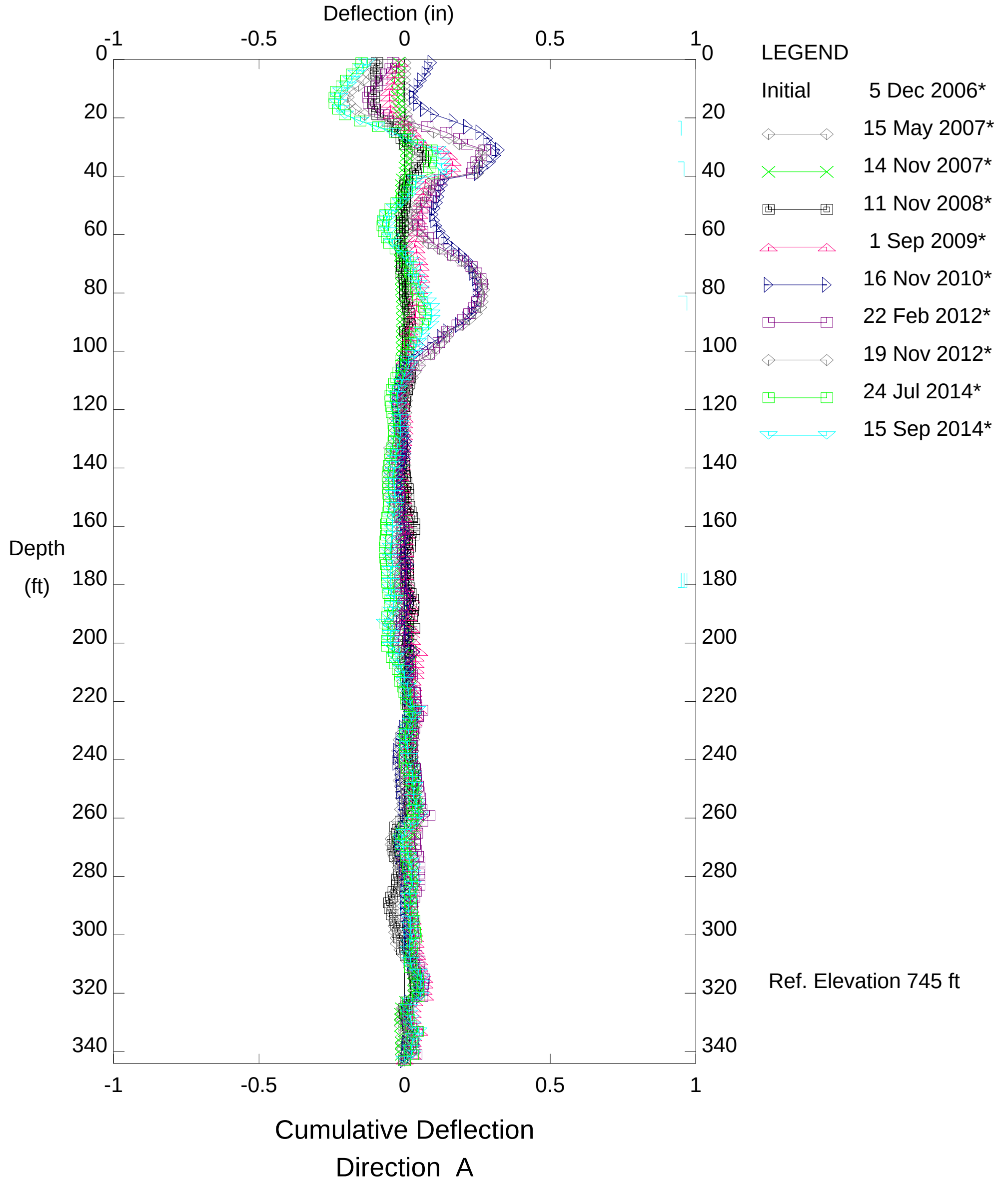


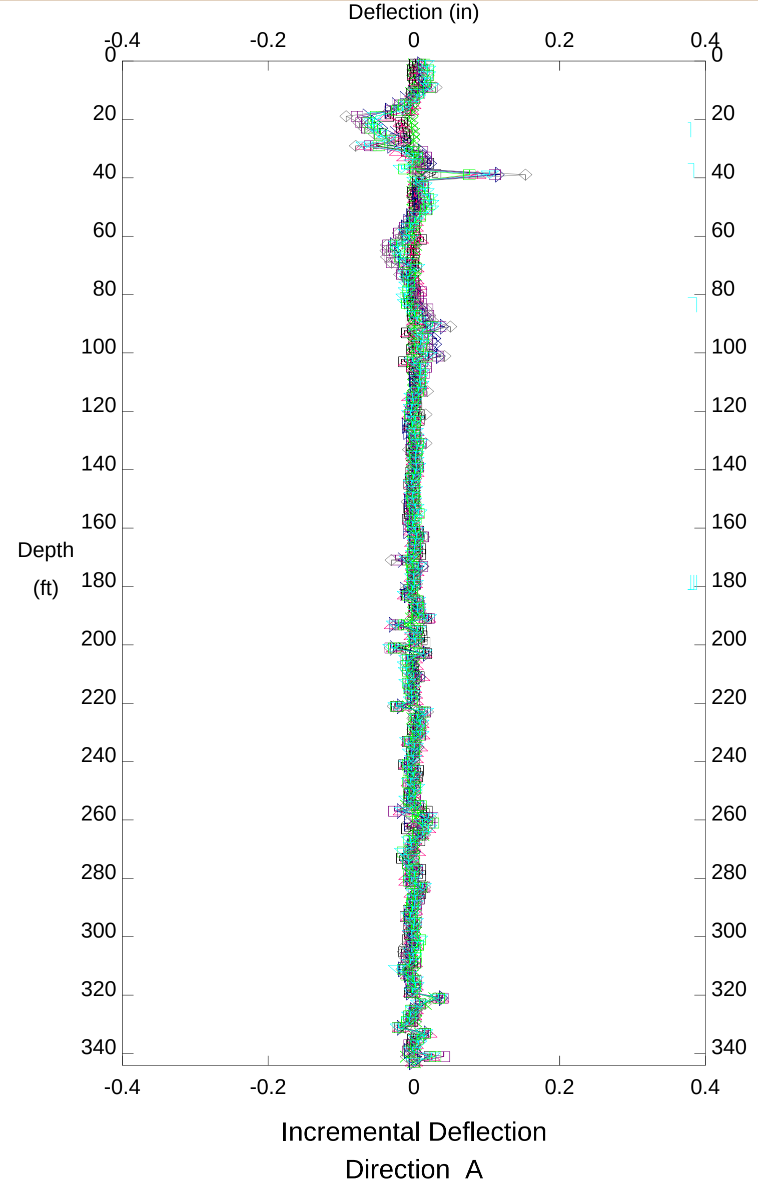
BIG ROCK MESA, Inclinometer SP-23

WESTERN REGION

PLATE D-27d

Fugro Consultants, Inc. - Ventura, CA





BIG ROCK MESA, Inclinometer SP-26

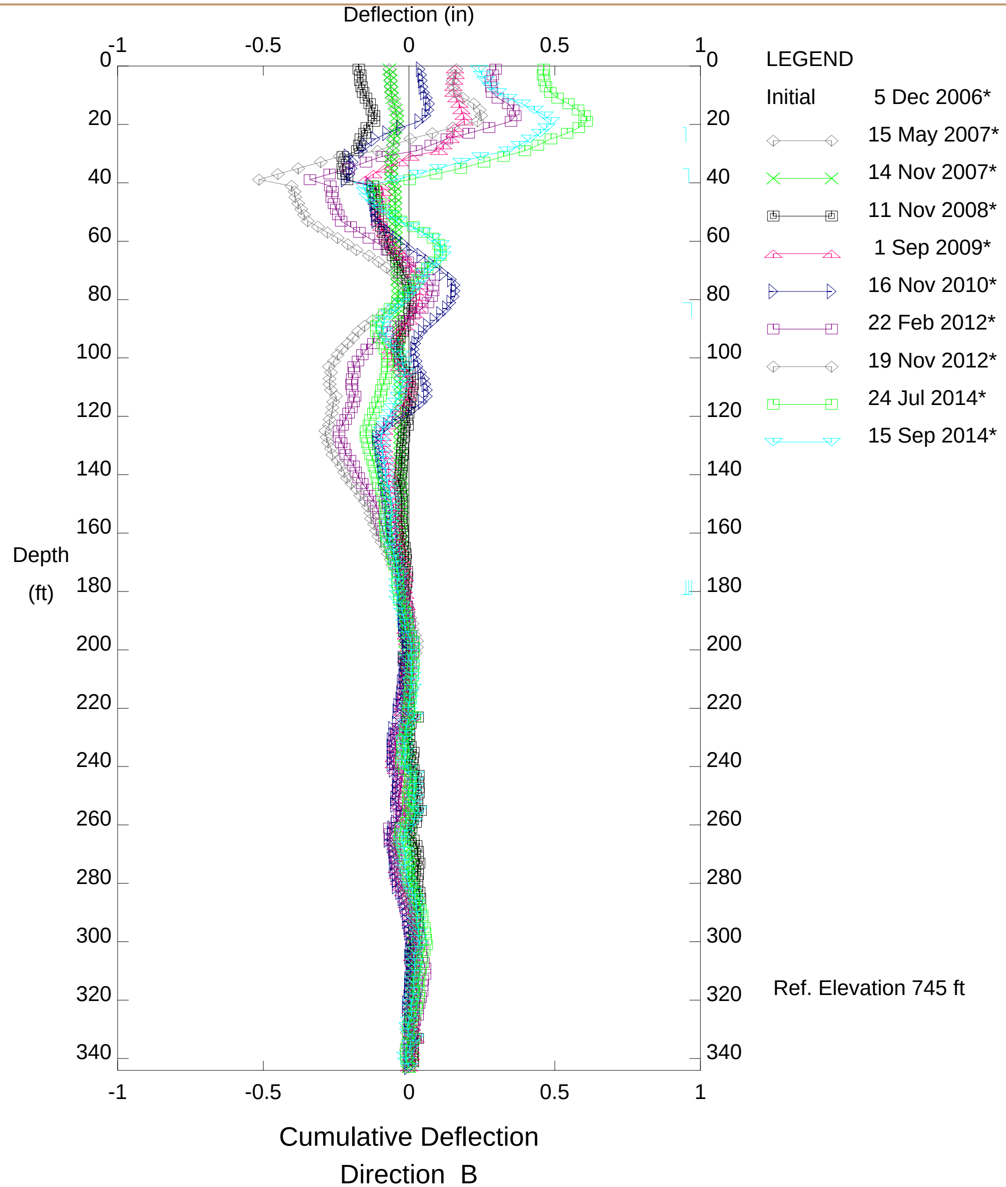
HEADSCARP REGION

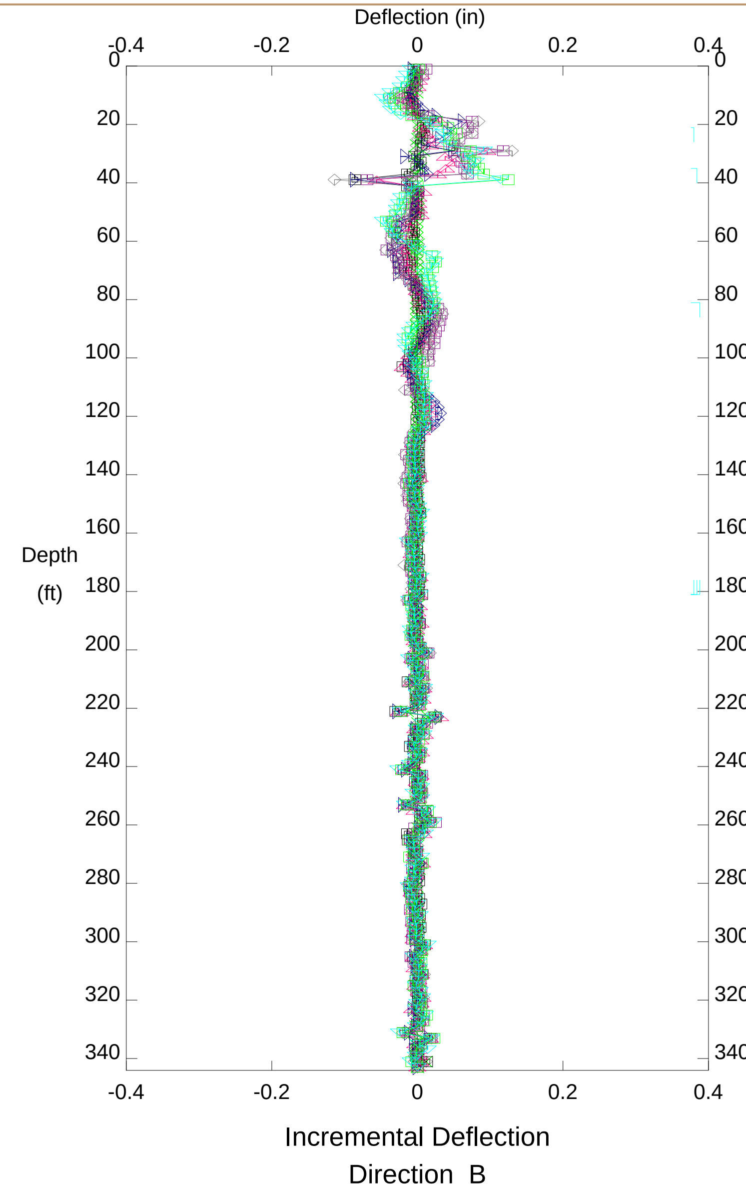
Sets marked * include zero shift and/or rotation corrections.

PLATE D-28a

C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP26.gtl

Fugro Consultants, Inc. - Ventura, CA





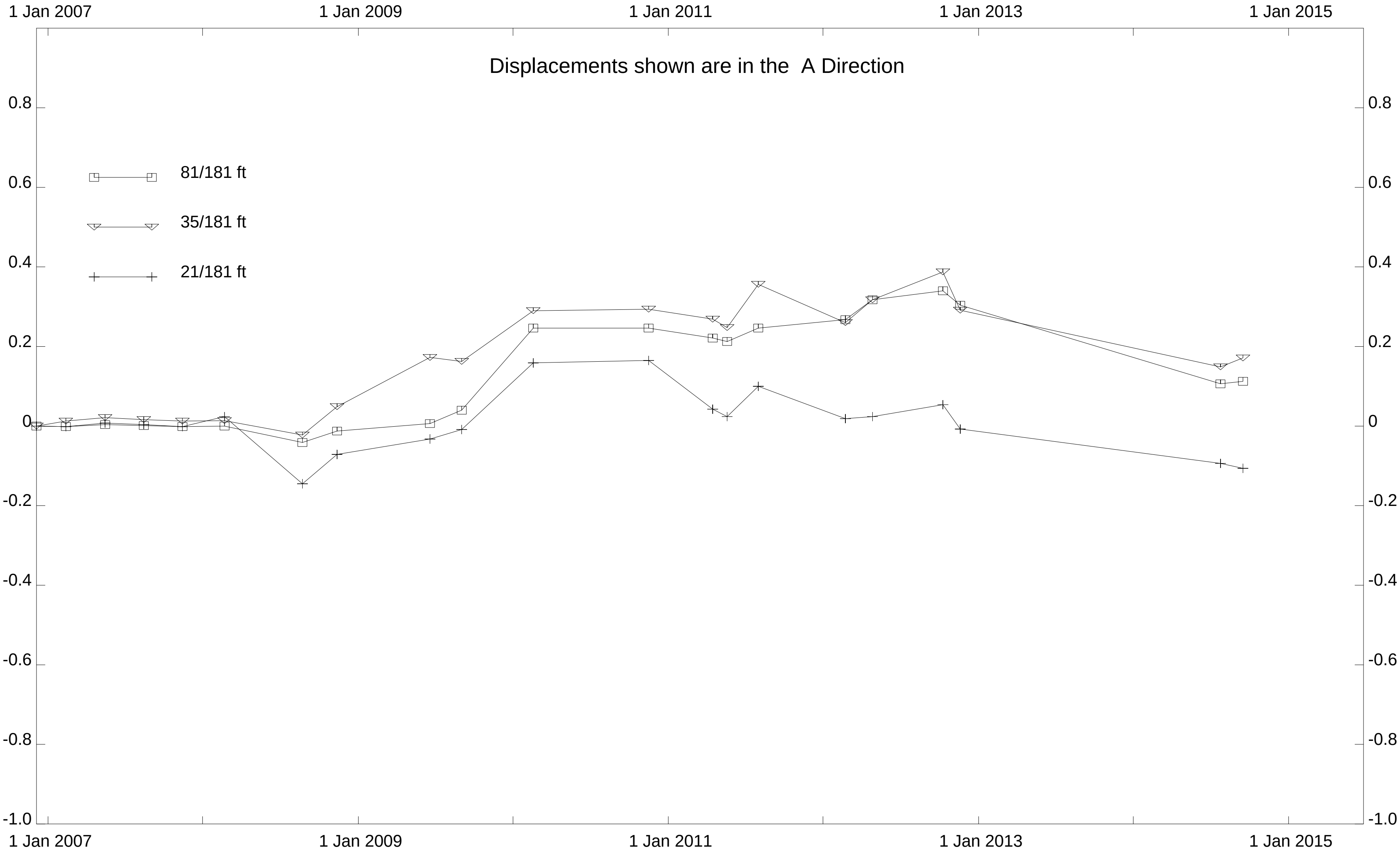
BIG ROCK MESA, Inclinometer SP-26

HEADSCARP REGION

Sets marked * include zero shift and/or rotation corrections.

PLATE D-28b

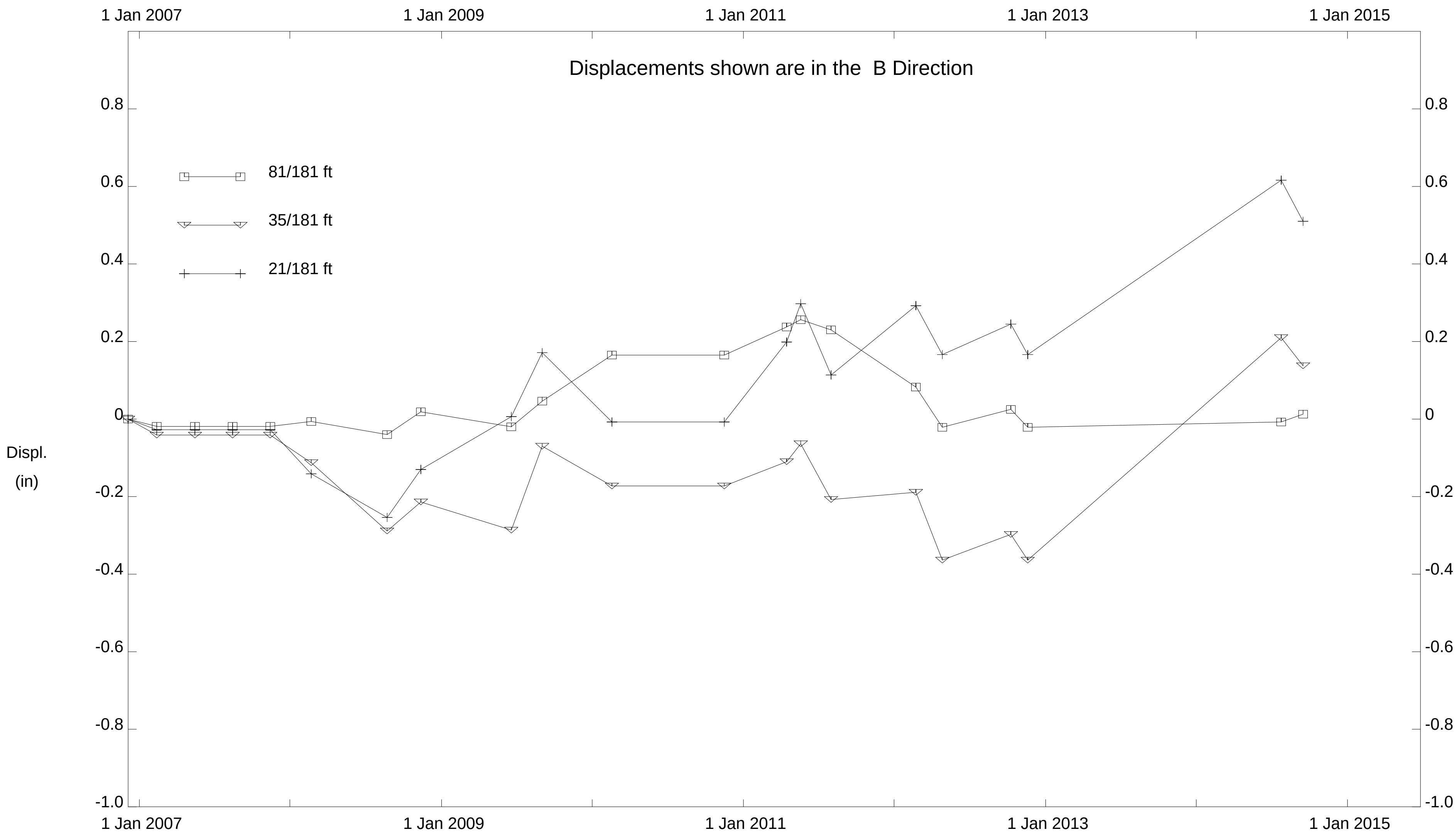
C:\CADFiles\MalibuInclinometers\Big Rock GTL\SP26.gtl



BIG ROCK MESA, Inclinometer SP-26

HEADSCARP REGION

PLATE D-28c



BIG ROCK MESA, Inclinometer SP-26

HEADSCARP REGION

PLATE D-28d

APPENDIX E
WATER QUALITY TESTING

Table 1
Summary of Monitoring Data

Date Sampled	INORGANIC NON-METALS (Aqueous Matrix) Well/Hydrauger Identification	pH	Temperature	Biochemical Oxygen Demand	Surfactants (MBAS)	Oil & Grease	Settleable Solids	Sulfides	Phenols	Residual Chlorine	Total Suspended Solids	Turbidity	Acute Toxicity *
Units:			^oF	mg/L	mg/L	mg/L	mL/L	mg/L	mg/L	mg/l	mg/L	NTU	% Survival
Discharges to Port 1													
7/16/2013	BYA-6	6.9	72.3	ND	ND	ND	BQL	ND	ND	BQL	4.4	3.9	--
8/21/2013	BYA-6	6.9	71.8	ND	ND	ND	BQL	ND	ND	BQL	4	0.4	--
9/11/2013	BYA-6	6.8	71.4	ND	ND	ND	BQL	ND	ND	BQL	ND	0.5	--
7/16/2013	HD-42	7.0	73.6	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	--
8/21/2013	HD-42	6.9	75.7	ND	ND	ND	BQL	ND	ND	BQL	ND	0.5	--
9/11/2013	HD-42	7.1	72.9	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	--
Discharges to Port 2													
7/16/2013	HD-9	7.0	73.8	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
8/21/2013	HD-9	7.1	75.0	ND	ND	ND	BQL	ND	ND	BQL	ND	0.7	--
9/11/2013	HD-9	7.1	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.4	--
Discharges to Port 3													
7/16/2013	HD-30	7.1	73.4	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	--
8/21/2013	HD-30	7.1	73.8	ND	ND	ND	BQL	ND	ND	BQL	ND	0.6	--
9/11/2013	HD-30	7.0	73.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.4	--
Discharges to Port 4													
7/16/2013	W-8	6.8	72.5	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	--
8/21/2013	W-8	6.8	73.0	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
9/11/2013	W-8	6.8	72.5	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
7/16/2013	W-17	7.4	72.5	ND	ND	1.2	BQL	ND	ND	BQL	1.3	0.6	--
8/21/2013	W-17	7.2	73.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
9/11/2013	W-17	7.5	73.9	ND	ND	ND	BQL	ND	ND	BQL	ND	0.3	--
7/16/2013	BYA-7	7.2	72.3	ND	ND	1.1	BQL	ND	ND	BQL	1.7	0.5	--
8/21/2013	BYA-7	7.7	74.8	ND	ND	ND	BQL	ND	ND	BQL	ND	0.4	--
9/11/2013	BYA-7	7.6	73.8	ND	ND	ND	BQL	ND	ND	BQL	2.3	0.7	--
Discharges to Port 5													
7/16/2013	BYA-4	7.0	72.7	ND	ND	1.1	BQL	ND	ND	BQL	15.6	4.7	--
8/21/2013	BYA-4	7.0	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	1.4	--
9/11/2013	BYA-4	7.1	72.5	ND	ND	ND	BQL	ND	ND	BQL	3.6	1.3	--
7/16/2013	W-13	6.9	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
8/21/2013	W-13	6.7	73.6	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
9/11/2013	W-13	7.0	72.9	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
Discharges to Port 6													
7/16/2013	HD-12	7.0	74.5	ND	ND	ND	BQL	ND	ND	BQL	2.7	3.6	--
8/21/2013	HD-12	7.1	75.0	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
9/11/2013	HD-12	7.1	73.4	ND	ND	ND	BQL	ND	ND	BQL	ND	0.5	--
Effluent Limit (Daily Max.)		6.5-8.5	--	30	0.5	15	0.3	0.1	1	0.1	150	150	90
Effluent Limit (Monthly Avg.)		6.5-8.5	--	20	---	10	0.1	---	---	---	50	50	--

* Acute Toxicity Samples collected January 18, 2013

Follow-up samles from prior quarter for total sulfide for FW-1 collected June 26 (19 mg/l), July 9 (20.7 mg/l), July 16 (36.6) and July 23 (18.3 mg/l).

SUMMARY OF WATER QUALITY MONITORING DATA
Third Quarter (July - September) 2013
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE E-1a

Table 1
Summary of Monitoring Data

Date Sampled	INORGANIC NON-METALS (Aqueous Matrix)												
	Well/Hydrauger Identification	pH	Temperature	Biochemical Oxygen Demand	Surfactants (MBAS)	Oil & Grease	Settleable Solids	Sulfides	Phenols	Residual Chlorine	Total Suspended Solids	Turbidity	Acute Toxicity *
Units:			^{o}F	*mg/L*	*mg/L*	*mg/L*	*mL/L*	*mg/L*	*mg/L*	*mg/l*	*mg/L*	*NTU*	*% Surviva*
						Discharges to Port 1A							
10/23/2013	BYA-14	7.1	70.7	2.6	ND	ND	BQL	ND	ND	BQL	1.6	0.5	--
11/21/2013	BYA-14	7.0	71.4	0.5	ND	ND	BQL	ND	ND	BQL	3.4	4.4	--
12/19/2013	BYA-14	7.1	72.1	ND	ND	ND	BQL	ND	ND	BQL	4.9	10	--
						Discharges to Port 1							
10/23/2013	HD-33	6.9	73.2	1.0	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
11/21/2013	HD-33	6.9	73.2	4.6	ND	ND	BQL	ND	ND	BQL	4.0	5.6	--
12/19/2013	HD-33	7.0	73.0	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
						Discharges to Port 3							
10/23/2013	BYA-H10	7.1	73.2	2.0	ND	ND	BQL	ND	ND	BQL	1.5	3.5	--
11/21/2013	BYA-H10	7.1	73.6	0.6	ND	ND	BQL	ND	ND	BQL	1.7	0.5	--
12/19/2013	BYA-H10	7.1	72.7	0.5	ND	ND	BQL	ND	ND	BQL	3.1	4.6	--
						Discharges to Port 5							
10/23/2013	W-16	6.8	72.9	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
11/21/2013	W-16	7.3	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
12/19/2013	W-16	6.8	73.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
10/23/2013	BYA-9	6.8	73.0	0.64	ND	ND	BQL	ND	ND	BQL	3.4	0.8	--
11/21/2013	BYA-9	7.4	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.3	--
12/19/2013	BYA-9	6.8	72.1	ND	ND	ND	BQL	ND	ND	BQL	1.1	0.6	--
10/23/2013	BYA-11	7.3	71.8	2.5	ND	ND	BQL	ND	ND	BQL	ND	0.3	--
11/21/2013	BYA-11	7.4	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
12/19/2013	BYA-11	7.3	68.9	0.9	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
10/23/2013	HD-22	7.0	73.4	3.0	ND	ND	BQL	ND	ND	BQL	8.7	1.9	--
11/21/2013	HD-22	7.0	73.4	0.5	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
12/19/2013	HD-22	7.1	73.4	ND	ND	ND	BQL	ND	ND	BQL	3.2	5.1	--
						Discharges to Port 6							
10/23/2013	W-18	7.1	72.9	ND	ND	ND	BQL	ND	ND	BQL	2.4	2.6	--
11/21/2013	W-18	7.1	72.7	ND	ND	ND	BQL	ND	ND	BQL	3.2	5.3	--
12/19/2013	W-18	7.1	72.3	0.4	ND	ND	BQL	ND	ND	BQL	5.6	11	--
10/23/2013	BYA-2	7.1	70.3	2.6	ND	ND	BQL	ND	ND	BQL	1.3	1.4	--
11/21/2013	BYA-2	7.2	71.4	4.5	ND	ND	BQL	ND	ND	BQL	1.3	0.9	--
12/19/2013	BYA-2	7.1	71.8	0.4	ND	ND	BQL	ND	ND	BQL	ND	0.7	--
						Discharges to Port 7							
10/23/2013	HD-7	7.1	73.0	2.6	ND	ND	BQL	ND	ND	BQL	5.2	0.8	--
11/21/2013	HD-7	7.1	73.0	3.0	ND	ND	BQL	ND	ND	BQL	ND	0.2	--
12/19/2013	HD-7	7.0	73.2	0.6	ND	ND	BQL	ND	ND	BQL	1.9	3.3	--
Effluent Limit (Daily Max.)		6.5-8.5	--	30	0.5	15	0.3	0.1	1	0.1	150	150	90
Effluent Limit (Monthly Avg.)		6.5-8.5	--	20	---	10	0.1	---	---	---	50	50	--

* Acute Toxicity Samples collected January 18, 2013

Follow-up samles from prior quarter for total sulfide for FW-1 collected June 26 (19 mg/l), July 9 (20.7 mg/l), July 16 (36.6) and July 23 (18.3 mg/l).

SUMMARY OF WATER QUALITY MONITORING DATA
Fourth Quarter (October - December) 2013
Big Rock Mesa Landslide Assessment District
Malibu, California

Date Sampled	INORGANIC NON-METALS (Aqueous Matrix)												
	Well/Hydrauger Identification	pH	Temperature	Biochemical Oxygen Demand	Surfactants (MBAS)	Oil & Grease	Settleable Solids	Sulfides	Phenols	Residual Chlorine	Total Suspended Solids	Turbidity	Acute Toxicity *
Units:			^oF	mg/L	mg/L	mg/L	mL/L	mg/L	mg/L	mg/l	mg/L	NTU	% Survival
Discharges to Port 3													
1/21/2014	W-1	6.9	69.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.3	100
2/25/2014	W-1	6.8	69.6	ND	ND	1	ND	ND	ND	ND	ND	0.5	--
3/19/2014	W-1	7.0	69.3	ND	ND	ND	ND	ND	0.008	ND	ND	1	--
1/21/2014	HD-30	6.9	70.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.4	100
2/25/2014	HD-30	7.0	69.3	ND	ND	ND	ND	ND	ND	ND	1.4	1.4	--
3/19/2014	HD-30	7.0	68.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Discharges to Port 4													
1/21/2014	W-8	6.8	71.4	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	97.5
2/25/2014	W-8	6.8	71.2	ND	ND	ND	ND	ND	0.008	ND	ND	0.1	--
3/19/2014	W-8	6.8	70.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
1/21/2014	BYA-1	6.9	71.1	ND	ND	ND	BQL	ND	ND	BQL	2.7	13.0	95
2/25/2014	BYA-1	7.0	71.8	ND	ND	ND	ND	ND	ND	ND	4.0	14.0	--
3/19/2014	BYA-1	6.9	71.6	ND	ND	ND	ND	ND	ND	ND	4.7	15.0	--
Discharges to Port 5													
1/21/2014	BYA-4	7.0	71.2	ND	ND	ND	BQL	ND	ND	BQL	1.1	0.6	100
2/25/2014	BYA-4	7.1	72.5	ND	ND	ND	ND	ND	ND	ND	0.62	0.5	--
3/19/2014	BYA-4	6.8	71.1	ND	ND	ND	ND	ND	ND	ND	ND	0.5	--
1/21/2014	W-13	6.8	71.1	ND	ND	ND	BQL	ND	ND	BQL	ND	0.1	100
2/25/2014	W-13	6.8	71.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
3/19/2014	W-13	6.8	70.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Discharges to Port 6													
1/21/2014	BYA-3	7.0	70.7	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	100
2/25/2014	BYA-3	7.4	72.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
3/19/2014	BYA-3	7.2	71.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
1/21/2014	HD-10	6.7	71.8	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	100
2/25/2014	HD-10	6.8	71.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
3/19/2014	HD-10	6.8	70.2	ND	ND	ND	ND	ND	ND	ND	2.4	0.7	--
1/21/2014	HD-12	7.0	72.1	ND	ND	ND	BQL	ND	ND	BQL	ND	0.6	100
2/25/2014	HD-12	7.0	70.7	ND	ND	ND	ND	ND	0.007	ND	ND	0.2	--
3/19/2014	HD-12	7.0	70.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Discharges to Port 9													
1/21/2014	HD-6	7.0	72.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.2	100
2/25/2014	HD-6	6.9	70.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
3/19/2014	HD-6	6.9	69.8	ND	ND	ND	ND	ND	ND	ND	ND	0.3	--
Effluent Limit (Daily Max.)		6.5-8.5	--	30	0.5	15	0.3	1	1	0.1	150	150	90
Effluent Limit (Monthly Avg.)		6.5-8.5	--	20	---	10	0.1	---	---	---	50	50	--

* Annual Acute Toxicity Samples collected January 21, 2014

SUMMARY OF WATER QUALITY MONITORING DATA
First Quarter (January - March) 2014
Big Rock Mesa Landslide Assessment District
Malibu, California

PLATE E-1c

Date Sampled	Well/Hydrauger Identification	pH	Temperature	Biochemical Oxygen Demand	Surfactants (MBAS)	Oil & Grease	Settleable Solids	Sulfides	Phenols	Residual Chlorine	Total Suspended Solids	Turbidity	Acute Toxicity *
	INORGANIC NON-METALS (Aqueous Matrix)												
Units:			°F	mg/L	mg/L	mg/L	mL/L	mg/L	mg/L	mg/l	mg/L	NTU	% Survival
Discharges to Port 1A													
4/17/2014	FW-1	7.0	73.6	24	0.035	ND	ND	35	ND	ND	0.88	16.0	--
5/15/2014	FW-1	7.8	73.8	20	ND	ND	BQL	6.9	ND	BQL	1.1	3.6	--
5/23/2014	FW-1	7.8	73.6	16	--	--	--	14.6	--	--	--	--	--
5/30/2014	FW-1	7.7	77.0	33	--	--	--	31.6	--	--	--	--	--
6/6/2014	FW-1	7.6	79.2	39	--	--	--	32	--	--	--	--	--
6/12/2014	FW-1	7.7	76.1	22	--	--	--	23.4	--	--	--	--	--
6/19/2014	FW-1	7.8	77.2	16.5	ND	ND	BQL	17.7	ND	BQL	1.5	8.9	--
Discharges to Port 1													
4/17/2014	HD-42	6.9	71.8	ND	ND	ND	ND	ND	ND	ND	2.4	2.9	--
5/15/2014	HD-42	6.9	76.6	ND	ND	ND	BQL	ND	ND	BQL	ND	0.18	--
6/19/2014	HD-42	7.1	72.9	0.59	ND	ND	BQL	ND	ND	BQL	3.1	5.7	--
Discharges to Port 3													
4/17/2014	HD-4	6.9	0.0	1.8	ND	ND	ND	ND	ND	ND	ND	0.31	--
5/15/2014	HD-4	7.0	77.0	ND	ND	ND	BQL	ND	ND	BQL	3.1	5.6	--
6/19/2014	HD-4	6.9	72.7	ND	ND	ND	BQL	ND	ND	BQL	ND	0.23	--
Discharges to Port 4													
4/17/2014	W-17	6.9	73.4	ND	ND	ND	ND	ND	ND	ND	ND	0.34	--
5/15/2014	W-17	7.3	75.9	ND	ND	ND	BQL	ND	ND	BQL	ND	0.3	--
6/19/2014	W-17	7.3	71.6	ND	ND	ND	BQL	ND	ND	BQL	ND	0.26	--
4/17/2014	FW-2	7.0	72.9	ND	ND	ND	ND	ND	ND	ND	ND	0.35	--
5/15/2014	FW-2	7.2	75.0	ND	ND	ND	BQL	ND	ND	BQL	ND	0.32	--
6/19/2014	FW-2	7.2	73.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.46	--
4/17/2014	HD-26	7.0	72.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
5/15/2014	HD-26	7.0	76.5	ND	ND	ND	BQL	ND	ND	BQL	ND	0.58	--
6/19/2014	HD-26	6.9	72.1	ND	ND	ND	BQL	ND	ND	BQL	ND	0.15	--
Discharges to Port 5													
4/17/2014	W-16	7.3	72.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
5/15/2014	W-16	6.8	77.2	ND	ND	ND	BQL	ND	ND	BQL	ND	0.16	--
6/19/2014	W-16	6.9	74.3	ND	ND	ND	BQL	ND	ND	BQL	ND	0.33	--
Discharges to Port 5A													
4/17/2014	BYA-10	7.0	72.9	2	ND	ND	ND	ND	ND	ND	1.2	0.28	--
5/15/2014	BYA-10	7.1	75.4	ND	ND	ND	BQL	ND	ND	BQL	ND	0.51	--
6/19/2014	BYA-10	7.1	74.1	ND	ND	ND	BQL	ND	ND	BQL	2.9	4.3	--
Discharges to Port 6													
4/17/2014	W-18	7.0	72.5	ND	ND	ND	ND	ND	ND	ND	3.2	4.6	--
5/15/2014	W-18	7.2	78.1	ND	ND	ND	BQL	ND	ND	BQL	3.3	6.6	--
6/19/2014	W-18	7.2	74.5	1.2	ND	ND	BQL	ND	ND	BQL	3.3	5.7	--
Discharges to Port 9													
4/17/2014	HD-23	7.0	72.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
5/15/2014	HD-23	7.0	76.5	ND	ND	ND	BQL	ND	ND	BQL	ND	0.28	--
6/19/2014	HD-23	7.2	71.8	ND	ND	ND	BQL	ND	ND	BQL	ND	0.39	--
Effluent Limit (Daily Max.)		6.5-8.5	--	30	0.5	15	0.3	1	1	0.1	150	150	90
Effluent Limit (Monthly Avg.)		6.5-8.5	--	20	---	10	0.1	---	---	---	50	50	--

* Annual Acute Toxicity Samples collected January 21, 2014

SUMMARY OF WATER QUALITY MONITORING DATA
Second Quarter (April - June) 2014
Big Rock Mesa Landslide Assessment District
Malibu, California

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: July 24, 2013
Laboratory Number: 132181
Project Name: Malibu-NPDES
Sampled by: Client

On July 16, 2013, Capco Analytical Services, Inc.(CAS), received eleven(11) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
BYA-4	132181-01
W-13	132181-02
W-8	132181-03
W-17	132181-04
BYA-7	132181-05
BYA-6	132181-06
HD-42	132181-07
HD-9	132181-08
HD-30	132181-09
HD-12	132181-10
FW-1	132181-11

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang, Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience. This report consists of 11 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/16/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
132181-01	BYA-4	BQL	1	0.05
132181-02	W-13	BQL	1	0.05
132181-03	W-8	BQL	1	0.05
132181-04	W-17	BQL	1	0.05
132181-05	BYA-7	BQL	1	0.05
132181-06	BYA-6	BQL	1	0.05
132181-07	HD-42	BQL	1	0.05
132181-08	HD-9	BQL	1	0.05
132181-09	HD-30	BQL	1	0.05
132181-10	HD-12	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/17/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	ND	1	0.1	0.02
132181-02	W-13	ND	1	0.1	0.02
132181-03	W-8	ND	1	0.1	0.02
132181-04	W-17	ND	1	0.1	0.02
132181-05	BYA-7	ND	1	0.1	0.02
132181-06	BYA-6	ND	1	0.1	0.02
132181-07	HD-42	ND	1	0.1	0.02
132181-08	HD-9	ND	1	0.1	0.02
132181-09	HD-30	ND	1	0.1	0.02
132181-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/22/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	ND	1	0.1	0.02
132181-02	W-13	ND	1	0.1	0.02
132181-03	W-8	ND	1	0.1	0.02
132181-04	W-17	ND	1	0.1	0.02
132181-05	BYA-7	ND	1	0.1	0.02
132181-06	BYA-6	ND	1	0.1	0.02
132181-07	HD-42	ND	1	0.1	0.02
132181-08	HD-9	ND	1	0.1	0.02
132181-09	HD-30	ND	1	0.1	0.02
132181-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/22/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	1.1	1	5	1
132181-02	W-13	ND	1	5	1
132181-03	W-8	ND	1	5	1
132181-04	W-17	1.2	1	5	1
132181-05	BYA-7	1.1	1	5	1
132181-06	BYA-6	ND	1	5	1
132181-07	HD-42	ND	1	5	1
132181-08	HD-9	ND	1	5	1
132181-09	HD-30	ND	1	5	1
132181-10	HD-12	ND	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/18/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	15.6	1	5	1
132181-02	W-13	ND	1	5	1
132181-03	W-8	ND	1	5	1
132181-04	W-17	1.3	1	5	1
132181-05	BYA-7	1.7	1	5	1
132181-06	BYA-6	4.4	1	5	1
132181-07	HD-42	ND	1	5	1
132181-08	HD-9	ND	1	5	1
132181-09	HD-30	ND	1	5	1
132181-10	HD-12	2.7	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/22/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	ND	1	0.02	0.004
132181-02	W-13	ND	1	0.02	0.004
132181-03	W-8	ND	1	0.02	0.004
132181-04	W-17	ND	1	0.02	0.004
132181-05	BYA-7	ND	1	0.02	0.004
132181-06	BYA-6	ND	1	0.02	0.004
132181-07	HD-42	ND	1	0.02	0.004
132181-08	HD-9	ND	1	0.02	0.004
132181-09	HD-30	ND	1	0.02	0.004
132181-10	HD-12	ND	1	0.02	0.004
132181-11	FW-1	36.6	50	1.0	0.2

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/16/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	ND	1	2	0.4
132181-02	W-13	ND	1	2	0.4
132181-03	W-8	ND	1	2	0.4
132181-04	W-17	ND	1	2	0.4
132181-05	BYA-7	ND	1	2	0.4
132181-06	BYA-6	ND	1	2	0.4
132181-07	HD-42	ND	1	2	0.4
132181-08	HD-9	ND	1	2	0.4
132181-09	HD-30	ND	1	2	0.4
132181-10	HD-12	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/16/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
132181-01	BYA-4	BQL	1	0.1
132181-02	W-13	BQL	1	0.1
132181-03	W-8	BQL	1	0.1
132181-04	W-17	BQL	1	0.1
132181-05	BYA-7	BQL	1	0.1
132181-06	BYA-6	BQL	1	0.1
132181-07	HD-42	BQL	1	0.1
132181-08	HD-9	BQL	1	0.1
132181-09	HD-30	BQL	1	0.1
132181-10	HD-12	BQL	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132181
Analyst: AN

Date Sampled: 07/16/13
Date Received: 07/16/13
Date Analyzed: 07/17/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
132181-01	BYA-4	4.7	1	0.1
132181-02	W-13	0.15	1	0.1
132181-03	W-8	0.1	1	0.1
132181-04	W-17	0.6	1	0.1
132181-05	BYA-7	0.5	1	0.1
132181-06	BYA-6	3.9	1	0.1
132181-07	HD-42	0.10	1	0.1
132181-08	HD-9	0.18	1	0.1
132181-09	HD-30	0.14	1	0.1
132181-10	HD-12	3.6	1	0.1

DF: Dilution Factor

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 132181-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	07/16/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	07/22/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	07/18/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	07/22/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	07/22/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	07/17/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	07/16/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

Certificate of Analysis

Notes:

The Chain of Custody document is part of the report. Any remaining sample(s) for testing will be disposed of one month from the final report date unless other arrangements are made in advance.
All results are expressed on wet weight basis unless otherwise specified.

07/24/13

Authorized Signature (QA/QC Supervisor) Date

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Capco Analytical certifies that the results meet all requirements of ELAP unless noted in the Case Narrative. This analytical report must be reproduced in its entirety.

Legend of Abbreviations:

PQL	Practical Quantitation Limit
BQL	Below Practical Quantitation Limit
ND	NOT DETECTED at or above the Method Detection Limit (MDL)
MDL	Method Detection Limit
MRL	Method Reporting Limit
MDA	Minimum Detectable Activity
MCL	Maximum Contamination Level

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:
Company same
Address
Phone Contact

P.O.# 7/23

PROJ. NO:
PROJECT NAME: Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS: TSS, Settleable Solids; BOD; Oil & Grease; MBAS; Sulfide; Phenols; Residual Chlorine; Turbidity; pH

132181

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	TSS, Settleable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	pH	REMARKS
1	7-16-13	9:40			BYA-4	X				5	P+G									6.95	22.6
2		9:55			W-13	X														6.87	22.4
3		10:15			W-8	X														6.78	22.5
4		~~10:35~~	10:50		W-17	X														7.38	22.5
5		~~10:40~~	10:35		BYA-7	X														7.23	22.4
6		11:15			BYA-6	X														6.85	22.4
7		12:30			HD-42	X														7.02	23.1
8		12:45			HD-9	X														6.98	23.2
9		12:55			HD-30	X														7.13	23.0
10		1:10			H-10-12	X														7.04	23.6
11		11:45			FW-1															7.11	22.5

CHECK ONE BOX:
DISPOSE SAMPLES
RETURN SAMPLES

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	07/16/13 1455				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time		

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

WHITE COPY____ CANARY COPY____ PINK COPY____

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: September 3, 2013
Laboratory Number: 122514
Project Name: Malibu NPDES
Sampled by: Client

On August 21, 2013, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
BYA-4	122514-01
W-13	122514-02
W-8	122514-03
W-17	122514-04
BYA-7	122514-05
BYA-6	122514-06
HD-42	122514-07
HD-9	122514-08
HD-30	122514-09
HD-12	122514-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang, Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.

This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/21/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132181-01	BYA-4	ND	1	2	0.4
132181-02	W-13	ND	1	2	0.4
132181-03	W-8	ND	1	2	0.4
132181-04	W-17	ND	1	2	0.4
132181-05	BYA-7	ND	1	2	0.4
132181-06	BYA-6	ND	1	2	0.4
132181-07	HD-42	ND	1	2	0.4
132181-08	HD-9	ND	1	2	0.4
132181-09	HD-30	ND	1	2	0.4
132181-10	HD-12	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/27/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132514-01	BYA-4	ND	1	0.02	0.004
132514-02	W-13	ND	1	0.02	0.004
132514-03	W-8	ND	1	0.02	0.004
132514-04	W-17	ND	1	0.02	0.004
132514-05	BYA-7	ND	1	0.02	0.004
132514-06	BYA-6	ND	1	0.02	0.004
132514-07	HD-42	ND	1	0.02	0.004
132514-08	HD-9	ND	1	0.02	0.004
132514-09	HD-30	ND	1	0.02	0.004
132514-10	HD-12	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/22/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132514-01	BYA-4	4.0	1	5	1
132514-02	W-13	ND	1	5	1
132514-03	W-8	ND	1	5	1
132514-04	W-17	ND	1	5	1
132514-05	BYA-7	ND	1	5	1
132514-06	BYA-6	ND	1	5	1
132514-07	HD-42	ND	1	5	1
132514-08	HD-9	ND	1	5	1
132514-09	HD-30	ND	1	5	1
132514-10	HD-12	ND	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/22/13-08/23/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132514-01	BYA-4	ND	1	5	1
132514-02	W-13	ND	1	5	1
132514-03	W-8	ND	1	5	1
132514-04	W-17	ND	1	5	1
132514-05	BYA-7	ND	1	5	1
132514-06	BYA-6	ND	1	5	1
132514-07	HD-42	ND	1	5	1
132514-08	HD-9	ND	1	5	1
132514-09	HD-30	ND	1	5	1
132514-10	HD-12	ND	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/28/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132514-01	BYA-4	ND	1	0.1	0.02
132514-02	W-13	ND	1	0.1	0.02
132514-03	W-8	ND	1	0.1	0.02
132514-04	W-17	ND	1	0.1	0.02
132514-05	BYA-7	ND	1	0.1	0.02
132514-06	BYA-6	ND	1	0.1	0.02
132514-07	HD-42	ND	1	0.1	0.02
132514-08	HD-9	ND	1	0.1	0.02
132514-09	HD-30	ND	1	0.1	0.02
132514-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/22/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132514-01	BYA-4	ND	1	0.1	0.02
132514-02	W-13	ND	1	0.1	0.02
132514-03	W-8	ND	1	0.1	0.02
132514-04	W-17	ND	1	0.1	0.02
132514-05	BYA-7	ND	1	0.1	0.02
132514-06	BYA-6	ND	1	0.1	0.02
132514-07	HD-42	ND	1	0.1	0.02
132514-08	HD-9	ND	1	0.1	0.02
132514-09	HD-30	ND	1	0.1	0.02
132514-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/21/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
132514-01	BYA-4	BQL	1	0.05
132514-02	W-13	BQL	1	0.05
132514-03	W-8	BQL	1	0.05
132514-04	W-17	BQL	1	0.05
132514-05	BYA-7	BQL	1	0.05
132514-06	BYA-6	BQL	1	0.05
132514-07	HD-42	BQL	1	0.05
132514-08	HD-9	BQL	1	0.05
132514-09	HD-30	BQL	1	0.05
132514-10	HD-12	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/22/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
132514-01	BYA-4	BQL	1	0.1
132514-02	W-13	BQL	1	0.1
132514-03	W-8	BQL	1	0.1
132514-04	W-17	BQL	1	0.1
132514-05	BYA-7	BQL	1	0.1
132514-06	BYA-6	BQL	1	0.1
132514-07	HD-42	BQL	1	0.1
132514-08	HD-9	BQL	1	0.1
132514-09	HD-30	BQL	1	0.1
132514-10	HD-12	BQL	1	0.1

DF: Dilution Factor

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132514
Analyst: AN

Date Sampled: 08/21/13
Date Received: 08/21/13
Date Analyzed: 08/22/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
132514-01	BYA-4	1.4	1	0.1
132514-02	W-13	0.19	1	0.1
132514-03	W-8	0.20	1	0.1
132514-04	W-17	0.22	1	0.1
132514-05	BYA-7	0.37	1	0.1
132514-06	BYA-6	0.40	1	0.1
132514-07	HD-42	0.45	1	0.1
132514-08	HD-9	0.70	1	0.1
132514-09	HD-30	0.63	1	0.1
132514-10	HD-12	0.17	1	0.1

DF: Dilution Factor

1536 Eastman Ave. Suite B, Ventura, California 93003 Ph: (805)644-1095 FAX: (805)644-9947
www.capcoenv.com

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 132514-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	08/21/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	08/27/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	08/22/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	08/22/13 08/23/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	08/28/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	08/22/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	08/21/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES
1536 Eastman Avenue, Suite B
Ventura, CA 93003
(805) 644-1095 Fax 644-9947
www.capcoenv.com

CHAIN OF CUSTODY RECORD

REPORT
Company: FUGRO
Fax: (805) 650-7010
Address: 4820 MCGRATH ST SUITE 100
VENTURA
Email:
Phone: 650-7000
Contact: TIM NICELY

BILL TO:
Company:
Address:
Phone:
Contact:

P.O.# 8/28

132514

PROJ. NO:
PROJECT NAME: MALIBU NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS: TSS, SETTLE SOLIDS; BOD; O+G; MBAS; SULFIDE; PHENOLS; RESIDUAL CHLORINE; TURBIDITY

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE IDENTIFICATION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	TSS, SETTLE SOLIDS	BOD	O+G	MBAS	SULFIDE	PHENOLS	RESIDUAL CHLORINE	TURBIDITY	P.H.	REMARKS
1	8/21/13	10:00			BYA-4	X				5	P&G									7.00	22.4°C
2		10:15			W-13															6.70	23.1
3		10:35			W-8															6.82	22.8
4		10:55			W-17															7.17	22.9
5		11:10			BYA-7															7.65	23.8
6		11:36			BYA-6															6.91	22.1
7		12:30			HD-42															6.92	24.3
8		12:45			HD-9															7.12	23.9
9		12:55			HD-30															7.08	23.2
10		1:25			HD-12															7.12	23.9

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	8/21/13 2:50	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

TURN AROUND TIME
- [x] STANDARD
- [ ] 24 HOURS
- [ ] 48 HOURS
- [ ] 72 HOURS

OTHER

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CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: September 19, 2013
Laboratory Number: 132692
Project Name: Malibu NPDES
Sampled by: Client

On September 11, 2013, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-13	132692-01
BYA-4	132692-02
W-8	132692-03
W-17	132692-04
BYA-7	132692-05
BYA-6	132692-06
HD-42	132692-07
HD-9	132692-08
HD-30	132692-09
HD-12	132692-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang, Ph.D.
Director - Analytical Operations

Note: Revised cover letter 11/12/13 total sulfide not attached to the final package.

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/12/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	0.02	0.004
132692-02	BYA-4	ND	1	0.02	0.004
132692-03	W-8	ND	1	0.02	0.004
132692-04	W-17	ND	1	0.02	0.004
132692-05	BYA-7	ND	1	0.02	0.004
132692-06	BYA-6	ND	1	0.02	0.004
132692-07	HD-42	ND	1	0.02	0.004
132692-08	HD-9	ND	1	0.02	0.004
132692-09	HD-30	ND	1	0.02	0.004
132692-10	HD-12	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/12/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	5	1
132692-02	BYA-4	3.6	1	5	1
132692-03	W-8	ND	1	5	1
132692-04	W-17	ND	1	5	1
132692-05	BYA-7	2.3	1	5	1
132692-06	BYA-6	ND	1	5	1
132692-07	HD-42	ND	1	5	1
132692-08	HD-9	ND	1	5	1
132692-09	HD-30	ND	1	5	1
132692-10	HD-12	ND	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/16/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	5	1
132692-02	BYA-4	ND	1	5	1
132692-03	W-8	ND	1	5	1
132692-04	W-17	ND	1	5	1
132692-05	BYA-7	ND	1	5	1
132692-06	BYA-6	ND	1	5	1
132692-07	HD-42	ND	1	5	1
132692-08	HD-9	ND	1	5	1
132692-09	HD-30	ND	1	5	1
132692-10	HD-12	ND	1	5	1

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/12/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	2	0.4
132692-02	BYA-4	ND	1	2	0.4
132692-03	W-8	ND	1	2	0.4
132692-04	W-17	ND	1	2	0.4
132692-05	BYA-7	ND	1	2	0.4
132692-06	BYA-6	ND	1	2	0.4
132692-07	HD-42	ND	1	2	0.4
132692-08	HD-9	ND	1	2	0.4
132692-09	HD-30	ND	1	2	0.4
132692-10	HD-12	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/13/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	0.1	0.02
132692-02	BYA-4	ND	1	0.1	0.02
132692-03	W-8	ND	1	0.1	0.02
132692-04	W-17	ND	1	0.1	0.02
132692-05	BYA-7	ND	1	0.1	0.02
132692-06	BYA-6	ND	1	0.1	0.02
132692-07	HD-42	ND	1	0.1	0.02
132692-08	HD-9	ND	1	0.1	0.02
132692-09	HD-30	ND	1	0.1	0.02
132692-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/17/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
132692-01	W-13	ND	1	0.1	0.02
132692-02	BYA-4	ND	1	0.1	0.02
132692-03	W-8	ND	1	0.1	0.02
132692-04	W-17	ND	1	0.1	0.02
132692-05	BYA-7	ND	1	0.1	0.02
132692-06	BYA-6	ND	1	0.1	0.02
132692-07	HD-42	ND	1	0.1	0.02
132692-08	HD-9	ND	1	0.1	0.02
132692-09	HD-30	ND	1	0.1	0.02
132692-10	HD-12	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/11/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
132692-01	W-13	BQL	1	0.05
132692-02	BYA-4	BQL	1	0.05
132692-03	W-8	BQL	1	0.05
132692-04	W-17	BQL	1	0.05
132692-05	BYA-7	BQL	1	0.05
132692-06	BYA-6	BQL	1	0.05
132692-07	HD-42	BQL	1	0.05
132692-08	HD-9	BQL	1	0.05
132692-09	HD-30	BQL	1	0.05
132692-10	HD-12	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/11/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
132692-01	W-13	0.15	1	0.1
132692-02	BYA-4	1.3	1	0.1
132692-03	W-8	0.24	1	0.1
132692-04	W-17	0.33	1	0.1
132692-05	BYA-7	0.74	1	0.1
132692-06	BYA-6	0.46	1	0.1
132692-07	HD-42	0.13	1	0.1
132692-08	HD-9	0.40	1	0.1
132692-09	HD-30	0.44	1	0.1
132692-10	HD-12	0.46	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 132692
Analyst: AN

Date Sampled: 09/11/13
Date Received: 09/11/13
Date Analyzed: 09/11/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
132692-01	W-13	BQL	1	0.1
132692-02	BYA-4	BQL	1	0.1
132692-03	W-8	BQL	1	0.1
132692-04	W-17	BQL	1	0.1
132692-05	BYA-7	BQL	1	0.1
132692-06	BYA-6	BQL	1	0.1
132692-07	HD-42	BQL	1	0.1
132692-08	HD-9	BQL	1	0.1
132692-09	HD-30	BQL	1	0.1
132692-10	HD-12	BQL	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Analyst: GM/AN
Sample ID: Method Blank
CAS LAB NO: 132692-MB

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	09/12/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	09/12/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	09/12/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	09/16/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	09/17/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	09/13/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	09/11/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT

Company Fugro Consultants
Fax 805-650-7010
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:

P.O.# 9118

Company same
Address
Phone Contact

PROJ. NO

PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

REMARKS 132692

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	TSS ,Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	pH	REMARKS
1	9/11/13	7:30			W-13	X				5	P+G									7.03	22.7
2		7:45			BYA-4	X														7.05	22.8
3		8:00			W-8	X														6.80	22.8
4		8:15			W-17	X														7.45	23.3
5		8:30			BYA-7	X														76.2	23.2
6		9:00			BYA-6	X														6.84	21.9
7		9:30			HD-42	X														7.01	22.7
8		10:00			HD-9	X														7.13	22.4
9		10:25			HO-30	X														7.03	22.9
10		10:45			HD 12	X														7.12	23.0

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Relinquished by: (Signature)	Date/Time	Received by: (Signature)		Date/Time	

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

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CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: October 29, 2013
Laboratory Number: 133094
Project Name: Malibu NPDES
Sampled by: Client

On October 24, 2013, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-16	133094-01
BYA-9	133094-02
BYA-11	133094-03
W-18	133094-04
BYA-2	133094-05
BYA-14	133094-06
HD-33	133094-07
BYA-H10	133094-08
HD-22	133094-09
HD-7	133094-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/22/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	2	0.4
133094-02	BYA-9	0.64	1	2	0.4
133094-03	BYA-11	2.5	1	2	0.4
133094-04	W-18	ND	1	2	0.4
133094-05	BYA-2	2.6	1	2	0.4
133094-06	BYA-14	2.6	1	2	0.4
133094-07	HD-33	0.96	1	2	0.4
133094-08	BYA-H10	2.0	1	2	0.4
133094-09	HD-22	3.0	1	2	0.4
133094-10	HD-7	2.6	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/23/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	5	1.0
133094-02	BYA-9	ND	1	5	1.0
133094-03	BYA-11	ND	1	5	1.0
133094-04	W-18	ND	1	5	1.0
133094-05	BYA-2	ND	1	5	1.0
133094-06	BYA-14	ND	1	5	1.0
133094-07	HD-33	ND	1	5	1.0
133094-08	BYA-H10	ND	1	5	1.0
133094-09	HD-22	ND	1	5	1.0
133094-10	HD-7	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

1536 Eastman Ave. Suite B, Ventura, California 93003 Ph: (805)644-1095 FAX: (805)644-9947
www.capcoenv.com

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/24/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	5	1.0
133094-02	BYA-9	3.4	1	5	1.0
133094-03	BYA-11	ND	1	5	1.0
133094-04	W-18	2.4	1	5	1.0
133094-05	BYA-2	1.3	1	5	1.0
133094-06	BYA-14	1.6	1	5	1.0
133094-07	HD-33	ND	1	5	1.0
133094-08	BYA-H10	1.5	1	5	1.0
133094-09	HD-22	8.7	1	5	1.0
133094-10	HD-7	5.2	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/28/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	0.1	0.02
133094-02	BYA-9	ND	1	0.1	0.02
133094-03	BYA-11	ND	1	0.1	0.02
133094-04	W-18	ND	1	0.1	0.02
133094-05	BYA-2	ND	1	0.1	0.02
133094-06	BYA-14	ND	1	0.1	0.02
133094-07	HD-33	ND	1	0.1	0.02
133094-08	BYA-H10	ND	1	0.1	0.02
133094-09	HD-22	ND	1	0.1	0.02
133094-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/24/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	0.1	0.02
133094-02	BYA-9	ND	1	0.1	0.02
133094-03	BYA-11	ND	1	0.1	0.02
133094-04	W-18	ND	1	0.1	0.02
133094-05	BYA-2	ND	1	0.1	0.02
133094-06	BYA-14	ND	1	0.1	0.02
133094-07	HD-33	ND	1	0.1	0.02
133094-08	BYA-H10	ND	1	0.1	0.02
133094-09	HD-22	ND	1	0.1	0.02
133094-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/25/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133094-01	W-16	ND	1	0.02	0.004
133094-02	BYA-9	ND	1	0.02	0.004
133094-03	BYA-11	ND	1	0.02	0.004
133094-04	W-18	ND	1	0.02	0.004
133094-05	BYA-2	ND	1	0.02	0.004
133094-06	BYA-14	ND	1	0.02	0.004
133094-07	HD-33	ND	1	0.02	0.004
133094-08	BYA-H10	ND	1	0.02	0.004
133094-09	HD-22	ND	1	0.02	0.004
133094-10	HD-7	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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Analytical Services, Inc.
Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/22/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
133094-01	W-16	BQL	1	0.05
133094-02	BYA-9	BQL	1	0.05
133094-03	BYA-11	BQL	1	0.05
133094-04	W-18	BQL	1	0.05
133094-05	BYA-2	BQL	1	0.05
133094-06	BYA-14	BQL	1	0.05
133094-07	HD-33	BQL	1	0.05
133094-08	BYA-H10	BQL	1	0.05
133094-09	HD-22	BQL	1	0.05
133094-10	HD-7	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/24/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
133094-01	W-16	0.22	1	0.1
133094-02	BYA-9	0.82	1	0.1
133094-03	BYA-11	0.32	1	0.1
133094-04	W-18	2.6	1	0.1
133094-05	BYA-2	1.4	1	0.1
133094-06	BYA-14	0.50	1	0.1
133094-07	HD-33	0.16	1	0.1
133094-08	BYA-H10	3.5	1	0.1
133094-09	HD-22	1.9	1	0.1
133094-10	HD-7	0.78	1	0.1

DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133094
Analyst: AN

Date Sampled: 10/22/13
Date Received: 10/22/13
Date Analyzed: 10/22/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
133094-01	W-16	BQL	1	0.1
133094-02	BYA-9	BQL	1	0.1
133094-03	BYA-11	BQL	1	0.1
133094-04	W-18	BQL	1	0.1
133094-05	BYA-2	BQL	1	0.1
133094-06	BYA-14	BQL	1	0.1
133094-07	HD-33	BQL	1	0.1
133094-08	BYA-H10	BQL	1	0.1
133094-09	HD-22	BQL	1	0.1
133094-10	HD-7	BQL	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 133094-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	10/22/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	10/25/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	10/24/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	10/23/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	10/28/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	10/24/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	10/22/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Company Fugro Consultants
Fax 805-650-7010
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:
P.O.#
Company same
Address 10/29
Phone Contact

PROJ. NO
PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

REMARKS 133094

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	TSS ,Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	pH	REMARKS
1	10/22/13	7:30			W-16	x				5	P+G									6.78	22.7
2		8:30			BYA-9	x														6.81	22.8
3		8:50			BYA-11	x														7.28	22.1
4		7:50			W-18	x														7.07	22.7
5		9:20			BYA-2	x														7.12	21.3
6		9:40			BYA-14	x														7.08	21.5
7		10:15			HD-33	x														6.92	23.2
8		10:35			BYA-H19	x														7.10	22.9
9		10:50			HD-22	x														7.04	23.0
10		11:15			HD-7	x														7.12	22.8

CHECK ONE BOX:
DISPOSE SAMPLES
RETURN SAMPLES

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	10/24/13 12:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		Date/Time	

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

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CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: December 3, 2013
Laboratory Number: 133357
Project Name: Malibu NPDES
Sampled by: Client

On November 21, 2013, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-18	133357-01
W-16	133357-02
BYA-9	133357-03
BYA-11	133357-04
BYA-2	133357-05
BYA-14	133357-06
HD-33	133357-07
BYA-H10	133357-08
HD-22	133357-09
HD-7	133357-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience. This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/21/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	ND	1	5	1.0
133357-02	W-16	ND	1	5	1.0
133357-03	BYA-9	ND	1	5	1.0
133357-04	BYA-11	ND	1	5	1.0
133357-05	BYA-2	ND	1	5	1.0
133357-06	BYA-14	ND	1	5	1.0
133357-07	HD-33	ND	1	5	1.0
133357-08	BYA-H10	ND	1	5	1.0
133357-09	HD-22	ND	1	5	1.0
133357-10	HD-7	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/21/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	3.2	1	5	1.0
133357-02	W-16	ND	1	5	1.0
133357-03	BYA-9	ND	1	5	1.0
133357-04	BYA-11	ND	1	5	1.0
133357-05	BYA-2	1.3	1	5	1.0
133357-06	BYA-14	3.4	1	5	1.0
133357-07	HD-33	4.0	1	5	1.0
133357-08	BYA-H10	1.7	1	5	1.0
133357-09	HD-22	ND	1	5	1.0
133357-10	HD-7	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/21/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	ND	1	2	0.4
133357-02	W-16	ND	1	2	0.4
133357-03	BYA-9	ND	1	2	0.4
133357-04	BYA-11	ND	1	2	0.4
133357-05	BYA-2	4.5	1	2	0.4
133357-06	BYA-14	0.52	1	2	0.4
133357-07	HD-33	4.6	1	2	0.4
133357-08	BYA-H10	0.62	1	2	0.4
133357-09	HD-22	0.51	1	2	0.4
133357-10	HD-7	3.0	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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Environmental and Analytical Services-Since 1994

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/20/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
133357-01	W-18	5.3	1	0.1
133357-02	W-16	0.18	1	0.1
133357-03	BYA-9	0.26	1	0.1
133357-04	BYA-11	0.17	1	0.1
133357-05	BYA-2	0.86	1	0.1
133357-06	BYA-14	4.4	1	0.1
133357-07	HD-33	5.6	1	0.1
133357-08	BYA-H10	0.48	1	0.1
133357-09	HD-22	0.2	1	0.1
133357-10	HD-7	0.21	1	0.1

DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/20/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
133357-01	W-18	BQL	1	0.1
133357-02	W-16	BQL	1	0.1
133357-03	BYA-9	BQL	1	0.1
133357-04	BYA-11	BQL	1	0.1
133357-05	BYA-2	BQL	1	0.1
133357-06	BYA-14	BQL	1	0.1
133357-07	HD-33	BQL	1	0.1
133357-08	BYA-H10	BQL	1	0.1
133357-09	HD-22	BQL	1	0.1
133357-10	HD-7	BQL	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/22/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	ND	1	0.1	0.02
133357-02	W-16	ND	1	0.1	0.02
133357-03	BYA-9	ND	1	0.1	0.02
133357-04	BYA-11	ND	1	0.1	0.02
133357-05	BYA-2	ND	1	0.1	0.02
133357-06	BYA-14	ND	1	0.1	0.02
133357-07	HD-33	ND	1	0.1	0.02
133357-08	BYA-H10	ND	1	0.1	0.02
133357-09	HD-22	ND	1	0.1	0.02
133357-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/27/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	ND	1	0.1	0.02
133357-02	W-16	ND	1	0.1	0.02
133357-03	BYA-9	ND	1	0.1	0.02
133357-04	BYA-11	ND	1	0.1	0.02
133357-05	BYA-2	ND	1	0.1	0.02
133357-06	BYA-14	ND	1	0.1	0.02
133357-07	HD-33	ND	1	0.1	0.02
133357-08	BYA-H10	ND	1	0.1	0.02
133357-09	HD-22	ND	1	0.1	0.02
133357-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/25/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133357-01	W-18	ND	1	0.02	0.004
133357-02	W-16	ND	1	0.02	0.004
133357-03	BYA-9	ND	1	0.02	0.004
133357-04	BYA-11	ND	1	0.02	0.004
133357-05	BYA-2	ND	1	0.02	0.004
133357-06	BYA-14	ND	1	0.02	0.004
133357-07	HD-33	ND	1	0.02	0.004
133357-08	BYA-H10	ND	1	0.02	0.004
133357-09	HD-22	ND	1	0.02	0.004
133357-10	HD-7	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133357
Analyst: AN

Date Sampled: 11/20/13
Date Received: 11/20/13
Date Analyzed: 11/20/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
133357-01	W-18	BQL	1	0.05
133357-02	W-16	BQL	1	0.05
133357-03	BYA-9	BQL	1	0.05
133357-04	BYA-11	BQL	1	0.05
133357-05	BYA-2	BQL	1	0.05
133357-06	BYA-14	BQL	1	0.05
133357-07	HD-33	BQL	1	0.05
133357-08	BYA-H10	BQL	1	0.05
133357-09	HD-22	BQL	1	0.05
133357-10	HD-7	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Analyst: GM/AN
Sample ID: Method Blank
CAS LAB NO: 133357-MB

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	11/21/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	11/25/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	11/21/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	11/21/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	11/27/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	11/22/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	11/20/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

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Ventura, CA 93003
(805) 644-1095 Fax 644-9947
www.capcoenv.com

CHAIN OF CUSTODY RECORD

REPORT
Fax (805) 650-7010
Company FUGRO CONSULTANTS
Address 4820 MCGRATH ST, SUITE 100
VENTURA, CA Email
Phone 650-7000 Contact TIM NICELY

BILL TO:
Company SAME
Address 11/27
Phone Contact

P.O.#

PROJ. NO

PROJECT NAME MALIBU - NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

133357

SAMPLE NO.	DATE SAMPLED 11/20/13	TIME SAMPLED cc	COMP	GRAB	SAMPLE IDENTIFICATION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	TSS, SETTEABLE SOLIDS	BOD	OIL + GREASE	MBAS	SULFIDE	PHENOLS	RESIDUAL CHLORINE	TURBIDITY	REMARKS	
1	~~9/30/13~~	9:00			W-18	X				5	P+L	X	X	X	X	X	X	X	X	7.13	22.6
2		9:15			W-16	X														7.31	22.4
3		9:45			BYA-9	X														6.75	23.6
4		10:15			BYA-11	X														7.35	22.4
5		10:35			BYA-2	X														7.15	21.9
6		10:55			BYA-14	X														7.04	21.9
7		11:15			HD-33	X														6.93	22.9
8		11:35			BYA-H10	X														7.09	23.1
9		11:50			HD-22	X														7.01	23.0
10		12:00			HD-7	X														7.13	22.8

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	11/20/13 cc ~~9/30/13~~ 1:49	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

TURN AROUND TIME
- [ ] STANDARD
- [ ] ~~24 HOURS~~
- [ ] 48 HOURS
- [ ] 72 HOURS

OTHER

CHECK ONE BOX:
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- [ ] RETURN SAMPLES

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Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: December 30, 2013
Laboratory Number: 133620
Project Name: Malibu-NPDES
Sampled by: Client

On December 19, 2013, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-16	133620-01
W-18	133620-02
BYA-9	133620-03
BYA-11	133620-04
BYA-2	133620-05
BYA-14	133620-06
HD-33	133620-07
BYA-H10	133620-08
HD-22	133620-09
HD-7	133620-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/20/13
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	0.1	0.02
133620-02	W-18	ND	1	0.1	0.02
133620-03	BYA-9	ND	1	0.1	0.02
133620-04	BYA-11	ND	1	0.1	0.02
133620-05	BYA-2	ND	1	0.1	0.02
133620-06	BYA-14	ND	1	0.1	0.02
133620-07	HD-33	ND	1	0.1	0.02
133620-08	BYA-H10	ND	1	0.1	0.02
133620-09	HD-22	ND	1	0.1	0.02
133620-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CAPCO Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/27/13
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	0.1	0.02
133620-02	W-18	ND	1	0.1	0.02
133620-03	BYA-9	ND	1	0.1	0.02
133620-04	BYA-11	ND	1	0.1	0.02
133620-05	BYA-2	ND	1	0.1	0.02
133620-06	BYA-14	ND	1	0.1	0.02
133620-07	HD-33	ND	1	0.1	0.02
133620-08	BYA-H10	ND	1	0.1	0.02
133620-09	HD-22	ND	1	0.1	0.02
133620-10	HD-7	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/20/13
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	5	1.0
133620-02	W-18	5.6	1	5	1.0
133620-03	BYA-9	1.1	1	5	1.0
133620-04	BYA-11	ND	1	5	1.0
133620-05	BYA-2	ND	1	5	1.0
133620-06	BYA-14	4.9	1	5	1.0
133620-07	HD-33	ND	1	5	1.0
133620-08	BYA-H10	3.1	1	5	1.0
133620-09	HD-22	3.2	1	5	1.0
133620-10	HD-7	1.9	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: GM

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/23/13
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	5	1.0
133620-02	W-18	ND	1	5	1.0
133620-03	BYA-9	ND	1	5	1.0
133620-04	BYA-11	ND	1	5	1.0
133620-05	BYA-2	ND	1	5	1.0
133620-06	BYA-14	ND	1	5	1.0
133620-07	HD-33	ND	1	5	1.0
133620-08	BYA-H10	ND	1	5	1.0
133620-09	HD-22	ND	1	5	1.0
133620-10	HD-7	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/19/13
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	2	0.4
133620-02	W-18	0.43	1	2	0.4
133620-03	BYA-9	ND	1	2	0.4
133620-04	BYA-11	0.86	1	2	0.4
133620-05	BYA-2	0.4	1	2	0.4
133620-06	BYA-14	ND	1	2	0.4
133620-07	HD-33	ND	1	2	0.4
133620-08	BYA-H10	0.52	1	2	0.4
133620-09	HD-22	ND	1	2	0.4
133620-10	HD-7	0.59	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/20/13
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
133620-01	W-16	BQL	1	0.05
133620-02	W-18	BQL	1	0.05
133620-03	BYA-9	BQL	1	0.05
133620-04	BYA-11	BQL	1	0.05
133620-05	BYA-2	BQL	1	0.05
133620-06	BYA-14	BQL	1	0.05
133620-07	HD-33	BQL	1	0.05
133620-08	BYA-H10	BQL	1	0.05
133620-09	HD-22	BQL	1	0.05
133620-10	HD-7	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/23/13
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
133620-01	W-16	ND	1	0.02	0.004
133620-02	W-18	ND	1	0.02	0.004
133620-03	BYA-9	ND	1	0.02	0.004
133620-04	BYA-11	ND	1	0.02	0.004
133620-05	BYA-2	ND	1	0.02	0.004
133620-06	BYA-14	ND	1	0.02	0.004
133620-07	HD-33	ND	1	0.02	0.004
133620-08	BYA-H10	ND	1	0.02	0.004
133620-09	HD-22	ND	1	0.02	0.004
133620-10	HD-7	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/19/13
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
133620-01	W-16	BQL	1	0.1
133620-02	W-18	BQL	1	0.1
133620-03	BYA-9	BQL	1	0.1
133620-04	BYA-11	BQL	1	0.1
133620-05	BYA-2	BQL	1	0.1
133620-06	BYA-14	BQL	1	0.1
133620-07	HD-33	BQL	1	0.1
133620-08	BYA-H10	BQL	1	0.1
133620-09	HD-22	BQL	1	0.1
133620-10	HD-7	BQL	1	0.1

DF: Dilution Factor

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 133620
Analyst: AN

Date Sampled: 12/19/13
Date Received: 12/19/13
Date Analyzed: 12/20/13
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
133620-01	W-16	0.16	1	0.1
133620-02	W-18	11	1	0.1
133620-03	BYA-9	0.6	1	0.1
133620-04	BYA-11	0.23	1	0.1
133620-05	BYA-2	0.66	1	0.1
133620-06	BYA-14	10	1	0.1
133620-07	HD-33	0.16	1	0.1
133620-08	BYA-H10	4.6	1	0.1
133620-09	HD-22	5.1	1	0.1
133620-10	HD-7	3.30	1	0.1

DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants — Analyst: GM/AN
Sample ID: Method Blank
CAS LAB NO: 133620-MB

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	12/19/13
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	12/23/13
T.S.S.	ND	mg/L	1	5	1.0	2540 D	12/20/13
Oil & Grease	ND	mg/L	1	5	1.0	1664	12/23/13
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	12/27/13
MBAS	ND	mg/L	1	0.1	0.02	5540 C	12/20/13
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	12/20/13

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:
Company same
Address 12/27
Phone Contact

P.O.#

PROJ. NO

PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

133620

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	ANALYSIS: TSS ,Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	REMARKS: pH	
1	12/9/13	7:30			W-16	X				5	P+G									6.79	22.9
2		7:45			W-18	X														7.11	22.4
3		8:15			BYA-9	X														6.81	22.3
4		8:35			BYA-11	X														7.34	20.5
5		8:55			BYA-2	X														7.13	22.1
6		9:10			BYA-14	X														7.09	22.3
7		9:30			HD-33	X														6.98	22.8
8		9:50			BYA-H10	X														7.10	22.6
9		10:30			HD-22	X														7.13	23.0
10		10:45			HD-7	X														6.98	22.9

CHECK ONE BOX:
DISPOSE SAMPLES
RETURN SAMPLES

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	12/16/13 12:53				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time		

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

WHITE COPY_____ CANARY COPY_____ PINK COPY_____

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: February 5, 2014
Laboratory Number: 140189
Project Name: Malibu-NPDES
Sampled by: Client

On January 21, 2014, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-1	140189-01
W-13	140189-02
BYA-4	140189-03
W-8	140189-04
BYA-1	140189-05
BYA-3	140189-06
HD-30	140189-07
HD-10	140189-08
HD-12	140189-09
HD-6	140189-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith L

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 91 pages excluding the cover letter and the Chain of Custody.

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: GM

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/22/14 & 01/24/14
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	5	1.0
140189-02	W-13	ND	1	5	1.0
140189-03	BYA-4	ND	1	5	1.0
140189-04	W-8	ND	1	5	1.0
140189-05	BYA-1	ND	1	5	1.0
140189-06	BYA-3	ND	1	5	1.0
140189-07	HD-30	ND	1	5	1.0
140189-08	HD-10	ND	1	5	1.0
140189-09	HD-12	ND	1	5	1.0
140189-10	HD-6	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/22/14
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	5	1.0
140189-02	W-13	ND	1	5	1.0
140189-03	BYA-4	1.1	1	5	1.0
140189-04	W-8	ND	1	5	1.0
140189-05	BYA-1	2.7	1	5	1.0
140189-06	BYA-3	ND	1	5	1.0
140189-07	HD-30	ND	1	5	1.0
140189-08	HD-10	ND	1	5	1.0
140189-09	HD-12	ND	1	5	1.0
140189-10	HD-6	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.
Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/27/14
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	0.1	0.02
140189-02	W-13	ND	1	0.1	0.02
140189-03	BYA-4	ND	1	0.1	0.02
140189-04	W-8	ND	1	0.1	0.02
140189-05	BYA-1	ND	1	0.1	0.02
140189-06	BYA-3	ND	1	0.1	0.02
140189-07	HD-30	ND	1	0.1	0.02
140189-08	HD-10	ND	1	0.1	0.02
140189-09	HD-12	ND	1	0.1	0.02
140189-10	HD-6	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/21/14
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	2	0.4
140189-02	W-13	ND	1	2	0.4
140189-03	BYA-4	ND	1	2	0.4
140189-04	W-8	ND	1	2	0.4
140189-05	BYA-1	ND	1	2	0.4
140189-06	BYA-3	ND	1	2	0.4
140189-07	HD-30	ND	1	2	0.4
140189-08	HD-10	ND	1	2	0.4
140189-09	HD-12	ND	1	2	0.4
140189-10	HD-6	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/27/14
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	0.02	0.004
140189-02	W-13	ND	1	0.02	0.004
140189-03	BYA-4	ND	1	0.02	0.004
140189-04	W-8	ND	1	0.02	0.004
140189-05	BYA-1	ND	1	0.02	0.004
140189-06	BYA-3	ND	1	0.02	0.004
140189-07	HD-30	ND	1	0.02	0.004
140189-08	HD-10	ND	1	0.02	0.004
140189-09	HD-12	ND	1	0.02	0.004
140189-10	HD-6	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/23/14
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
140189-01	W-1	ND	1	0.1	0.02
140189-02	W-13	ND	1	0.1	0.02
140189-03	BYA-4	ND	1	0.1	0.02
140189-04	W-8	ND	1	0.1	0.02
140189-05	BYA-1	ND	1	0.1	0.02
140189-06	BYA-3	ND	1	0.1	0.02
140189-07	HD-30	ND	1	0.1	0.02
140189-08	HD-10	ND	1	0.1	0.02
140189-09	HD-12	ND	1	0.1	0.02
140189-10	HD-6	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/21/14
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
140189-01	W-1	BQL	1	0.1
140189-02	W-13	BQL	1	0.1
140189-03	BYA-4	BQL	1	0.1
140189-04	W-8	BQL	1	0.1
140189-05	BYA-1	BQL	1	0.1
140189-06	BYA-3	BQL	1	0.1
140189-07	HD-30	BQL	1	0.1
140189-08	HD-10	BQL	1	0.1
140189-09	HD-12	BQL	1	0.1
140189-10	HD-6	BQL	1	0.1

DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/21/14
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
140189-01	W-1	BQL	1	0.05
140189-02	W-13	BQL	1	0.05
140189-03	BYA-4	BQL	1	0.05
140189-04	W-8	BQL	1	0.05
140189-05	BYA-1	BQL	1	0.05
140189-06	BYA-3	BQL	1	0.05
140189-07	HD-30	BQL	1	0.05
140189-08	HD-10	BQL	1	0.05
140189-09	HD-12	BQL	1	0.05
140189-10	HD-6	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 140189
Analyst: AN

Date Sampled: 01/21/14
Date Received: 01/21/14
Date Analyzed: 01/22/14
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
140189-01	W-1	0.32	1	0.1
140189-02	W-13	0.10	1	0.1
140189-03	BYA-4	0.56	1	0.1
140189-04	W-8	0.13	1	0.1
140189-05	BYA-1	13	1	0.1
140189-06	BYA-3	0.23	1	0.1
140189-07	HD-30	0.36	1	0.1
140189-08	HD-10	0.2	1	0.1
140189-09	HD-12	0.6	1	0.1
140189-10	HD-6	0.22	1	0.1

DF: Dilution Factor

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-01
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.132

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50	=	100 % Survival in 100% Sample
TU(a)	=	0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 28 Jan-14 13:36 (p 1 of 1)
Test Code: CAP0114.132afml | 02-2305-7430

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	10-5447-6693	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	06-8660-9914	**Code:**	CAP0114.132af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	26h (12.1 °C)	**Station:**	140189-01		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
05-0707-8095	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
15-5025-4831	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
05-0707-8095	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
15-5025-4831	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-0707-8095	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:36	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	10-5447-6693	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	06-8660-9914	**Code:**	CAP0114.132af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	26h (12.1 °C)	**Station:**	140189-01		

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		100	18	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

96h Survival Rate Binomials

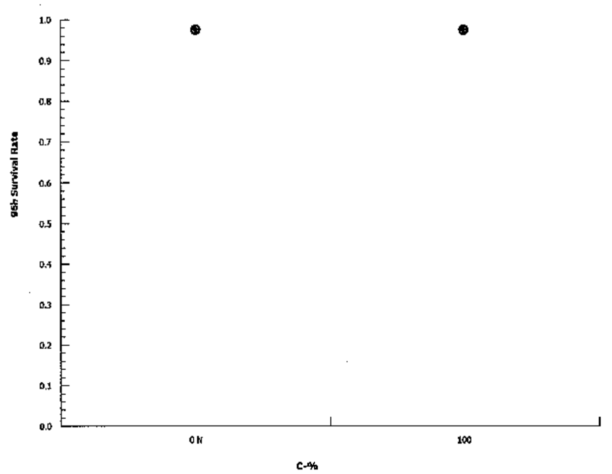
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

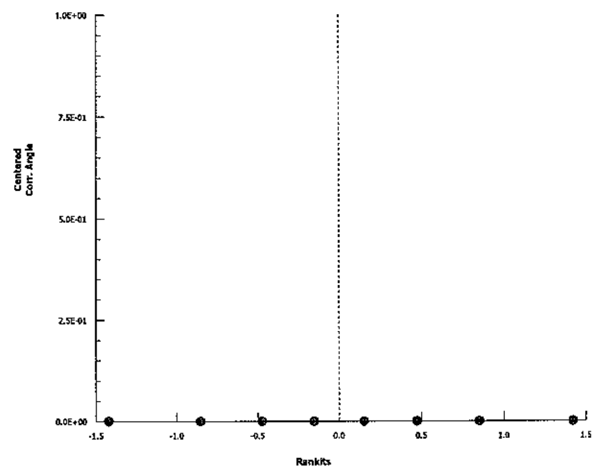
Analyst: ______ QA: ______

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-0707-8095	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:36	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	15-5025-4831	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:36	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	10-5447-6693	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	06-8660-9914	**Code:**	CAP0114.132af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	26h (12.1 °C)	**Station:**	140189-01		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

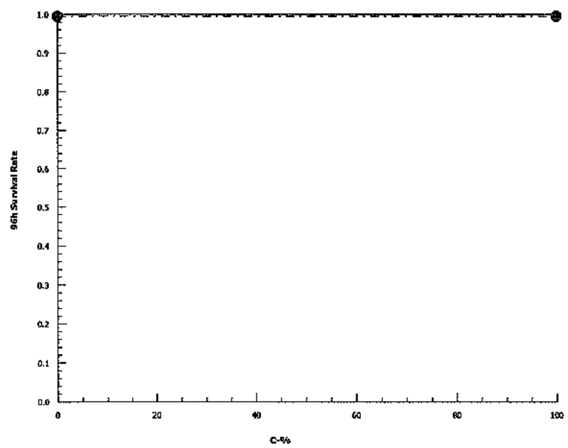
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	15-5025-4831	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:36	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	10-5447-6693	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	06-8660-9914	**Code:**	CAP0114.132af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	26h (12.1 °C)	**Station:**	140189-01		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	388	388	388	388	388	0	0	0.0%	0
Overall		6	226			62	388				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2419	2397	2440	2411	2428	4.978	8.622	0.36%	0
Overall		6	1381			335	2428				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	6.88	5.331	8.429	5	8.5	0.558	1.248	18.14%	0
Overall		10	7.23			5	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	756	756	756	756	756	0	0	0.0%	0
Overall		6	424.8			93	756				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.36	6.836	7.884	6.8	7.9	0.1887	0.4219	5.73%	0
Overall		10	7.54			6.8	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.42	23.32	25.52	24	26	0.3955	0.8843	3.62%	0
Overall		10	24.23			24	26				0 (0%)

Fathead Minnow 96-h Acute Survival Test **Aquatic Bioassay & Consulting Labs, Inc.**

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		388	388	388

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2411	2417	2428

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		5	8.5	7	7.1	6.8

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		756	756	756

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.8	7.9	7.1	7.5	7.5

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		26	24	24.1	24	24

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-02
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.133

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	16-5687-8680	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:31	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	00-1009-8156	**Code:**	CAP0114.133af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:20	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-02		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
20-1223-3609	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
06-8909-2637	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
06-8909-2637	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
20-1223-3609	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	20-1223-3609	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:46	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	16-5687-8680	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:31	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	00-1009-8156	**Code:**	CAP0114.133af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:20	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-02		

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	18	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

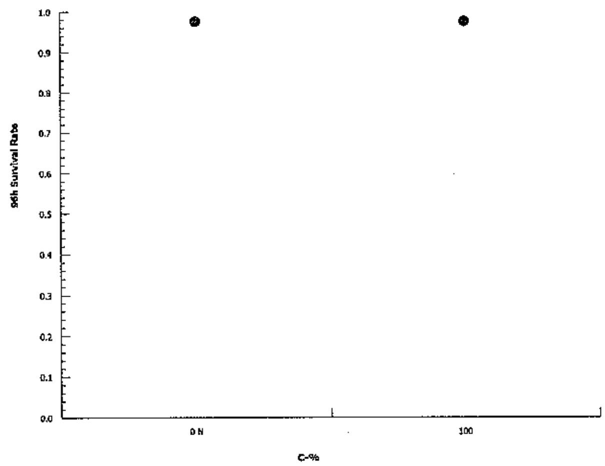
96h Survival Rate Binomials

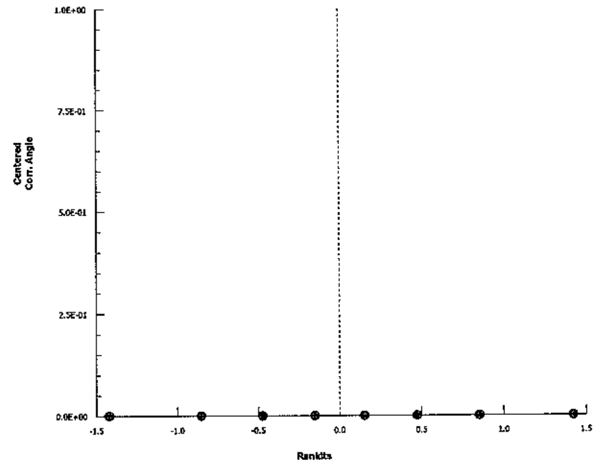
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	20-1223-3609	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:46	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	06-8909-2637	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:46	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	16-5687-8680	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:31	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	00-1009-8156	**Code:**	CAP0114.133af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:20	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-02		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

96h Survival Rate Binomials

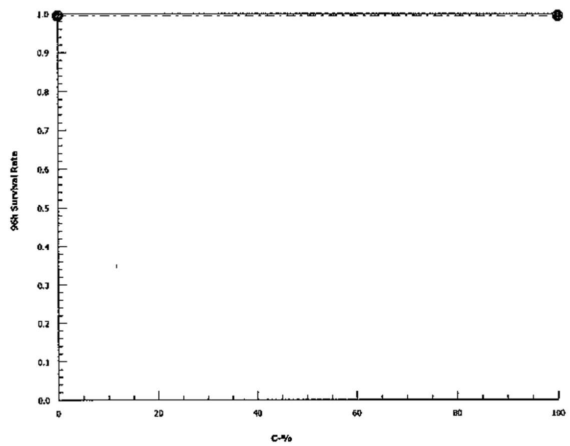
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: ______ QA: ______

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	06-8909-2637	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:46	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Test Code: CAP0114.133afml | 00-7387-7519

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	16-5687-8680	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:31	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	00-1009-8156	**Code:**	CAP0114.133af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:20	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-02		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	339	339	339	339	339	0	0	0.0%	0
Overall		6	201.5			62	339				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2330	2308	2352	2325	2340	5	8.66	0.37%	0
Overall		6	1337			335	2340				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.08	5.774	8.386	5.8	8.7	0.4705	1.052	14.86%	0
Overall		10	7.33			5.8	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	903	903	903	903	903	0	0	0.0%	0
Overall		6	498.3			93	903				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.16	6.622	7.698	6.6	7.8	0.1939	0.4336	6.06%	0
Overall		10	7.44			6.6	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.38	23.46	25.3	24	25.7	0.3323	0.743	3.05%	0
Overall		10	24.21			24	25.7				0 (0%)

Analyst: _____ QA: _____

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		339	339	339

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2325	2325	2340

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		5.8	8.7	7	7.2	6.7

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		903	903	903

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.6	7.8	7	7.2	7.2

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		25.7	24	24.2	24	24

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-03
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.134

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 28 Jan-14 13:53 (p 1 of 1)
Test Code: CAP0114.134afml | 16-1821-8417

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	03-7052-2506	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:32	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	19-2831-9642	**Code:**	CAP0114.134af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-03		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-2914-3715	96h Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
14-5327-3303	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
14-5327-3303	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
16-2914-3715	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-2914-3715	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:53	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	03-7052-2506	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:32	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	19-2831-9642	**Code:**	CAP0114.134af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-03		

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	18	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	6			
Total	0		7			

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

96h Survival Rate Binomials

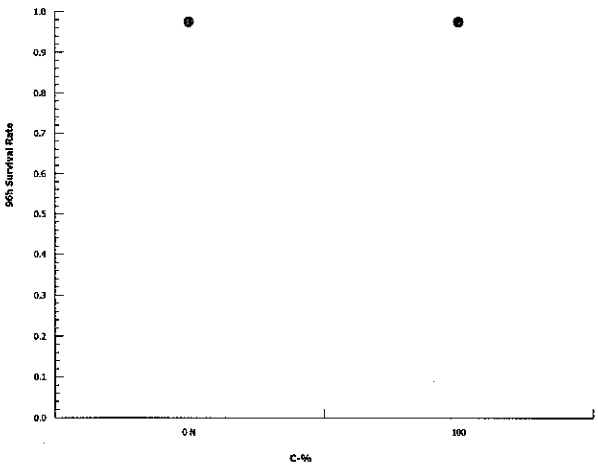
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

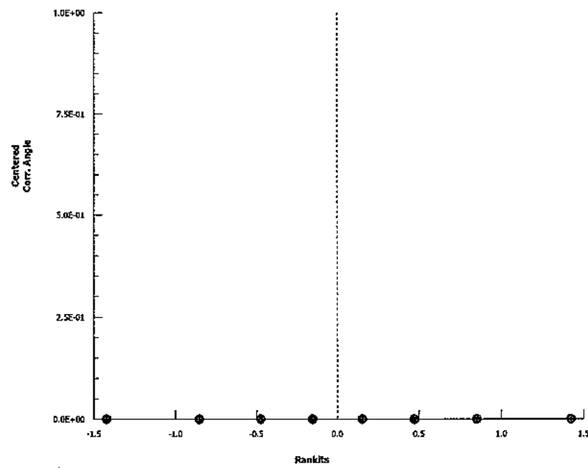
Analyst: LM QA: Pass

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-2914-3715	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:53	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	14-5327-3303	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:53	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	03-7052-2506	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:32	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	19-2831-9642	**Code:**	CAP0114.134af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-03		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	1	1

96h Survival Rate Binomials

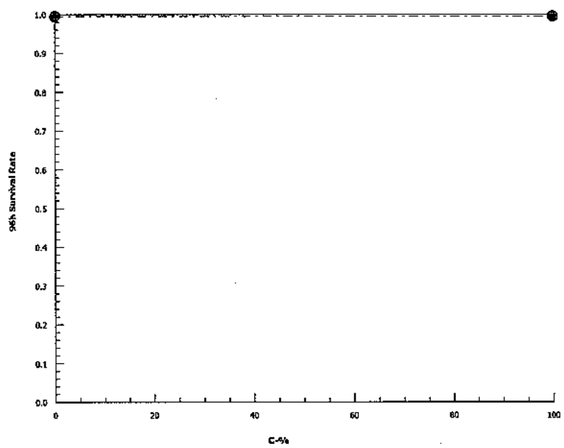
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: L QA: P

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	14-5327-3303	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 13:53	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Report Date: 28 Jan-14 13:53 (p 1 of 2)
Test Code: CAP0114.134afml | 16-1821-8417

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	03-7052-2506	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:32	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	19-2831-9642	**Code:**	CAP0114.134af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-03		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	267	267	267	267	267	0	0	0.0%	0
Overall		6	165.5			62	267				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2381	2303	2459	2345	2401	18.04	31.24	1.31%	0
Overall		6	1362			335	2401				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	6.94	5.403	8.477	5.2	8.7	0.5537	1.238	17.84%	0
Overall		10	7.26			5.2	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	861	861	861	861	861	0	0	0.0%	0
Overall		6	477.3			93	861				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.18	6.65	7.71	6.8	7.9	0.1908	0.4266	5.94%	0
Overall		10	7.45			6.8	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.38	23.46	25.3	24	25.7	0.3323	0.743	3.05%	0
Overall		10	24.21			24	25.7				0 (0%)

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		267	267	267

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2401	2397	2345

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		5.2	8.7	6.9	7	6.9

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		861	861	861

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.8	7.9	7	7.2	7

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		25.7	24	24.2	24	24

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-04
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.135

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50	=	97.5 % Survival in 100% Sample
TU(a)	=	0.23

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 28 Jan-14 14:09 (p 1 of 1)
Test Code: CAP0114.135afml | 10-2070-6821

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	07-9970-6238	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:33	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	14-0667-9622	**Code:**	CAP0114.135af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:54	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-04		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-4555-2010	96h Survival Rate	100	>100	NA	5.56%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
20-2625-1808	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
09-4555-2010	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
20-2625-1808	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	2.5%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	0.9	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	9/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	09-4555-2010	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:09	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	07-9970-6238	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:33	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	14-0667-9622	**Code:**	CAP0114.135af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:54	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-04		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.56%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	16	NA	1	6	0.5000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	2.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	2.89%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	0.9	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
100		1.412	1.249	1.412	1.412

Analyst: QA:

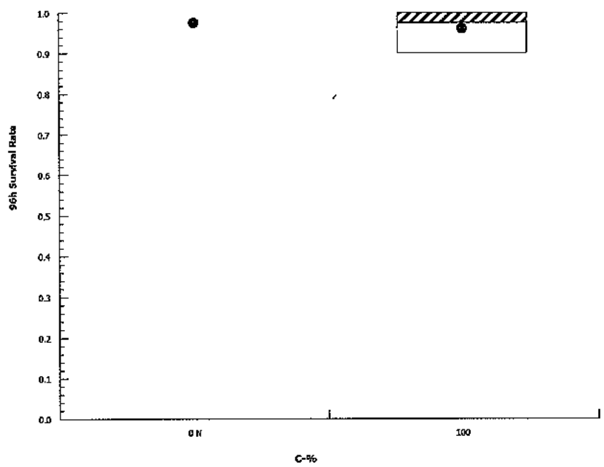
Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

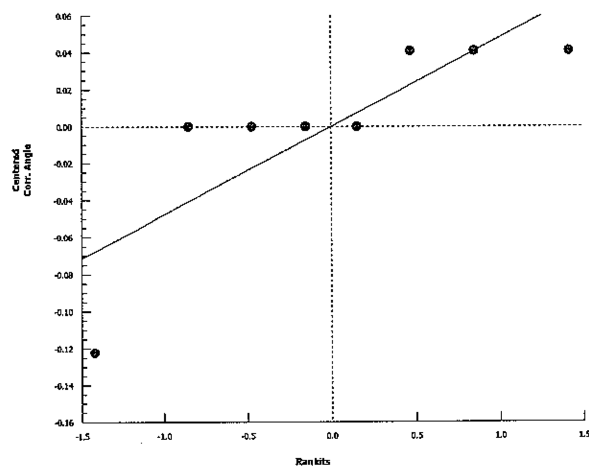
Analysis ID:	09-4555-2010	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:09	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	9/10	10/10	10/10

Graphics





CETIS Analytical Report

Report Date: 28 Jan-14 14:09 (p 1 of 2)
Test Code: CAP0114.135afml | 10-2070-6821

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	20-2625-1808	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:09	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	07-9970-6238	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:33	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	14-0667-9622	**Code:**	CAP0114.135af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:54	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-04		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	0.975	0.9	1	0.025	0.05	5.13%	2.5%	39	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	0.9	1	1

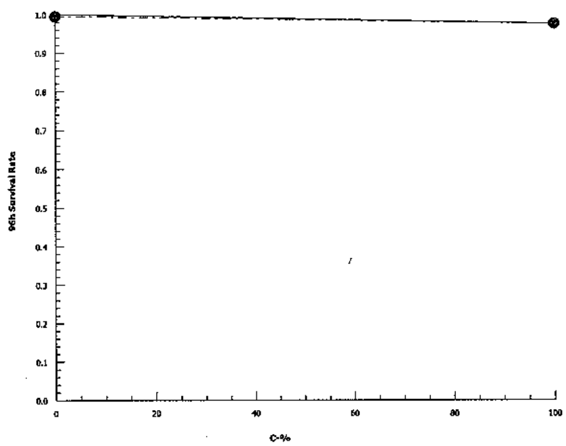
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	9/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	20-2625-1808	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:09	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Test Code: CAP0114.135afml | 10-2070-6821

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	07-9970-6238	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:33	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	14-0667-9622	**Code:**	CAP0114.135af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 10:54	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	25h (12.1 °C)	**Station:**	140189-04		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	464	464	464	464	464	0	0	0.0%	0
Overall		6	264			62	464				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2200	2104	2296	2158	2234	22.3	38.63	1.76%	0
Overall		6	1272			335	2234				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.52	6.569	8.471	6.7	8.7	0.3426	0.7662	10.19%	0
Overall		10	7.55			6.7	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	734	734	734	734	734	0	0	0.0%	0
Overall		6	413.8			93	734				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.42	6.803	8.037	6.7	8	0.2223	0.497	6.7%	0
Overall		10	7.57			6.7	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.12	23.85	24.39	24	24.5	0.09695	0.2168	0.9%	0
Overall		10	24.08			24	24.5				0 (0%)

Analyst: L QA: P

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		464	464	464

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2234	2158	2208

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		7.8	8.7	7.2	7.2	6.7

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		734	734	734

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.7	8	7.5	7.7	7.2

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24.5	24	24.1	24	24

Analyst: QA:

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-05
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.136

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50	=	95.0 % Survival in 100% Sample
TU(a)	=	0.41

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-1846-4577	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:34	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	05-0395-7832	**Code:**	CAP0114.136af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:15	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-05		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
14-0252-2639	96h Survival Rate	100	>100	NA	6.13%	1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
10-8434-8310	96h Survival Rate	EC5	100	20	N/A	1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
10-8434-8310	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria
14-0252-2639	96h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.95	0.8581	1	0.9	1	0.02887	0.05774	6.08%	5.0%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	0.9	0.9

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	9/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	14-0252-2639	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	13-1846-4577	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:34	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	05-0395-7832	**Code:**	CAP0114.136af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:15	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-05		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	6.13%	Passes 96h survival rate

Equal Variance t Two-Sample Test

Control vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	1.732	1.943	0.091	6	0.0670	CDF	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.01327967	0.01327967	1	3	0.1340	Non-Significant Effect
Error	0.02655933	0.004426555	6			
Total	0.039839		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Distribution	Shapiro-Wilk W Normality	0.8489	0.6451	0.0929	Normal Distribution
Distribution	Kolmogorov-Smirnov D	0.25	0.3313	0.1599	Normal Distribution
Distribution	Anderson-Darling A2 Normality	0.6699	3.878	0.0804	Normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	0.95	0.8581	1	0.95	0.9	1	0.02887	6.08%	5.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
100		4	1.331	1.181	1.48	1.331	1.249	1.412	0.04705	7.07%	5.77%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	0.9	0.9

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
100		1.412	1.412	1.249	1.249

96h Survival Rate Binomials

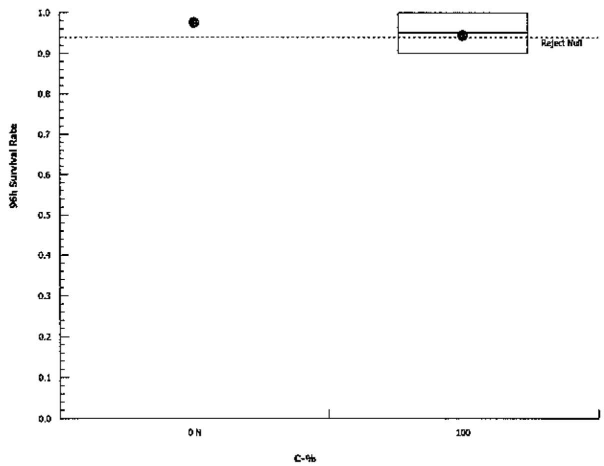
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	9/10

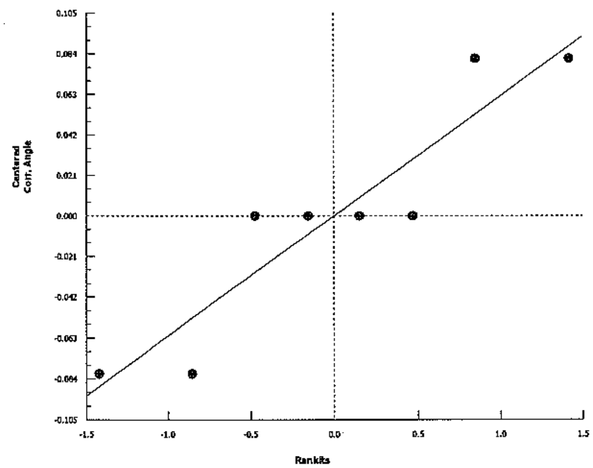
Analyst: QA:

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	14-0252-2639	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:18	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Report Date: 28 Jan-14 14:18 (p 1 of 2)
Test Code: CAP0114.136afml | 12-5368-5809

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	10-8434-8310	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:18	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	13-1846-4577	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:34	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	05-0395-7832	**Code:**	CAP0114.136af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:15	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-05		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	100	20	N/A	1	NA	5
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	0.95	0.9	1	0.02887	0.05773	6.08%	5.0%	38	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
100		1	1	0.9	0.9

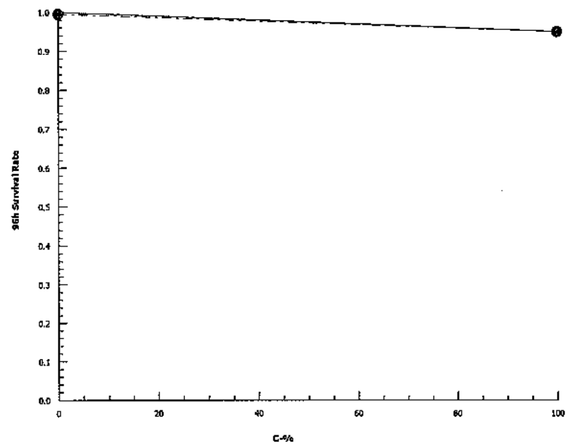
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	9/10

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	10-8434-8310	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:18	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-1846-4577	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:34	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	05-0395-7832	**Code:**	CAP0114.136af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:15	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-05		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	415	415	415	415	415	0	0	0.0%	0
Overall		6	239.5			62	415				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2210	2193	2228	2204	2218	4.096	7.095	0.32%	0
Overall		6	1277			335	2218				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.54	6.514	8.566	6.8	8.9	0.3696	0.8264	10.96%	0
Overall		10	7.56			6.8	8.9				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	1032	1032	1032	1032	1032	0	0	0.0%	0
Overall		6	562.8			93	1032				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.44	6.834	8.046	6.7	7.9	0.2182	0.4879	6.56%	0
Overall		10	7.58			6.7	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.12	23.9	24.34	24	24.4	0.07999	0.1789	0.74%	0
Overall		10	24.08			24	24.4				0 (0%)

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		415	415	415

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2218	2204	2209

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		7.7	8.9	7.2	7.1	6.8

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		1032	1032	1032

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.7	7.9	7.2	7.7	7.7

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24.4	24	24.2	24	24

aquatic
bioassay &
consulting
laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-06
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.137

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50	=	100 % Survival in 100% Sample
TU(a)	=	0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date:	28 Jan-14 14:27 (p 1 of 1)
Test Code:	CAP0114.137afml | 20-3149-5698

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	04-1531-1293	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:35	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	04-4008-9223	**Code:**	CAP0114.137af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:36	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-06		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-8247-0601	96h Survival Rate	100	>100	NA	5.2%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
05-0165-3339	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-8247-0601	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria
05-0165-3339	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-8247-0601	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	04-1531-1293	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:35	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	04-4008-9223	**Code:**	CAP0114.137af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:36	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-06		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.2%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		100	20	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
100		1.412	1.412	1.412	1.412

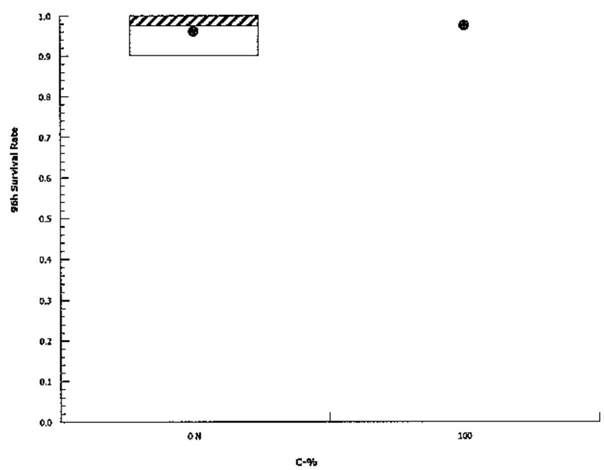
Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

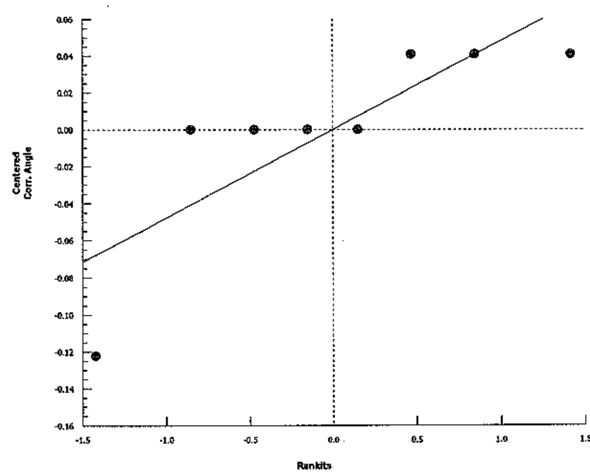
Analysis ID:	01-8247-0601	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-0165-3339	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:26	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	04-1531-1293	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:35	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	04-4008-9223	**Code:**	CAP0114.137af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:36	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-06		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

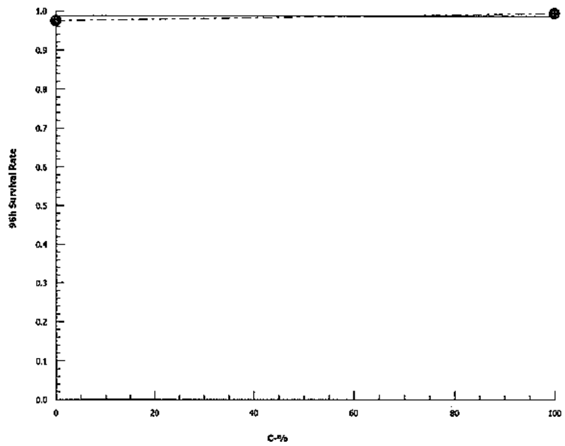
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-0165-3339	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:26	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	04-1531-1293	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:35	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	04-4008-9223	**Code:**	CAP0114.137af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 11:36	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-06		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	256	256	256	256	256	0	0	0.0%	0
Overall		6	160			62	256				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2637	2608	2665	2625	2648	6.642	11.5	0.44%	0
Overall		6	1490			335	2648				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.2	5.977	8.423	6.1	8.8	0.4405	0.9849	13.68%	0
Overall		10	7.39			6.1	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	791	791	791	791	791	0	0	0.0%	0
Overall		6	442.3			93	791				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.64	7.196	8.084	7.1	8.1	0.16	0.3578	4.68%	0
Overall		10	7.68			7	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
Overall		10	24.04			24	24.2				0 (0%)

Analyst: ____ QA: ____

Fathead Minnow 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		256	256	256

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2637	2625	2648

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		6.1	8.8	7.1	7.1	6.9

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		791	791	791

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		7.1	8.1	7.6	7.7	7.7

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24	24	24.2	24	24

Analyst: QA:

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-07
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.138

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

29 north olive ventura, ca 93001 (805) 643 5621 www.aquabio.org

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	16-1508-4869	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	13-7421-8030	**Code:**	CAP0114.138af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-07		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-6436-0580	96h Survival Rate	100	>100	NA	5.2%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
05-6639-7563	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
04-6436-0580	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria
05-6639-7563	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	04-6436-0580	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:35	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	16-1508-4869	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	13-7421-8030	**Code:**	CAP0114.138af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-07		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.2%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		100	20	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
100		1.412	1.412	1.412	1.412

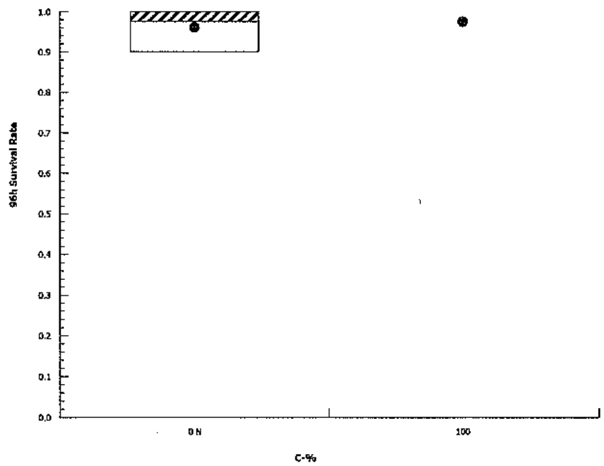
Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

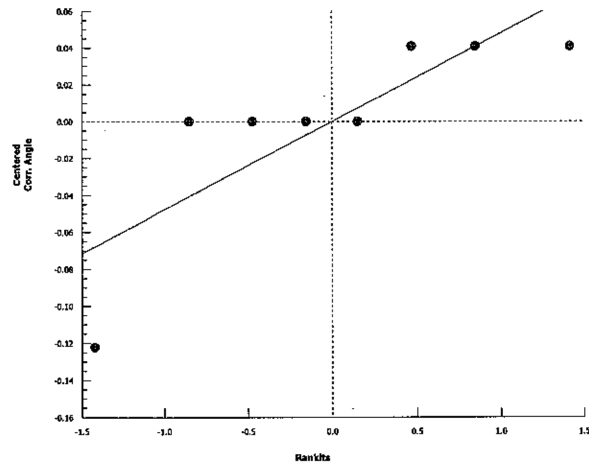
Analysis ID:	04-6436-0580	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:35	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-6639-7563	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:35	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	16-1508-4869	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	13-7421-8030	**Code:**	CAP0114.138af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-07		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

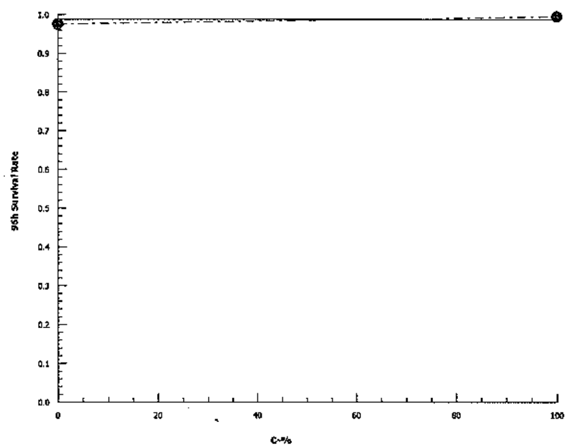
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	05-6639-7563	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:35	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Report Date:	28 Jan-14 14:35 (p 1 of 2)
Test Code:	CAP0114.138afml | 18-3347-4681

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	16-1508-4869	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	13-7421-8030	**Code:**	CAP0114.138af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:00	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	24h (12.1 °C)	**Station:**	140189-07		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	371	371	371	371	371	0	0	0.0%	0
Overall		6	217.5			62	371				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2460	2451	2470	2456	2463	2.186	3.786	0.15%	0
Overall		6	1402			335	2463				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	6.76	5.128	8.392	4.8	8.5	0.5879	1.315	19.45%	0
Overall		10	7.17			4.8	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	771	771	771	771	771	0	0	0.0%	0
Overall		6	432.3			93	771				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.32	6.813	7.827	6.8	7.9	0.1828	0.4087	5.58%	0
Overall		10	7.52			6.8	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.02	23.96	24.08	24	24.1	0.01997	0.04466	0.19%	0
Overall		10	24.03			24	24.2				0 (0%)

CETIS Measurement Report

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		371	371	371

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2462	2456	2463

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		4.8	8.5	6.9	6.9	6.7

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		771	771	771

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.8	7.9	7.2	7.5	7.2

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24	24	24.1	24	24

Analyst: QA:

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-08
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.139

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	15-2876-3986	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:37	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	15-2577-9264	**Code:**	CAP0114.139af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:25	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-08		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-8177-4464	96h Survival Rate	100	>100	NA	5.2%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
16-4720-7442	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
04-8177-4464	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria
16-4720-7442	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Report Date:	28 Jan-14 14:43 (p 1 of 2)
Test Code:	CAP0114.139afml | 02-8461-0188

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	04-8177-4464	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:43	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	15-2876-3986	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:37	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	15-2577-9264	**Code:**	CAP0114.139af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:25	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-08		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.2%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	20	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
100		1.412	1.412	1.412	1.412

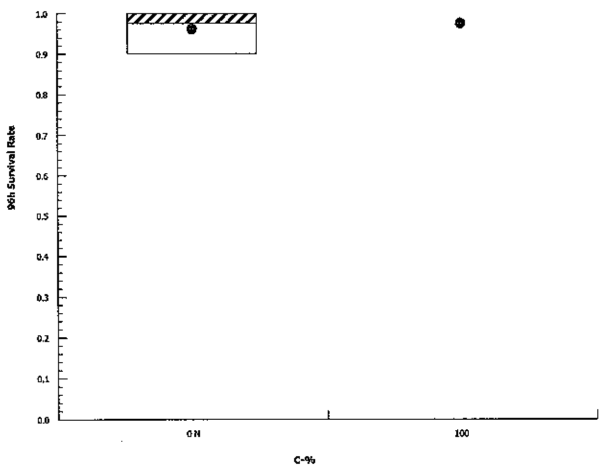
Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

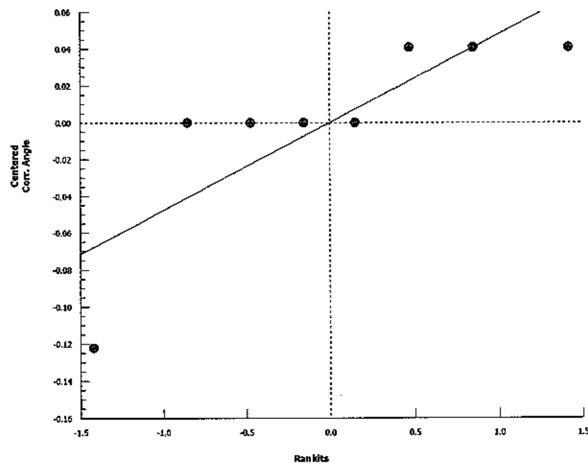
Analysis ID:	04-8177-4464	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:43	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





CETIS Analytical Report

Report Date: 28 Jan-14 14:43 (p 1 of 2)
Test Code: CAP0114.139afml | 02-8461-0188

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-4720-7442	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:43	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	15-2876-3986	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:37	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	15-2577-9264	**Code:**	CAP0114.139af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:25	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-08		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

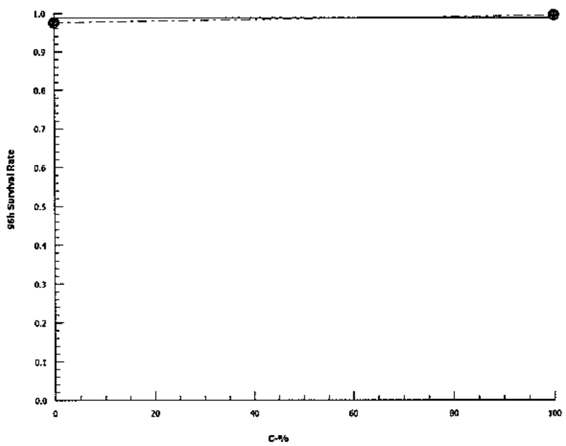
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: L QA: P

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-4720-7442	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:43	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Report Date:	28 Jan-14 14:43 (p 1 of 2)
Test Code:	CAP0114.139afml | 02-8461-0188

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	15-2876-3986	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:37	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	15-2577-9264	**Code:**	CAP0114.139af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:25	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-08		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	355	355	355	355	355	0	0	0.0%	0
Overall		6	209.5			62	355				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2329	2329	2329	2329	2329	0	0	0.0%	0
Overall		6	1336			335	2329				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.52	6.654	8.386	6.9	8.6	0.3121	0.6979	9.28%	0
Overall		10	7.55			6.9	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	954	954	954	954	954	0	0	0.0%	0
Overall		6	523.8			93	954				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.34	6.824	7.856	6.8	7.8	0.186	0.4159	5.67%	0
Overall		10	7.53			6.8	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.26	23.67	24.85	24	25.1	0.2135	0.4775	1.97%	0
Overall		10	24.15			24	25.1				0 (0%)

Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		355	355	355

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2329	2329	2329

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		7.8	8.6	7.3	7	6.9

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		954	954	954

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.8	7.8	7.1	7.3	7.7

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		25.1	24	24.2	24	24

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-09
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.140

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-3002-4416	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:38	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	04-8607-4853	**Code:**	CAP0114.140af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-09		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-9585-7515	96h Survival Rate	100	>100	NA	5.2%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
01-8075-1129	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-8075-1129	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria
07-9585-7515	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-9585-7515	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:51	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	13-3002-4416	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:38	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	04-8607-4853	**Code:**	CAP0114.140af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-09		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.2%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	20	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
100		1.412	1.412	1.412	1.412

Analyst: L QA: P

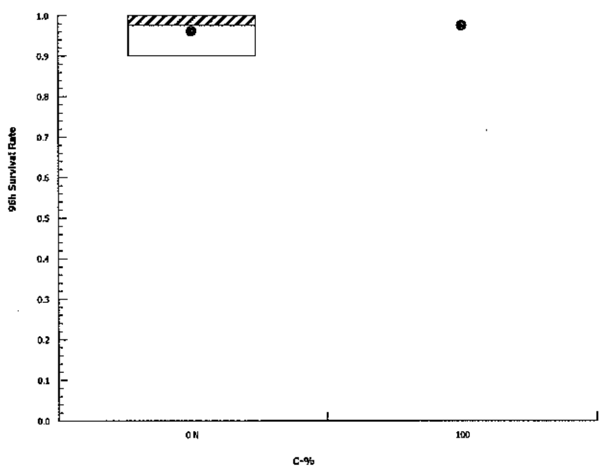
Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

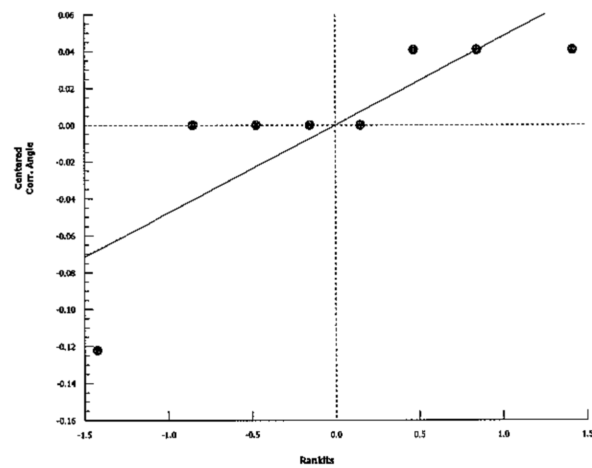
Analysis ID:	07-9585-7515	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:51	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-8075-1129	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:51	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	13-3002-4416	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:38	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	04-8607-4853	**Code:**	CAP0114.140af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-09		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

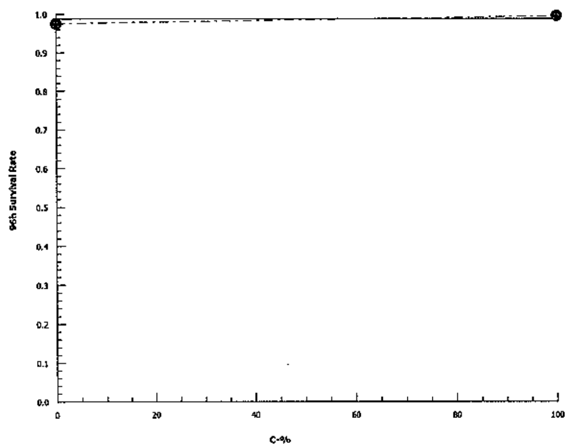
96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-8075-1129	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:51	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-3002-4416	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:38	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	04-8607-4853	**Code:**	CAP0114.140af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:35	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-09		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	249	249	249	249	249	0	0	0.0%	0
Overall		6	156.5			62	249				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2392	2378	2407	2388	2399	3.383	5.859	0.24%	0
Overall		6	1368			335	2399				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	7.04	5.784	8.296	5.8	8.6	0.4523	1.011	14.37%	0
Overall		10	7.31			5.8	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	802	802	802	802	802	0	0	0.0%	0
Overall		6	447.8			93	802				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.16	6.682	7.638	6.8	7.8	0.172	0.3847	5.37%	0
Overall		10	7.44			6.8	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.16	23.84	24.48	24	24.6	0.1166	0.2608	1.08%	0
Overall		10	24.1			24	24.6				0 (0%)

Analyst: X QA: P

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		249	249	249

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2399	2388	2390

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		5.8	8.6	7	7.1	6.7

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		802	802	802

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.8	7.8	7	7.2	7

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24.6	24	24.2	24	24

aquatic bioassay & consulting laboratories, inc

January 29, 2014

Ms. Rosa Hernandez
CAPCO Analytical
1536 Eastman Ave., Suite B
Ventura, CA 93003

Dear Ms. Hernandez:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms EPA-821-R-02-012.* "All acceptability criteria were met and the concentration-response was normal. This is a valid test." Results were as follows:

CLIENT:	CAPCO Analytical
SAMPLE I.D.:	140189-10
DATE RECEIVED:	21 Jan - 14
ABC LAB. NO.:	CAP0114.141

96 HOUR ACUTE FATHEAD MINNOW SURVIVAL BIOASSAY

LC50 = 100 % Survival in 100% Sample
TU(a) = 0.00

Yours very truly,

Scott Johnson
Laboratory Director

29 north olive ventura, ca 93001 (805) 643 5621 www.aquabio.org

CETIS Summary Report

Report Date: 28 Jan-14 14:57 (p 1 of 1)
Test Code: CAP0114.141afml | 19-1995-5459

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	17-9254-8209	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:39	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	17-7886-9754	**Code:**	CAP0114.141af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:45	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-10		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-1367-8114	96h Survival Rate	100	>100	NA	5.2%	1	Wilcoxon Rank Sum Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
21-3886-7114	96h Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
17-1367-8114	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria
21-3886-7114	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	0.9	1	0.025	0.05	5.13%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	-2.56%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: LM QA: Pass

CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	17-1367-8114	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:57	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	17-9254-8209	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:39	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	17-7886-9754	**Code:**	CAP0114.141af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:45	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-10		

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.2%	Passes 96h survival rate

Wilcoxon Rank Sum Two-Sample Test

Control vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control	100	20	NA	1	6	1.0000	Exact	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.003319917	0.003319917	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.003319917	6			
Total	0.02323942		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	9	13.75	0.0240	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.7065	0.6451	0.0027	Non-normal Distribution
Distribution	Kolmogorov-Smirnov D	0.375	0.3313	0.0015	Non-normal Distribution
Distribution	Anderson-Darling A2 Normality	1.162	3.878	0.0049	Non-normal Distribution

96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	0.975	0.8954	1	1	0.9	1	0.025	5.13%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-2.56%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	0.0%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	-2.97%

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.249	1.412	1.412
100		1.412	1.412	1.412	1.412

Analyst: QA:

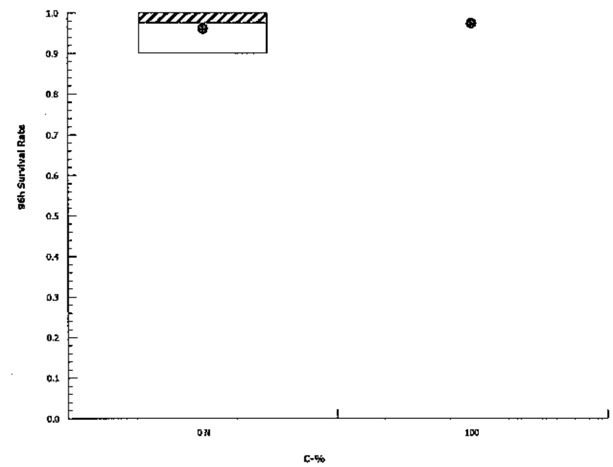
Fathead Minnow 96-h Acute Survival Test | **Aquatic Bioassay & Consulting Labs, Inc.**

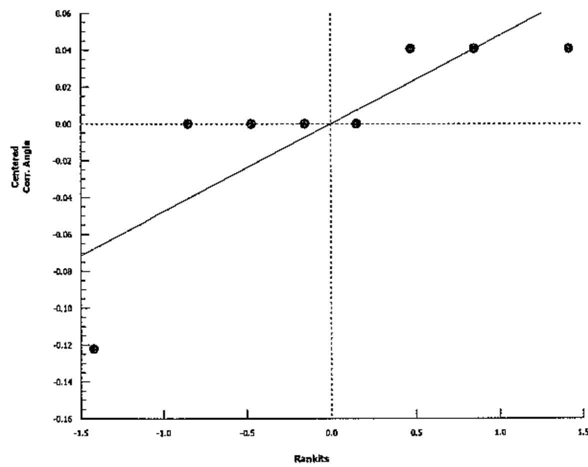
Analysis ID:	17-1367-8114	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:57	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





CETIS Analytical Report

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	21-3886-7114	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:57	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Batch ID:	17-9254-8209	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:39	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	17-7886-9754	**Code:**	CAP0114.141af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:45	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-10		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

96h Survival Rate Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.975	0.9	1	0.025	0.05	5.13%	0.0%	39	40
100		4	1	1	1	0	0	0.0%	-2.56%	40	40

96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	1	1
100		1	1	1	1

96h Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	9/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Analyst: L QA: P

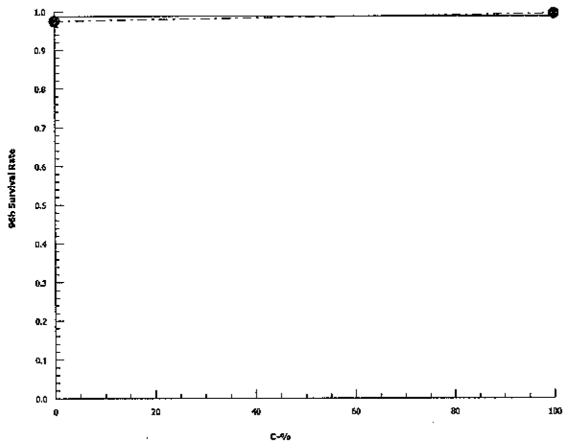
CETIS Analytical Report

Report Date: 28 Jan-14 14:57 (p 2 of 2)
Test Code: CAP0114.141afml | 19-1995-5459

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	21-3886-7114	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.8.7
Analyzed:	28 Jan-14 14:57	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Analyst: QA:

CETIS Measurement Report

Report Date: 28 Jan-14 14:57 (p 1 of 2)
Test Code: CAP0114.141afml | 19-1995-5459

Fathead Minnow 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	17-9254-8209	**Test Type:**	Survival (96h)	**Analyst:**	
Start Date:	22 Jan-14 11:39	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	26 Jan-14 12:00	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	4d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	17-7886-9754	**Code:**	CAP0114.141af	**Client:**	Capco Analytical Services
Sample Date:	21 Jan-14 12:45	**Material:**	Sample Water	**Project:**	ABC Labs Acute Toxicity 140189
Receive Date:	21 Jan-14 15:20	**Source:**	Bioassay Report		
Sample Age:	23h (12.1 °C)	**Station:**	140189-10		

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	64	59.7	68.3	62	65	1	1.732	2.71%	0
100		3	504	504	504	504	504	0	0	0.0%	0
Overall		6	284			62	504				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	343.3	325.4	361.3	335	348	4.177	7.234	2.11%	0
100		3	2251	2232	2270	2246	2260	4.509	7.81	0.35%	0
Overall		6	1297			335	2260				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.58	6.625	8.535	6.9	8.8	0.3441	0.7694	10.15%	0
100		5	6.56	4.825	8.295	4.8	8.7	0.625	1.397	21.3%	0
Overall		10	7.07			4.8	8.8				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	3	93.67	90.8	96.54	93	95	0.6667	1.155	1.23%	0
100		3	782	782	782	782	782	0	0	0.0%	0
Overall		6	437.8			93	782				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	7.72	7.176	8.264	7	8.2	0.196	0.4382	5.68%	0
100		5	7.04	6.502	7.578	6.7	7.8	0.1939	0.4336	6.16%	0
Overall		10	7.38			6.7	8.2				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	5	24.04	23.93	24.15	24	24.2	0.03999	0.08941	0.37%	0
100		5	24.06	23.89	24.23	24	24.3	0.06001	0.1342	0.56%	0
Overall		10	24.05			24	24.3				0 (0%)

Fathead Minnow 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	62	65	65
100		504	504	504

Conductivity-µmhos

C-%	Control Type	1	2	3
0	Negative Contr	335	347	348
100		2260	2247	2246

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	8.8	7	7.4	6.9
100		4.8	8.7	6.6	6.5	6.2

Hardness (CaCO3)-mg/L

C-%	Control Type	1	2	3
0	Negative Contr	95	93	93
100		782	782	782

pH-Units

C-%	Control Type	1	2	3	4	5
0	Negative Contr	7.8	7	8.2	7.8	7.8
100		6.7	7.8	6.9	6.9	6.9

Temperature-°C

C-%	Control Type	1	2	3	4	5
0	Negative Contr	24.2	24	24	24	24
100		24	24	24.3	24	24

Analyst: QA:

QUALITY CONTROL SECTION

CAPCO
Analytical Services, Inc.
Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Analyst: GM/AN
Sample ID: Method Blank
CAS LAB NO: 140189-MB

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	01/21/14
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	01/27/14
T.S.S.	ND	mg/L	1	5	1.0	2540 D	01/22/14
Oil & Grease	ND	mg/L	1	5	1.0	1664	01/22/14
Oil & Grease	ND	mg/L	1	5	1.0	1664	01/24/14
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	01/27/14
MBAS	ND	mg/L	1	0.1	0.02	5540 C	01/23/14
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	01/21/14

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:
Company same
Address 1/28
Phone Contact

P.O.#

PROJ. NO

PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

140189

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	TSS ,Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	Acute Toxicity pH	REMARKS
1	1/21/14	10:00			W-1	X				5	P+G									6.94	20.7
2		10:20			W-13	X														6.79	21.7
3		10:35			B4A-4	X														7.02	21.8
4		10:54			W-8	X														6.79	21.9
5		11:15			B4A-1	X														6.86	21.7
6		11:36			B4A-3	X														7.01	21.5
7		12:00			HD-30	X														6.91	21.2
8		12:25			HD-10	X														6.72	22.1
9		12:35			HD-12	X														6.99	22.3
10		12:45			HD-6	X														6.77	22.4

CHECK ONE BOX:
DISPOSE SAMPLES
RETURN SAMPLES

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	1/21/14 2:00				
	1/21/14 2:00 PM				

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

WHITE COPY CANARY COPY PINK COPY

Date of Report: 05/07/2014

Tim Nicely

Fugro Consultants
4820 McGrath Street Ste.100
Ventura, CA 93003-7778

Client Project:	[none]
BCL Project:	Malibu -NPDES
BCL Work Order:	1408737
Invoice ID:	B172591

Enclosed are the results of analyses for samples received by the laboratory on 4/17/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101

Table of Contents

BC LABORATORIES

4100 Atlas Court Bakersfield, Ca. 93308
(661) 327-4911 • FAX (661) 327-1918 • www.bclabs.com

Chain of Custody

* Required Fields   14-08737   TEMP: ______

Client/Company Name *: Fugro Consultants	Report Attention *: Tim Nicely	Phone * #: 805-289-3836 FAX * #: 805-650-7010 E-mail: tnicely@fugro.com

Address *: 4820 McGrath Street, Suite 100 City *: Ventura State *: CA Zip *: 93003

Project Information: Malibu-NPDES PO #: BCL Quote #:

How would you like your completed results sent? ☑ E-Mail ☐ Fax ☐ EDD ☐ Mail Only

Sampler Name Printed / Signature:

QC Request: ☑ STD ☐ Level II

Result Request ** Surcharge: ☑ STD ☐ 5 Day** ☐ 2 Day** ☐ 1 Day**

Carbon Copies: CDHS ☐ Fresno Co ☐ EPA ☐ Merced Co ☐ Tulare Co ☐ Other:

Regulatory Compliance
Electronic Data Transfer: Y ☐ N ☐
System No. *

Matrix Types: RSW = Raw Surface Water CFW = Clorinated Finished Water CWW = Chorinated Waste Water BW = Bottled Water RGW = Raw Ground Water FW = Finished Water WW = Waste Water SW = Storm Water DW = Drinking Water SO = Solid

ANALYSIS REQUESTED: T.S.S.(EPA 160.2); Settleable Solids(EPA 160.5); BOD 5 (seeded) (SM5210B); Oil & Grease (EPA 1664); MBAS (EPA 425.1); Total Sulfides (SM4500-S D); Phenols (EPA 420.4); Residual Chlorine(SM4500-CL F); Turbidity (EPA 180.1)

Sample #	# Bottles	Sampled Date	Sampled Time	Sample Description / Location *	Matrix *	Comments / Station Code P.H.	TEMP C°
1	5	4/17/14	8:30	W-18	RGW	7.03	22.5
2			9:00	B4A-10		6.98	22.7
3			9:30	W-16		7.25	22.6
4			10:36	W-17		6.87	23.0
5			11:18	FW-2		7.01	22.7
6			11:52	FW-1		6.99	23.1
7			12:30	HD-42		6.93	22.1
8			12:45	HD-4		6.88	22.2
9			1:20	HD-26		7.01	22.2
10			1:43	HD-23		7.03	22.5

	Company	Date	Time		Company
Relinquished by: (Signature and Printed Name) Joe Reeves	Fugro	4/17/14	2:50pm	Received by (Signature and Print Name)	BC Labs
Relinquished by: (Signature and Printed Name)	B.C. Labs	4/17/14	1550	Received by (Signature and Print Name)	BC
Received for Lab by: (Signature and Printed Name)		4-17-14	1600	Payment Received at Delivery: Date: Amount: Check/Cash/Card PIA # Init.	

Shipping Method: CAO UPS GSO WALK-IN SJVC FED EX OTHER
Cooling Method: WET BLUE NONE
Packing Material:

SR-FL-0012-00 (Analytical)

BC LABORATORIES INC. **COOLER RECEIPT FORM** Rev. No. 15 07/01/13 Page 1 Of 4

Submission #: 14-08737

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Federal Express ☐ UPS ☐ Hand Delivery BC Lab Field Service ☒ Other ☐ (Specify)____	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)____	YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received		
☒ YES ☐ NO	Emissivity: 0.95 Container: PE Thermometer ID: 207 Temperature: (A) 1.6 °C / (C) 1.6 °C	Date/Time 4/17/14 1843 Analyst Init BP

SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL	AB				AB					
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE	C				C					
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS	D				D					
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA ~~508/608/8080~~ 1664	E				E					
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl BOD MBAS COT

CHK BY DISTRIBUTION
MW MASM
SUB-OUT ☐

Comments: N/A

Chain of Custody and Cooler Receipt Form for 1408737 Page 3 of 5

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 15 07/01/13 Page 2 Of 4

Submission #: 14-08737

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery
BC Lab Field Service ☒ Other ☐ (Specify)

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.95 Container: PE Thermometer ID: 207 Date/Time 4/17/14 1843
Temperature: (A) 1.4 °C / (C) 1.4 °C Analyst Init BP

SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL		AB					AB	AB		
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE		C					C	C		
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS		D					D	D		
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA ~~508/608/8080~~ 1664		E					E	E		
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:
Sample Numbering Completed By: AW Date/Time: 4/18/14 @ 1020
A = Actual / C = Corrected
[S:\MyDOCS\WordPerfect\LAB_DOCS\FORMS\SAMREC15]

BC LABORATORIES INC. **COOLER RECEIPT FORM** Rev. No. 15 07/01/13 Page 3 Of 4

Submission #: 14-08737

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Federal Express ☐ UPS ☐ Hand Delivery BC Lab Field Service ☒ Other ☐ (Specify)______	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)______	YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received		
☒ YES ☐ NO	Emissivity: 0.95 Container: PE Thermometer ID: 207 Temperature: (A) 2.1 °C / (C) 2.1 °C	Date/Time 4/17/14 1843 Analyst Init BP

SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL			AB						AB	AB
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE			C						C	C
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS			D						D	D
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA ~~508/608/8080~~ 1664			E						E	E
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:______
Sample Numbering Completed By: [illegible] Date/Time: 4/18/14 @ 1020

BC Laboratories, Inc.

Environmental Testing Laboratory Since 1949

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 15 07/01/13 Page 4 Of 4

Submission #: 14-08737

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery
BC Lab Field Service ☒ Other ☐ (Specify)

SHIPPING CONTAINER
Ice Chest ☒ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☐ NO ☐

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.95 Container: PE Thermometer ID: 207 Date/Time 4/17/14 1843

Temperature: (A) 1.7 °C / (C) 1.7 °C Analyst Init BP

SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL				AB		AB				
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE				C		C				
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS				D		D				
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA ~~508/608/8080~~ 1664				E		E				
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
Summa Canister										

Comments:
Sample Numbering Completed By: MVA Date/Time: 4/18/14 @ 1020

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1408737-01	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 08:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-18	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-02	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 09:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	BYA-10	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-03	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 09:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-16	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-04	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 10:36
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-17	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-05	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 11:18
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	FW-2	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-06	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 11:52
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	FW-1	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater
1408737-07	**COC Number:**	---	**Receive Date:**	04/17/2014 18:43
	Project Number:	---	**Sampling Date:**	04/17/2014 12:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HD-42	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater

Fugro Consultants		Reported:	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1408737-08	COC Number:	---	Receive Date:	04/17/2014 18:43
	Project Number:	---	Sampling Date:	04/17/2014 12:45
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	HD-4	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
1408737-09	COC Number:	---	Receive Date:	04/17/2014 18:43
	Project Number:	---	Sampling Date:	04/17/2014 13:20
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	HD-26	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater
1408737-10	COC Number:	---	Receive Date:	04/17/2014 18:43
	Project Number:	---	Sampling Date:	04/17/2014 13:43
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	HD-23	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Groundwater

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-01 **Client Sample Name:** W-18, 4/17/2014 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1.064	BXD2231

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-01 **Client Sample Name:** W-18, 4/17/2014 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	**3.2**	**mg/L**	**1.2**	**1.2**	**EPA-160.2**	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**4.6**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	2.500	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:01	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2198

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-02 **Client Sample Name:** BYA-10, 4/17/2014 9:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1.075	BXD2231

Fugro Consultants	**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100	Project:	Malibu -NPDES
Ventura, CA 93003-7778	Project Number:	[none]
	Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-02 **Client Sample Name:** BYA-10, 4/17/2014 9:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	**1.2**	**mg/L**	**0.50**	**0.50**	**EPA-160.2**	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**0.28**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	**2.0**	**mg/L**	**1.5**	**1.5**	**SM17-5210B**			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.099	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:01	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2198

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-03 **Client Sample Name:** W-16, 4/17/2014 9:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.8	1.4	EPA-1664A HEM	ND	A11	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1.163	BXD2231

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778		**Reported:**	05/07/2014 12:12
		Project:	Malibu -NPDES
		Project Number:	[none]
		Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-03 **Client Sample Name:** W-16, 4/17/2014 9:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.56	0.56	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	ND	NT Units	0.10	0.10	EPA-180.1			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.111	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:01	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-04 **Client Sample Name:** W-17, 4/17/2014 10:36:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1.075	BXD2231

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-04 **Client Sample Name:** W-17, 4/17/2014 10:36:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.50	0.50	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**0.34**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.099	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:01	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-05 **Client Sample Name:** FW-2, 4/17/2014 11:18:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1	BXD2231

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-05 | **Client Sample Name:** FW-2, 4/17/2014 11:18:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.57	0.57	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**0.35**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.149	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:01	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-06 **Client Sample Name:** FW-1, 4/17/2014 11:52:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1	BXD2231

Fugro Consultants	**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100	Project:	Malibu -NPDES
Ventura, CA 93003-7778	Project Number:	[none]
	Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-06 **Client Sample Name:** FW-1, 4/17/2014 11:52:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	**0.88**	**mg/L**	**0.50**	**0.50**	**EPA-160.2**	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**16**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	**0.035**	**mg/L**	**0.10**	**0.015**	**EPA-425.1**	ND	**J**	4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	**35**	**mg/L**	**5.0**	**2.5**	**SM-4500SD**	ND	**A01**	7
Biochemical Oxygen Demand - Seeded	**24**	**mg/L**	**4.1**	**4.1**	**SM17-5210B**			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.099	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:07	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	50	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	4.067	BXD2199

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-07 | **Client Sample Name:** HD-42, 4/17/2014 12:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1.075	BXD2231

Fugro Consultants
4820 McGrath Street Ste.100
Ventura, CA 93003-7778

Reported: 05/07/2014 12:12
Project: Malibu -NPDES
Project Number: [none]
Project Manager: Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-07 **Client Sample Name:** HD-42, 4/17/2014 12:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	**2.4**	**mg/L**	**0.57**	**0.57**	**EPA-160.2**	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**2.9**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.136	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1612
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0211
6	EPA-420.4	04/21/14	04/21/14 14:07	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-08 **Client Sample Name:** HD-4, 4/17/2014 12:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1	BXD2231

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-08 **Client Sample Name:** HD-4, 4/17/2014 12:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.56	0.56	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	**0.31**	**NT Units**	**0.10**	**0.10**	**EPA-180.1**			3
MBAS	ND	mg/L	0.20	0.030	EPA-425.1	ND	A01	4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	**1.8**	**mg/L**	**1.5**	**1.5**	**SM17-5210B**			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.111	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2274
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	2	BXD1616
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0214
6	EPA-420.4	04/21/14	04/21/14 14:07	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-09 **Client Sample Name:** HD-26, 4/17/2014 1:20:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1	BXD2231

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Environmental Testing Laboratory Since 1949

Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-09 **Client Sample Name:** HD-26, 4/17/2014 1:20:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.56	0.56	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	ND	NT Units	0.10	0.10	EPA-180.1			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	ND		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.124	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2275
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1616
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0214
6	EPA-420.4	04/21/14	04/21/14 14:07	TDC	KONE-1	1	BXD1678
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants	**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100	Project:	Malibu -NPDES
Ventura, CA 93003-7778	Project Number:	[none]
	Project Manager:	Tim Nicely

EPA Method 1664

BCL Sample ID: 1408737-10 | **Client Sample Name:** HD-23, 4/17/2014 1:43:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	ND	mg/L	5.0	1.2	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	04/25/14	04/25/14 09:00	JAK	MAN-SV	1	BXD2231

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

BCL Sample ID: 1408737-10 **Client Sample Name:** HD-23, 4/17/2014 1:43:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Suspended Solids (Glass Fiber)	ND	mg/L	0.56	0.56	EPA-160.2	ND		1
Settleable Solids	ND	ml/L	0.10	0.10	EPA-160.5			2
Turbidity	ND	NT Units	0.10	0.10	EPA-180.1			3
MBAS	ND	mg/L	0.10	0.015	EPA-425.1	ND		4
Residual Chlorine	ND	mg/L	0.10	0.10	SM-4500-CLF	ND	S05	5
Total Phenolics	ND	ug/L	50	6.3	EPA-420.4	6.5		6
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND		7
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-160.2	04/22/14	04/22/14 08:15	CAD	MANUAL	1.111	BXD1771
2	EPA-160.5	04/18/14	04/18/14 10:30	FBV	MANUAL	1	BXD2275
3	EPA-180.1	04/18/14	04/18/14 13:30	MC1	MANUAL	1	BXD1714
4	EPA-425.1	04/18/14	04/18/14 10:45	JMN	MANUAL	1	BXD1616
5	SM-4500-CLF	04/18/14	04/18/14 10:30	MSA	MANUAL	1	BXE0214
6	EPA-420.4	04/23/14	04/23/14 14:14	TDC	KONE-1	1	BXD1924
7	SM-4500SD	04/22/14	04/22/14 13:30	DIW	SPEC05	1	BXD1853
8	SM17-5210B	04/18/14	04/18/14 08:00	FBV	YSI-57	1.525	BXD2199

Fugro Consultants
4820 McGrath Street Ste.100
Ventura, CA 93003-7778

Reported: 05/07/2014 12:12
Project: Malibu -NPDES
Project Number: [none]
Project Manager: Tim Nicely

EPA Method 1664

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD2231						
Oil and Grease	BXD2231-BLK1	ND	mg/L	5.0	1.2	

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

EPA Method 1664

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXD2231										
Oil and Grease	BXD2231-BS1	LCS	32.500	37.900	mg/L	85.8		78 - 114		

Fugro Consultants
4820 McGrath Street Ste.100
Ventura, CA 93003-7778

Reported: 05/07/2014 12:12
Project: Malibu -NPDES
Project Number: [none]
Project Manager: Tim Nicely

EPA Method 1664

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXD2231 Used client sample: N											
Oil and Grease	DUP	1407468-27	ND	ND		mg/L			18		
	MS	1407468-27	ND	32.850	37.900	mg/L		86.7		78 - 114	
	MSD	1407468-27	ND	32.100	37.900	mg/L	2.3	84.7	18	78 - 114	

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Fugro Consultants 4820 McGrath Street Ste.100 Ventura, CA 93003-7778	**Reported:** 05/07/2014 12:12 Project: Malibu -NPDES Project Number: [none] Project Manager: Tim Nicely

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD1612						
MBAS	BXD1612-BLK1	ND	mg/L	0.10	0.015	
QC Batch ID: BXD1616						
MBAS	BXD1616-BLK1	ND	mg/L	0.10	0.015	
QC Batch ID: BXD1678						
Total Phenolics	BXD1678-BLK1	ND	ug/L	50	6.3	
QC Batch ID: BXD1771						
Total Suspended Solids (Glass Fiber)	BXD1771-BLK1	ND	mg/L	0.50	0.50	
QC Batch ID: BXD1853						
Total Sulfide	BXD1853-BLK1	ND	mg/L	0.10	0.050	
QC Batch ID: BXD1924						
Total Phenolics	**BXD1924-BLK1**	**6.5000**	**ug/L**	**50**	**6.3**	**J**
QC Batch ID: BXD2198						
Biochemical Oxygen Demand - Seeded	BXD2198-BLK1	ND	mg/L	1.0	1.0	
QC Batch ID: BXD2199						
Biochemical Oxygen Demand - Seeded	BXD2199-BLK1	ND	mg/L	1.0	1.0	
QC Batch ID: BXE0211						
Residual Chlorine	BXE0211-BLK1	ND	mg/L	0.10	0.10	
QC Batch ID: BXE0214						
Residual Chlorine	BXE0214-BLK1	ND	mg/L	0.10	0.10	

Fugro Consultants	**Reported:** 05/07/2014 12:12
4820 McGrath Street Ste.100	Project: Malibu -NPDES
Ventura, CA 93003-7778	Project Number: [none]
	Project Manager: Tim Nicely

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BXD1612										
MBAS	BXD1612-BS1	LCS	0.19540	0.20000	mg/L	97.7		85 - 115		
QC Batch ID: BXD1616										
MBAS	BXD1616-BS1	LCS	0.19540	0.20000	mg/L	97.7		85 - 115		
QC Batch ID: BXD1678										
Total Phenolics	BXD1678-BS1	LCS	526.32	500.00	ug/L	105		85 - 115		
QC Batch ID: BXD1853										
Total Sulfide	BXD1853-BS1	LCS	0.52259	0.50000	mg/L	105		90 - 110		
QC Batch ID: BXD1924										
Total Phenolics	BXD1924-BS1	LCS	528.79	500.00	ug/L	106		85 - 115		
QC Batch ID: BXD2198										
Biochemical Oxygen Demand - Seeded	BXD2198-BS1	LCS	171.18	198.00	mg/L	86.5		85 - 115		
QC Batch ID: BXD2199										
Biochemical Oxygen Demand - Seeded	BXD2199-BS1	LCS	171.18	198.00	mg/L	86.5		85 - 115		

Fugro Consultants	Reported:	05/07/2014 12:12
4820 McGrath Street Ste.100	Project:	Malibu -NPDES
Ventura, CA 93003-7778	Project Number:	[none]
	Project Manager:	Tim Nicely

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXD1612	Used client sample: N										
MBAS	DUP	1408572-01	ND	ND		mg/L			20		
	MS	1408572-01	ND	0.40800	0.40000	mg/L		102		80 - 120	
	MSD	1408572-01	ND	0.40360	0.40000	mg/L	1.1	101	20	80 - 120	
QC Batch ID: BXD1616	Used client sample: Y - Description: HD-4, 04/17/2014 12:45										
MBAS	DUP	1408737-08	ND	ND		mg/L			20		
	MS	1408737-08	ND	0.39500	0.40000	mg/L		98.8		80 - 120	
	MSD	1408737-08	ND	0.39940	0.40000	mg/L	1.1	99.8	20	80 - 120	
QC Batch ID: BXD1678	Used client sample: Y - Description: W-18, 04/17/2014 08:30										
Total Phenolics	DUP	1408737-01	ND	ND		ug/L			20		
	MS	1408737-01	ND	522.03	500.00	ug/L		104		80 - 120	
	MSD	1408737-01	ND	521.72	500.00	ug/L	0.1	104	20	80 - 120	
QC Batch ID: BXD1714	Used client sample: Y - Description: W-18, 04/17/2014 08:30										
Turbidity	DUP	1408737-01	4.6500	4.6500		NT Units	0		10		
QC Batch ID: BXD1771	Used client sample: Y - Description: W-18, 04/17/2014 08:30										
Total Suspended Solids (Glass Fiber)	DUP	**1408737-01**	**3.2500**	**3.7500**		**mg/L**	**14.3**		**10**		**A02**
QC Batch ID: BXD1853	Used client sample: Y - Description: W-18, 04/17/2014 08:30										
Total Sulfide	DUP	1408737-01	ND	ND		mg/L			10		
	MS	1408737-01	ND	0.52629	0.50000	mg/L		105		80 - 120	
	MSD	1408737-01	ND	0.52814	0.50000	mg/L	0.4	106	10	80 - 120	
QC Batch ID: BXD1924	Used client sample: Y - Description: HD-23, 04/17/2014 13:43										
Total Phenolics	DUP	1408737-10	ND	ND		ug/L			20		
	MS	1408737-10	ND	526.19	500.00	ug/L		105		80 - 120	
	MSD	1408737-10	ND	540.93	500.00	ug/L	2.8	108	20	80 - 120	
QC Batch ID: BXD2198	Used client sample: Y - Description: BYA-10, 04/17/2014 09:00										
Biochemical Oxygen Demand - Seeded	DUP	1408737-02	1.9978	2.1960		mg/L	9.5		20		
QC Batch ID: BXD2199	Used client sample: Y - Description: W-16, 04/17/2014 09:30										
Biochemical Oxygen Demand - Seeded	DUP	1408737-03	ND	ND		mg/L			20		
QC Batch ID: BXD2274	Used client sample: N										
Settleable Solids	DUP	1408663-02	0.10000	0.10000		ml/L	0		10		
QC Batch ID: BXD2275	Used client sample: Y - Description: HD-26, 04/17/2014 13:20										
Settleable Solids	DUP	1408737-09	ND	ND		ml/L			10		
QC Batch ID: BXE0211	Used client sample: N										
Residual Chlorine	DUP	1408721-01	ND	ND		mg/L			10		
QC Batch ID: BXE0214	Used client sample: Y - Description: HD-4, 04/17/2014 12:45										

Fugro Consultants
4820 McGrath Street Ste.100
Ventura, CA 93003-7778

Reported: 05/07/2014 12:12
Project: Malibu -NPDES
Project Number: [none]
Project Manager: Tim Nicely

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BXE0214	Used client sample: Y - Description: HD-4, 04/17/2014 12:45										
Residual Chlorine	DUP	1408737-08	ND	ND		mg/L			10		

Fugro Consultants		**Reported:**	05/07/2014 12:12
4820 McGrath Street Ste.100		Project:	Malibu -NPDES
Ventura, CA 93003-7778		Project Number:	[none]
		Project Manager:	Tim Nicely

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A02	The difference between duplicate readings is less than the PQL.
A11	PQL's and/or MDL's were raised due to inadequate sample size received.
S05	The sample holding time was exceeded.

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: MAY 21, 2014
Laboratory Number: 141275
Project Name: Malibu-NPDES
Sampled by: Client

On MAY 15, 2014, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-16	141275-01
W-18	141275-02
BYA-10	141275-03
FW-2	141275-04
W-17	141275-05
FW-1	141275-06
HD-42	141275-07
HD-4	141275-08
HD-26	141275-09
HD-23	141275-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang, Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.

This report consists of 11 pages excluding the cover letter and the Chain of Custody.

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 141275-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	05/15/14
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	05/20/14
T.S.S.	ND	mg/L	1	5	1.0	2540 D	05/16/14
Settleable Solid	ND	ml/L	1	0.1		SM 2540F	05/15/14
Oil & Grease	ND	mg/L	1	5	1.0	1664	05/12/14
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	05/19/14
MBAS	ND	mg/L	1	0.1	0.02	5540 C	05/16/14
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	05/15/14
Turbidity	BQL	NTU	1	0.1	- --	180.1	05/15/14

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/15/14
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	2	0.4
141275-02	W-18	ND	1	2	0.4
141275-03	BYA-10	ND	1	2	0.4
141275-04	FW-2	ND	1	2	0.4
141275-05	W-17	ND	1	2	0.4
141275-06	FW-1	20	6	2	0.4
141275-07	HD-42	ND	1	2	0.4
141275-08	HD-4	ND	1	2	0.4
141275-09	HD-26	ND	1	2	0.4
141275-10	HD-23	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants	Date Sampled: 05/15/14
CAS LAB NO: 141275	Date Received: 05/15/14
Analyst: AN	Date Analyzed: 05/20/14
	Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM $4500S^{2-}D$

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	0.02	0.004
141275-02	W-18	ND	1	0.02	0.0
141275-03	BYA-10	ND	1	0.02	0.004
141275-04	FW-2	ND	1	0.02	0.004
141275-05	W-17	ND	1	0.02	0.004
141275-06	FW-1	6.9	10	0.02	0.004
141275-07	HD-42	ND	1	0.02	0.004
141275-08	HD-4	ND	1	0.02	0.004
141275-09	HD-26	ND	1	0.02	0.004
141275-10	HD-23	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.
Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: GM

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/19/14
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	5	1.0
141275-02	W-18	ND	1	5	1.0
141275-03	BYA-10	ND	1	5	1.0
141275-04	FW-2	ND	1	5	1.0
141275-05	W-17	ND	1	5	1.0
141275-06	FW-1	ND	1	5	1.0
141275-07	HD-42	ND	1	5	1.0
141275-08	HD-4	ND	1	5	1.0
141275-09	HD-26	ND	1	5	1.0
141275-10	HD-23	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/19/14
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	0.1	0.02
141275-02	W-18	ND	1	0.1	0.02
141275-03	BYA-10	ND	1	0.1	0.02
141275-04	FW-2	ND	1	0.1	0.02
141275-05	W-17	ND	1	0.1	0.02
141275-06	FW-1	ND	1	0.1	0.02
141275-07	HD-42	ND	1	0.1	0.02
141275-08	HD-4	ND	1	0.1	0.02
141275-09	HD-26	ND	1	0.1	0.02
141275-10	HD-23	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/16/14
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
141275-01	W-16	0.16	1	0.1
141275-02	W-18	6.6	1	0.1
141275-03	BYA-10	0.51	1	0.1
141275-04	FW-2	0.32	1	0.1
141275-05	W-17	0.3	1	0.1
141275-06	FW-1	3.6	1	0.1
141275-07	HD-42	0.18	1	0.1
141275-08	HD-4	5.6	1	0.1
141275-09	HD-26	0.58	1	0.1
141275-10	HD-23	0.28	1	0.1

DF: Dilution Factor

CAPCO Analytical Services, Inc.
Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/16/14
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	0.1	0.02
141275-02	W-18	ND	1	0.1	0.02
141275-03	BYA-10	ND	1	0.1	0.02
141275-04	FW-2	ND	1	0.1	0.02
141275-05	W-17	ND	1	0.1	0.02
141275-06	FW-1	ND	1	0.1	0.02
141275-07	HD-42	ND	1	0.1	0.02
141275-08	HD-4	ND	1	0.1	0.02
141275-09	HD-26	ND	1	0.1	0.02
141275-10	HD-23	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

1536 Eastman Ave. Suite B, Ventura, California 93003 Ph: (805)644-1095 FAX: (805)644-9947
www.capcoenv.com

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants	Date Sampled: 05/15/14
CAS LAB NO: 141275	Date Received: 05/15/14
Analyst: AN	Date Analyzed: 05/16/14
	Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141275-01	W-16	ND	1	5	1.0
141275-02	W-18	3.3	1	5	1.0
141275-03	BYA-10	ND	1	5	1.0
141275-04	FW-2	ND	1	5	1.0
141275-05	W-17	ND	1	5	1.0
141275-06	FW-1	1.1	1	5	1.0
141275-07	HD-42	ND	1	5	1.0
141275-08	HD-4	3.1	1	5	1.0
141275-09	HD-26	ND	1	5	1.0
141275-10	HD-23	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/15/14
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
141275-01	W-16	BQL	1	0.1
141275-02	W-18	BQL	1	0.1
141275-03	BYA-10	BQL	1	0.1
141275-04	FW-2	BQL	1	0.1
141275-05	W-17	BQL	1	0.1
141275-06	FW-1	BQL	1	0.1
141275-07	HD-42	BQL	1	0.1
141275-08	HD-4	BQL	1	0.1
141275-09	HD-26	BQL	1	0.1
141275-10	HD-23	BQL	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141275
Analyst: AN

Date Sampled: 05/15/14
Date Received: 05/15/14
Date Analyzed: 05/15/14
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
141275-01	W-16	BQL	1	0.05
141275-02	W-18	BQL	1	0.05
141275-03	BYA-10	BQL	1	0.05
141275-04	FW-2	BQL	1	0.05
141275-05	W-17	BQL	1	0.05
141275-06	FW-1	BQL	1	0.05
141275-07	HD-42	BQL	1	0.05
141275-08	HD-4	BQL	1	0.05
141275-09	HD-26	BQL	1	0.05
141275-10	HD-23	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 141275-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	05/15/14
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	05/20/14
T.S.S.	ND	mg/L	1	5	1.0	2540 D	05/16/14
Settleable Solid	ND	ml/L	1	0.1		SM 2540F	05/15/14
Oil & Grease	ND	mg/L	1	5	1.0	1664	05/12/14
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	05/19/14
MBAS	ND	mg/L	1	0.1	0.02	5540 C	05/16/14
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	05/15/14
Turbidity	BQL	NTU	1	0.1	- --	180.1	05/15/14

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

BILL TO:
Company same
Address
Phone Contact

P.O.# 141275

PROJ. NO
PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	TSS ,Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	pH	REMARKS 5/22
1	5/15/14	6:45			W-16	X				5	P+G									6.84	25.1
2		7:15			W-18	X														7.17	25.6
3		7:50			BYA-10	X														7.10	24.1
4		8:30			FW-2	X														7.15	23.9
5		9:15			W-17	X														7.25	24.4
6		9:36			FW-1	X														7.83	23.2
7		10:15			HD-42	X														6.87	24.8
8		10:45			HD-4	X														7.04	25.0
9		11:30			HD-26	X														7.01	24.7
10		~~12:45~~ 11:44			HD-23	X														7.02	24.7

CHECK ONE BOX:
DISPOSE SAMPLES
RETURN SAMPLES

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/15/14 12:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time		

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

WHITE COPY______ CANARY COPY______ PINK COPY______

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tm Nicely

Report Date: May 30, 2014
Laboratory Number: 141345
Project Name: Malibu-NPDES
Sampled by: Client

On May 23, 2014, Capco Analytical Services, Inc.(CAS), received one(1) sample to be analyzed. The sample was identified and assigned the laboratory ID number listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
FW-1	141345-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience. This report consists of 2 pages excluding the cover letter and the Chain of Custody.

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants, Inc.	Date Sampled: 05/23/14
CAS LAB NO: 141345	Date Received: 05/23/14
Analyst: AN	Sample Matrix: Water

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULTS	UNITS	DF	PQL	METHOD	ANALYZED
CAS Lab#: 141345-01						
Sample ID: FW-1						
B.O.D.	16	mg/L	6	12	5210 B	05/23/14
Sulfide	14.6	mg/L	20	0.4	$4500S^{-2}D$	05/28/14

1536 Eastman Ave. Suite B, Ventura, California 93003 Ph: (805)644-1095 FAX: (805)644-9947
www.capcoenv.com

QUALITY CONTROL SECTION

Sample ID: Method Blank
Analyst: AN
CAS LAB NO: 141345-MB

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	ANALYZED
B.O.D.	BQL	mg/L	1	2	5210 B	05/23/14
Sulfide	BQL	mg/L	1	0.02	$4500S^{-2}D$	05/28/14

DF: Dilution Factor
B.O.D.: Biochemical Oxygen Demand

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue, Suite B
Ventura, CA 93003
(805) 644-1095 Fax 644-9947
www.capcoenv.com

CHAIN OF CUSTODY RECORD

REPORT
Fax
Company FUGRO
Address 4820 MCGRATH ST. SUIT. 100
VENTURA Email
Phone 650-7000 Contact TIM NICELY

BILL TO:
Company
Address
Phone Contact

P.O.#

PROJ. NO
PROJECT NAME MALIBU- NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

14 1345
5/30

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE IDENTIFICATION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	BOD	SULFIDE						REMARKS
1	5/23/14	10:46			FU-1							/	/						7.79 23.1
~~2~~	~~5/23/14~~	~~10:46~~			~~FU~~														

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5/23/14 12:00	[signature]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

TURN AROUND TIME
- STANDARD ☒ OTHER
- 24 HOURS ☐
- 48 HOURS ☐
- 72 HOURS ☐

CHECK ONE BOX:
- DISPOSE SAMPLES ☐
- RETURN SAMPLES ☐

WHITE COPY CANARY COPY PINK COPY

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tm Nicely

Report Date: June 5, 2014
Laboratory Number: 141405
Project Name: Malibu-NPDES
Sampled by: Client

On May 30, 2014, Capco Analytical Services, Inc.(CAS), received one(1) sample to be analyzed. The sample was identified and assigned the laboratory ID number listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
FW-1	141405-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience. This report consists of 2 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants, Inc.
CAS LAB NO: 141405
Analyst: AN

Date Sampled: 05/30/14
Date Received: 05/30/14
Sample Matrix: Water

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULTS	UNITS	DF	PQL	METHOD	ANALYZED
CAS Lab#: 141405-01 Sample ID: FW-1						
B.O.D.	33	mg/L	6	12	5210 B	05/30/14
Sulfide	31.6	mg/L	50	1	4500S^{-2}D	05/30/14

QUALITY CONTROL SECTION

Sample ID: Method Blank   Analyst: AN
CAS LAB NO: 141405-MB

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	ANALYZED
B.O.D.	BQL	mg/L	1	2	5210 B	05/30/14
Sulfide	BQL	mg/L	1	0.02	4500S^{-2}D	05/30/14

DF: Dilution Factor
B.O.D.: Biochemical Oxygen Demand

CAPCO ANALYTICAL SERVICES

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CHAIN OF CUSTODY RECORD

REPORT

Company FUGRO
Fax 650-7010
Address 4820 MCGRATH ST. SUITE 100
Email
Phone 650-7000
Contact Jim NICELY

BILL TO:

P.O.#

Company
Address
Phone
Contact

PROJ. NO

PROJECT NAME MALIBU NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

6/6
141405

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE IDENTIFICATION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	ANALYSIS: SULFIDE	ANALYSIS: BOD							REMARKS
1	5/30/14	11:30			FW-1							\	\							7.74 P.H. 25°C

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5/30/14 1:30	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

TURN AROUND TIME
- STANDARD ☒
- 24 HOURS ☐
- 48 HOURS ☐
- 72 HOURS ☐
- OTHER ____

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Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tm Nicely

Report Date: June 12, 2014
Laboratory Number: 141484
Project Name: Malibu-NPDES
Sampled by: Client

On June 6, 2014, Capco Analytical Services, Inc.(CAS), received one(1) sample to be analyzed. The sample was identified and assigned the laboratory ID number listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
FW-1	141484-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 2 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants, Inc.
CAS LAB NO: 141484
Analyst: AN

Date Sampled: 06/06/14
Date Received: 06/06/14
Sample Matrix: Water

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULTS	UNITS	DF	PQL	METHOD	ANALYZED
CAS Lab#: 141484-01 Sample ID: FW-1						
B.O.D.	39	mg/L	6	12	5210 B	06/06/14
Sulfide	32	mg/L	50	1	4500S^{-2}D	06/06/14

QUALITY CONTROL SECTION

Sample ID: Method Blank Analyst: AN
CAS LAB NO: 141484-MB

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	ANALYZED
B.O.D.	BQL	mg/L	1	2	5210 B	06/06/14
Sulfide	BQL	mg/L	1	0.02	4500S^{-2}D	06/06/14

DF: Dilution Factor
B.O.D.: Biochemical Oxygen Demand

CAPCO ANALYTICAL SERVICES

1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT

Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003 E-mail:tnicely@fugro.com
Phone 289-3836 Contact Tim Nicely

BILL TO:

Company same
Address
Phone Contact

P.O.#

PROJ. NO

PROJECT NAME MALIBU NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	CONTAINER #	CONTAINER TYPE	BOD	SULFIDES						REMARKS
																			141484 6/13 P.H.
1	6/6/14	9:02			FW-1	/					P	/	/						7.62 26.2

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[signature]	6/6/14 10:12	[signature]			

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	X
72 Hr.		Other	

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CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tm Nicely

Report Date: June 19, 2014
Laboratory Number: 141555
Project Name: Malibu-NPDES
Sampled by: Client

On June 12, 2014, Capco Analytical Services, Inc.(CAS), received one(1) sample to be analyzed. The sample was identified and assigned the laboratory ID number listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
FW-1	141555-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 2 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants, Inc.
CAS LAB NO: 141555
Analyst: AN

Date Sampled: 06/12/14
Date Received: 06/12/14
Sample Matrix: Water

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULTS	UNITS	DF	PQL	METHOD	ANALYZED
CAS Lab#: 141555-01 Sample ID: FW-1						
B.O.D.	22	mg/L	6	12	5210 B	06/12/14
Sulfide	23.4	mg/L	50	1	4500S^{-2}D	06/13/14

QUALITY CONTROL SECTION

Sample ID: Method Blank Analyst: AN
CAS LAB NO: 141555-MB

WET CHEMISTRY ANALYSIS SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	ANALYZED
B.O.D.	BQL	mg/L	1	2	5210 B	06/12/14
Sulfide	BQL	mg/L	1	0.02	$4500S^{-2}D$	06/13/14

DF: Dilution Factor
B.O.D.: Biochemical Oxygen Demand

CAPCO ANALYTICAL SERVICES
1536 Eastman Avenue
Ventura, CA 93003
(805) 644-1095 Fax 644-9947

CHAIN OF CUSTODY RECORD

REPORT
Fax 805-650-7010
Company Fugro Consultants
Address 4820 McGrath Street, Suite 100
Ventura,CA93003 E-mail:tnicely@fugro.com
Phone 289-3836 Contact Tim Nicely

BILL TO:
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PROJ. NO
PROJECT NAME MALIBU NPDES
SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

ANALYSIS

REMARKS 6/19
141555

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	SULFIDE	BOD						REMARKS: PH.	TEMP
1	6/12/14	9:45			Fw-1	/						/	/						7.74	24.5

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[signature]	6/12/14 11:26	[signature]			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time		

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

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Prepared for: Fugro Consultants
4820 McGrath Street, Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: June 26, 2014
Laboratory Number: 141607
Project Name: Malibu-NPDES
Sampled by: Client

On June 19, 2014, Capco Analytical Services, Inc.(CAS), received ten(10) samples to be analyzed. The samples were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
W-18	141607-01
BYA-10	141607-02
W-16	141607-03
FW-2	141607-04
W-17	141607-05
FW-1	141607-06
HD-42	141607-07
HD-4	141607-08
HD-26	141607-09
HD-23	141607-10

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Keith Chin-Yuan Chang Ph.D.
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 10 pages excluding the cover letter and the Chain of Custody.

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/20/14
Sample Matrix: Water

BIOCHEMICAL OXYGEN DEMAND
EPA Method 5210 B

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	1.2	1	2	0.4
141607-02	BYA-10	ND	1	2	0.4
141607-03	W-16	ND	1	2	0.4
141607-04	FW-2	ND	1	2	0.4
141607-05	W-17	ND	1	2	0.4
141607-06	FW-1	16.5	3	6	1.2
141607-07	HD-42	0.59	1	2	0.4
141607-08	HD-4	ND	1	2	0.4
141607-09	HD-26	ND	1	2	0.4
141607-10	HD-23	ND	1	2	0.4

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/24/14
Sample Matrix: Water

TOTAL PHENOL
EPA Method 420.1

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	ND	1	0.1	0.02
141607-02	BYA-10	ND	1	0.1	0.02
141607-03	W-16	ND	1	0.1	0.02
141607-04	FW-2	ND	1	0.1	0.02
141607-05	W-17	ND	1	0.1	0.02
141607-06	FW-1	ND	1	0.1	0.02
141607-07	HD-42	ND	1	0.1	0.02
141607-08	HD-4	ND	1	0.1	0.02
141607-09	HD-26	ND	1	0.1	0.02
141607-10	HD-23	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CAPCO Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: GM

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/23/14
Sample Matrix: Water

OIL & GREASE
EPA Method 1664

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	ND	1	5	1.0
141607-02	BYA-10	ND	1	5	1.0
141607-03	W-16	ND	1	5	1.0
141607-04	FW-2	ND	1	5	1.0
141607-05	W-17	ND	1	5	1.0
141607-06	FW-1	ND	1	5	1.0
141607-07	HD-42	ND	1	5	1.0
141607-08	HD-4	ND	1	5	1.0
141607-09	HD-26	ND	1	5	1.0
141607-10	HD-23	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/23/14
Sample Matrix: Water

TOTAL SULFIDE
EPA Method SM 4500S^{2-}D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	ND	1	0.02	0.004
141607-02	BYA-10	ND	1	0.02	0.0
141607-03	W-16	ND	1	0.02	0.004
141607-04	FW-2	ND	1	0.02	0.004
141607-05	W-17	ND	1	0.02	0.004
141607-06	FW-1	17.7	50	1	0.2
141607-07	HD-42	ND	1	0.02	0.004
141607-08	HD-4	ND	1	0.02	0.004
141607-09	HD-26	ND	1	0.02	0.004
141607-10	HD-23	ND	1	0.02	0.004

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/20/14
Sample Matrix: Water

MBAS
EPA Method SM 5540 C

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	ND	1	0.1	0.02
141607-02	BYA-10	ND	1	0.1	0.02
141607-03	W-16	ND	1	0.1	0.02
141607-04	FW-2	ND	1	0.1	0.02
141607-05	W-17	ND	1	0.1	0.02
141607-06	FW-1	ND	1	0.1	0.02
141607-07	HD-42	ND	1	0.1	0.02
141607-08	HD-4	ND	1	0.1	0.02
141607-09	HD-26	ND	1	0.1	0.02
141607-10	HD-23	ND	1	0.1	0.02

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/20/14
Sample Matrix: Water

TOTAL SUSPENDED SOLIDS
EPA Method SM 2540 D

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)	MDL (mg/L)
141607-01	W-18	3.3	1	5	1.0
141607-02	BYA-10	2.9	1	5	1.0
141607-03	W-16	ND	1	5	1.0
141607-04	FW-2	ND	1	5	1.0
141607-05	W-17	ND	1	5	1.0
141607-06	FW-1	1.5	1	5	1.0
141607-07	HD-42	3.1	1	5	1.0
141607-08	HD-4	ND	1	5	1.0
141607-09	HD-26	ND	1	5	1.0
141607-10	HD-23	ND	1	5	1.0

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

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Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/19/14
Sample Matrix: Water

SETTLEABLE SOLIDS
EPA Method SM 2540 F

CAS Lab #	Sample ID	RESULTS (ml/L)	DF	PQL (ml/L)
141607-01	W-18	BQL	1	0.1
141607-02	BYA-10	BQL	1	0.1
141607-03	W-16	BQL	1	0.1
141607-04	FW-2	BQL	1	0.1
141607-05	W-17	BQL	1	0.1
141607-06	FW-1	BQL	1	0.1
141607-07	HD-42	BQL	1	0.1
141607-08	HD-4	BQL	1	0.1
141607-09	HD-26	BQL	1	0.1
141607-10	HD-23	BQL	1	0.1

DF: Dilution Factor

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CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/20/14
Sample Matrix: Water

TURBIDITY
EPA Method 180.1

CAS Lab #	Sample ID	RESULTS (NTU)	DF	PQL (NTU)
141607-01	W-18	5.7	1	0.1
141607-02	BYA-10	4.3	1	0.1
141607-03	W-16	0.33	1	0.1
141607-04	FW-2	0.46	1	0.1
141607-05	W-17	0.26	1	0.1
141607-06	FW-1	8.9	1	0.1
141607-07	HD-42	5.7	1	0.1
141607-08	HD-4	0.23	1	0.1
141607-09	HD-26	0.15	1	0.1
141607-10	HD-23	0.39	1	0.1

DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
CAS LAB NO: 141607
Analyst: AN

Date Sampled: 06/19/14
Date Received: 06/19/14
Date Analyzed: 06/19/14
Sample Matrix: Water

TOTAL RESIDUAL CHLORINE
EPA Method SM 4500CLG

CAS Lab #	Sample ID	RESULTS (mg/L)	DF	PQL (mg/L)
141607-01	W-18	BQL	1	0.05
141607-02	BYA-10	BQL	1	0.05
141607-03	W-16	BQL	1	0.05
141607-04	FW-2	BQL	1	0.05
141607-05	W-17	BQL	1	0.05
141607-06	FW-1	BQL	1	0.05
141607-07	HD-42	BQL	1	0.05
141607-08	HD-4	BQL	1	0.05
141607-09	HD-26	BQL	1	0.05
141607-10	HD-23	BQL	1	0.05

mg/L: Milligrams/Liter(ppm)
DF: Dilution Factor

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: Method Blank
CAS LAB NO: 141607-MB

Analyst: GM/AN

QUALITY CONTROL SECTION

WET CHEMISTRY SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	MDL	METHOD	ANALYZED
B.O.D.	ND	mg/L	1	2	0.4	5210 B	06/20/14
Sulfide (Total)	ND	mg/L	1	0.02	0.004	4500S^{2-}D	06/23/14
T.S.S.	ND	mg/L	1	5	1.0	2540 D	06/20/14
Oil & Grease	ND	mg/L	1	5	1.0	1664	06/23/14
Phenol (Total)	ND	mg/L	1	0.1	0.02	420.1	06/24/14
MBAS	ND	mg/L	1	0.1	0.02	5540 C	06/20/14
Chlorine (Total)	BQL	mg/L	1	0.05	---	4500CLG	06/19/14

B.O.D.: Biochemical Oxygen Demand
T.S.S.: Total Suspended Solids
DF: Dilution Factor

CAPCO ANALYTICAL SERVICES

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Company Fugro Consultants
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Ventura,CA93003
Phone 650-7000 Contact Tim Nicely

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Company same
Address
6/26
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P.O.#

PROJ. NO

PROJECT NAME Malibu-NPDES

SAMPLERS: (Signature)

CONTAINER TYPES
A = AMBER B = BRASS G = GLASS
P = PLASTIC V = VOA VIAL O = OTHER

REMARKS 141607

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	COMP	GRAB	SAMPLE DESCRIPTION	MATRIX: WATER	SOIL	SLUDGE	OTHER	CONTAINER #	CONTAINER TYPE	ANALYSIS: TSS, Setteable Solids	BOD	Oil & Grease	MBAS	Sulfide	Phenols	Residual Chlorine	Turbidity	pH	REMARKS
1	6/19/14	8:30			W-18	x				5	P+G									7.15	23.6
2		8:55			BYA-10	x														7.12	23.4
3		9:15			W-16	x														6.85	23.5
4		9:28			FW-2	x														7.23	22.9
5		9:44			W-17	x														7.28	22.0
6		10:10			FW-1	x														7.83	25.2
7		10:30			~~BYA-HO~~ HD-42	x														7.14	22.7
8		10:55			HD-4	x														6.91	22.6
9		11:25			HD-26	x														6.87	22.3
10		11:50			HD-23	x														7.21	22.1

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	6/19/14 1:50				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time		

TURN AROUND TIME

24 Hr.		5 Day	
48 Hr.		Standard	
72 Hr.		Other	

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