Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services

632 East Thompson Blvd.
Ventura, CA 93001
(805) 481-9590
www.yeh-eng.com

May 12, 2025

Project No. 220-276

City of Malibu
23825 Stuart Ranch Rd.
Malibu, California 90265

Attn: Mr. Arthur Aladjadjian, Public Works Superintendent

Subject: Interim Report of Dewatering System Status and Summary of Collected Data following Palisades Fire, City of Malibu Assessment District 98-1 - Big Rock Mesa, Malibu, CA

Dear Mr. Aladjadjian:

Yeh and Associates provides monitoring and maintenance of the landslide assessment district facilities for the City of Malibu at Big Rock Mesa. The following is an interim summary of current rainfall totals and the results of water level monitoring and dewatering production rates since the January 7, 2025 Palisades Fire. The letter is intended to update the City on the apparent groundwater level response following an extended period without power to the dewatering wells and in response to rain events. Data collected through March 31, 2025 is presented in this letter.

1. Damage Summary from Palisades Fire

The Big Rock Mesa Neighborhood was heavily impacted by the Palisades Fire from January 7, 2025 with the majority of homes and significant public infrastructure within the Assessment District 98-1 boundary damaged or destroyed. Dewatering well pump controls and electronics, Southern California Edison (SCE) electrical meters, power hookups, and electrical wiring/conduit to most dewatering wells suffered damage. Damage to the SCE electrical grid caused widespread, ongoing power loss and as a result all dewatering wells were deenergized. Groundwater discharge from the gravity drained hydraugers continued to flow however, most of the above ground plumbing was damaged and they were not connected to the conveyance system through to the PCH storm drains. During the same period, the imported water usage and influence of irrigation and septic is negligible with no or limited residential occupation.

2. Dewatering Discharge

Total dewatering production for the most recent month and including dewatering wells and hydraugers is approximately 76,773 gallons per day (GPD) as shown in Table 1. Figure 1 presents a historical graph of total discharge from 1983 through March 31, 2025.

Table 1: Summary of System Dewatering Totals

Reading Interval	Total Average Dewatering Discharge (GPD)
7/1/24 to 6/30/25 (FY24-25 Monitoring Year)	84,267
2/27/25 to 3/25/2025	76,773

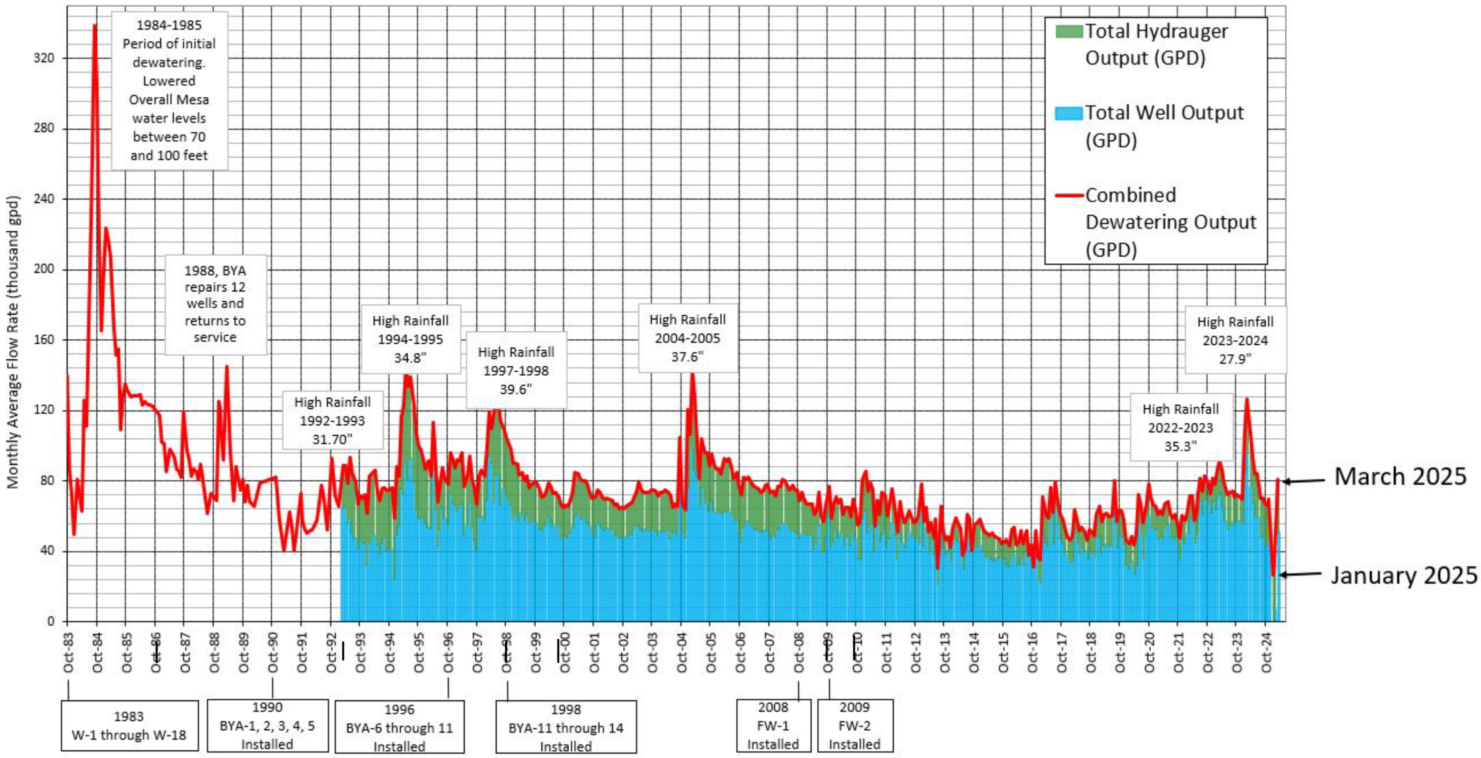


Figure 1: Historical Average Dewatering Output (Wells and Hydraugers)

2.1 Dewatering Wells

Emergency repair and restoration of dewatering well facilities are actively occurring. Emergency portable generators were initially deployed to intermittently power key dewatering wells W-1, W-2, W-3, W-8 and BYA-1. Dewatering wells FW-2 and BYA-7 began 24-7 operation when Edison hooked up generators to electrical vaults along Roca Chica Road in mid-February. On February 27 and 28, Yeh worked with SCE to power all wells with existing intact meter panels and electrical hookups by connecting to existing underground vaults energized by SCE's onsite emergency generators. The portable generators were relocated to power other wells that could not be connected to SCE vaults due to damage. Dewatering wells BYA-4, W-1, W-2, W-13 and W-16 have had meter panels installed and are in the permitting process for new meter installation. Table 2 lists the 15 out of 24 district dewatering wells that are currently operating with temporary power.

Table 2: Summary of Dewatering Wells with Temporary Power

Project Sub-Region	Total No. Wells	Total No. Wells with Temporary Power	Wells ID with Temporary Power
Headscarp	0	0	n/a
Eastern	9	7	W-1, W-2, W-3, BYA-6, BYA-13, BYA-14, FW-1
Central	12	7	W-8, BYA-1, BYA-3, BYA-7, BYA-9, BYA-10, FW-2
Bluff	0	0	n/a
PCH	0	0	n/a
Western Extension	3	1	BYA-15

Table 3 presents the average dewatering discharge for three separate time intervals following the Palisades Fire compared to the FY24/25 Average. The data indicates that the discharge from the 15 operating wells accounts for approximately 54-percent of total average well capacity including 90-perecent of the average capacity within the Eastern Region and 50-percent in the central Mesa Region.

Table 3: Average Dewatering Well Discharge in 2025

Reading Interval	Average Gallons per Day Dewatering Well Discharge (GPD)	Contributing Sources
7/1/24 to 6/30/25 (FY24/25 Monitoring Year)	63,525	24 wells
1/7/2025 to 2/3/2025	0	No power
2/3/2025 to 2/27/2025	4,484	portable generators on BYA-1, W-1, W-2, W-3, and W-8
2/27/25 to 3/25/2025	49,451	SCE vault power to BYA-1, BYA-7, BYA-13, BYA-15, FW-2, W-3, W-8 Portable generators on BYA-6, BYA-14, FW-1, W-1, W-2

2.1.1 WELL CONVEYANCE SYSTEM

The portions of the above ground storm drain system that conveyed discharge from the culverts atop of the PCH bluffs down to the ports along the north shoulder of PCH were incinerated in the fire. Water from dewatering wells (and any other source of runoff) that drained into the system outlet through the open end of the remaining RCP hanging over the bluff edge and cascaded down the slope onto PCH. The uncontrolled discharge caused erosion and ponding. Yeh constructed temporary bypass systems to contain dewatering discharge directly from the well discharge pipes into 2-inch diameter flexible hoses. Over 1,500 linear feet of temporary discharge was positioned to direct the flow overland and into the PCH ports. Currently seven wells on Inland land and Roca Chica Drive are discharging through the temporary bypass hoses.

2.2 Hydruagers

The hydrauger system suffered pervasive damage to the above ground PVC plumbing however, flow rates from the hydraugers appears unaffected. Hydraugers continued to drain onto the PCH shoulder and flowed laterally overland into the PCH ports. Temporary, overland drain hoses were attached to most hydraugers to direct flow into the ports. Subsequent additional damage to the repaired lines and hydraugers has occurred due to debris and rockfall following heavy rain in February and by heavy equipment during ongoing road clearance and other work. Temporary repairs are intermittently undertaken as issues are noted in the field.

Hydrauger production increases are consistent with typical hydrauger reaction to rainfall that occurred, with the February and March readings taken shortly after two significant rainfall events. The increase in hydrauger production may also be in response to decreased well pumping; however, more data needs to be collected and reviewed as the dewatering well operations expands to confirm the potential correlation.

Table 4: Average Discharge from Hydraugers Pre and Post Palisades Fire

Reading Interval	Average Gallons per Day Hydrauger Discharge (GPD)	Relative to Palisades Fire
7/1/24 to 6/30/25 (FY24-25 Monitoring Year)	20,743	Pre-fire
11/11/24 to 12/3/2024	23,857	Pre-fire
12/3/2024 to 1/22/2025	26,682	Post-fire
1/22/2025 to 2/14/2025	27,222	Post-fire
2/14/2025 to 3/31/2025	30,407	Post-fire

3. Groundwater Recharge Sources

3.1 Rainfall

Yeh obtained rainfall data from the Big Rock Mesa Rain Gauge #1239 operated by the Los Angeles County Department of Public Works (LADPW) for the period between January 1 and March 31, 2025. Over that period and following the Palisades Fire, a total of 7.56 inches has been recorded. Total accumulation for the 2024-2025 rainfall year beginning October 1, 2024 is 7.76-inches, which is 8.68-inches below the Big Rock Mesa 40-year annual average of 16.44-inches.

3.2 Imported Water Usage

Yeh measured average daily water usage as imported water volume from the LADWP master water meter #138193, located at the corner of Big Rock Drive and Rockport Way. Over the period from February 21 to March 4, 2025 approximately 14.2-thousand gallons per Day (TGPD) were imported. This volume is approximately 88-percent-less than the average daily water usage of 117.7 TGPD during the 2023-2024 monitoring year. Subsequent approximately weekly readings are summarized below indicate variability in imported volume with ongoing repopulation, however volumes remain well below historical and recent import volumes.

Table 5: Summary of Imported Water Usage

Measurement Interval	Average Import Rate (TGPD)
7/1/24 to 6/30/25 (FY24/25 Monitoring Year)	118.7
2/21/25 to 3/4/25	14.2
3/4/25 to 3/12/25	15.2
3/12/25 to 3/25 25	20.3
3/25/25 to 3/31/25	10.3

4. Groundwater Response

Groundwater levels in standpipes and some abandoned dewatering wells are typically measured approximately monthly. After January 14, 2025, monitoring was accelerated to weekly and select depowered dewatering wells were added to the monitoring schedule. Some standpipes were unable to be measured due to fire debris, rock/mudslide debris, private property access or construction activities.

Groundwater levels in the Big Rock Mesa Aquifer fluctuate in response to rainfall, imported septic and irrigation water, regional range front groundwater flux and dewatering production. At the time of the Palisades Fire, groundwater levels and dewatering production were in the process of declining following a historic sequence of consecutive high rainfall winters during 2022-23, 2023-24 and Tropical storm Hilary in August of 2023. Dewatering production from dewatering wells ceased for a period immediately after the fire while simultaneously imported water was reduced to approximately 10 to 15 percent of average. Water levels do not appear to have substantially risen following the fire, except in isolated standpipes. We anticipate water levels to continue lower in response to the lack of imported water volume combined with dewatering wells coming back into service, and due to the low rainfall totals from the 2024-25 winter. Water levels in general remain substantially lower than those observed prior to and during the 1983 activation.

4.1 Overall Assessment District

Figure 2 plots the change in water level measurements with respect to a December 2024 baseline that was the last measurement obtained prior to the fire. Historic groundwater hydrographs by sub-region are attached as Appendix A that include measured data through March 31, 2025.

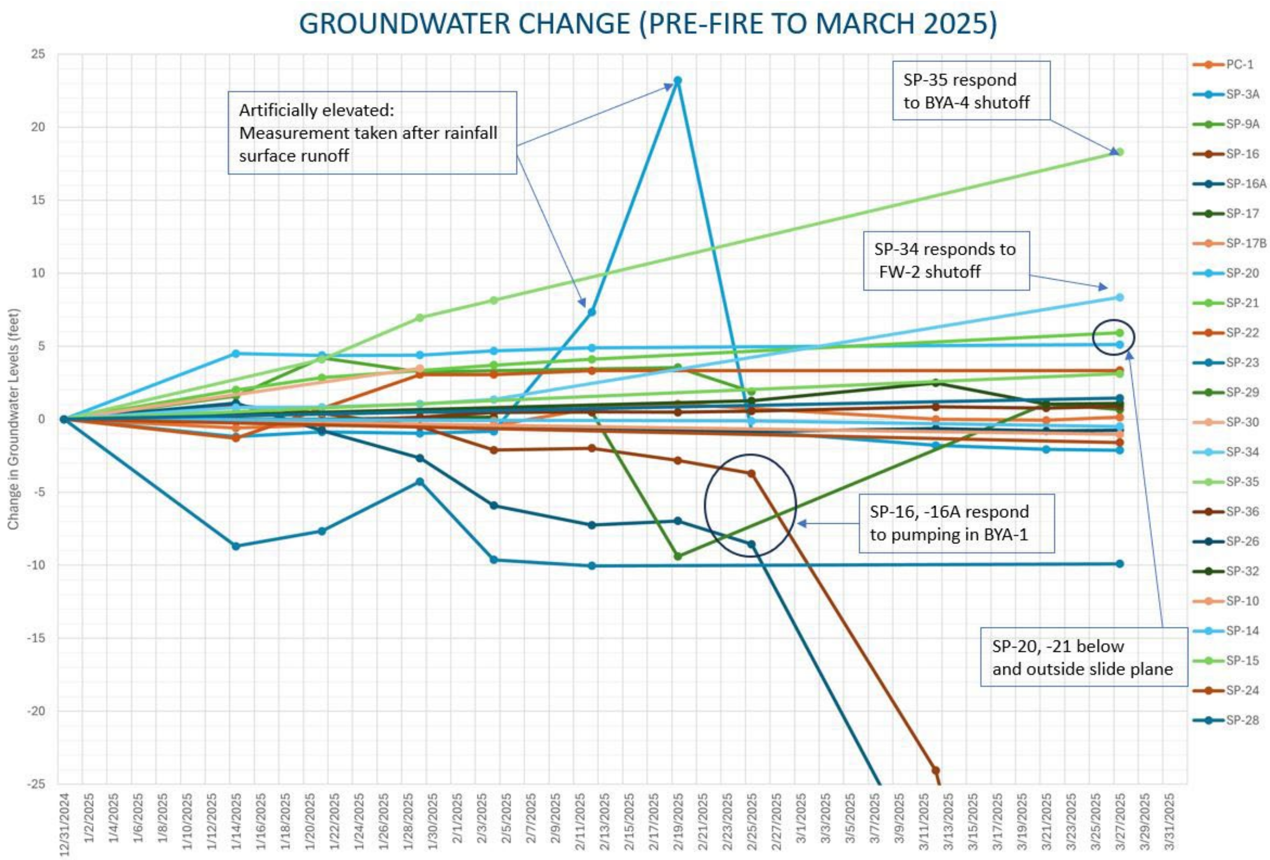


Figure 2: Groundwater Change (December 2024 through March 2025)

Groundwater level increases measured in SP-34, 35, and 9a and decreases within SP-16, 16a are within the cone of influence of nearby dewatering wells and their water level responds directly with pumping. Water levels changes in the remaining standpipes are too small to infer causation between decreased pumping versus normal seasonal fluctuations.

4.2 Groundwater Discussion By Sub Region

Discussion of water level measurements by sub region are provided below. Data-logging pressure transducers are installed in standpipes PC-1and SP-3A, SP-20 and dewatering wells W-3 and BYA-1 and abandoned dewatering well casing W-10. Transducers are programmed to record data at 24-hour, 12-hour, one-hour or one-minute intervals depending on the purpose of the transducer readings and what the data will be used for. Plots of selected transducer data are included below.

4.2.1 Headscarp Region

Water levels in the Headscarp Region are monitored using SP-26 only. Groundwater levels in SP-26 have remained consistent since approximately 2006 with moderate, seasonal responses to rainfall. Water levels have declined slightly by 0.60-feet since the December 2024 measurement. Manual water level monitoring will continue approximately bi-monthly. There are no dewatering facilities in the vicinity of SP-26.

4.2.2 Eastern Region

Water levels in the Eastern Region were monitored with standpipe monitoring wells SP-3, SP-3A and SP-33, piezometer PC-1 and de-powered dewatering well W-3 and summarized in Table 6. SP-3 was not monitored due to lack of property access and because it has been dry to its maximum (post-sheared off and filled in) depth since at least 2014. SP-33 was not monitored because it is located within private property of a damaged/destroyed residence.

Table 6: Eastern Region Water Level Monitoring

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between March 2025 and December 2024 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
PC-1	132.5	+0.1	130.6	-0.1	137.5	-5.0
SP-3A[1]	86.2	-2.1	57.9	+28.3	66.1	+20.1
SP-33		Not Measured				
SP-3		Not Measured				

Notes:
[1] Recorded values may not represent true water levels until they can be observed after a period of drier weather and allow time for the additional surface water that has entered the casing to dissipate.

Monthly groundwater levels in Standpipe SP-3A fluctuated in response to February rainfall and rose approximately 24.4-feet within the casing following February rain. This has been observed to be the result of surface runoff directly filling the casing during rainfall. Water levels in SP-3A relative to pre-fire December 2024 declined by 2.1-feet. Monthly water levels in PC-1 remained essentially unchanged with a slight increase of 0.1-feet. This elevation change is too small to infer causation resulting from decreased pumping versus normal seasonal fluctuations. Figure 3 presents plots of water elevation transducer data for PC-1 and SP-3A and W-3:

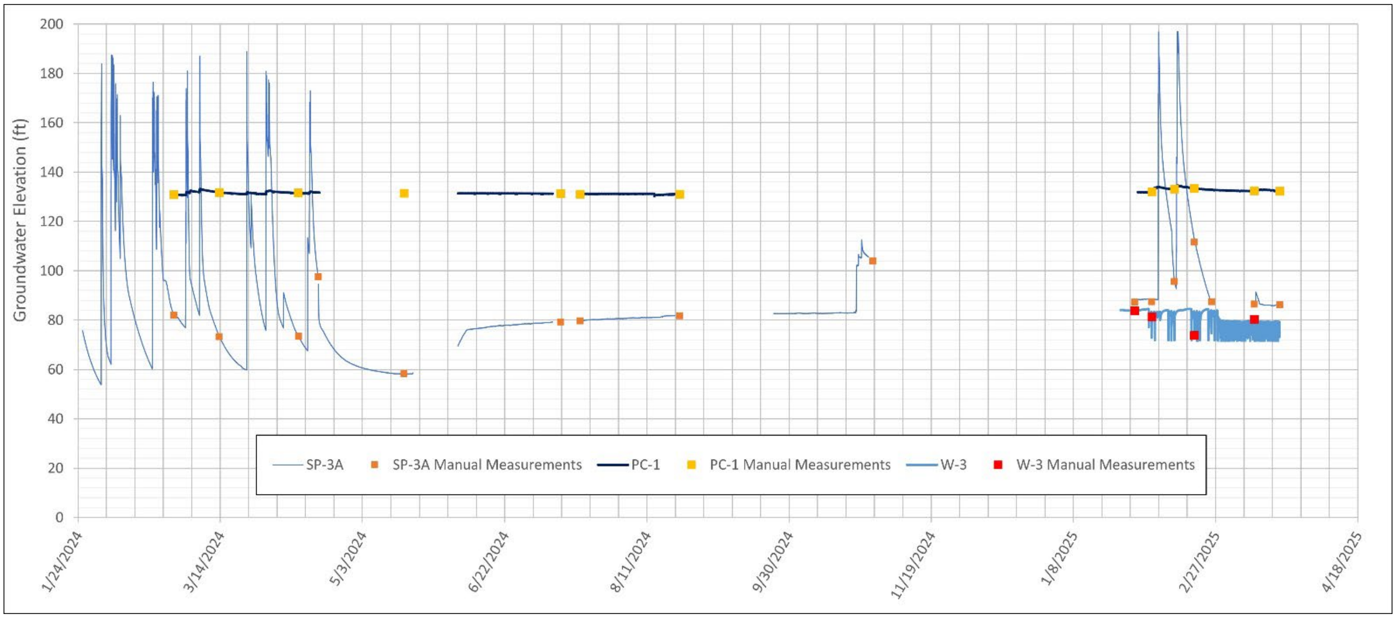


Figure 3: Groundwater Transducer Data

4.2.3 Central Region

Water levels in the Central Region are monitored with standpipe monitoring wells SP-9A, -16, 16A, -17, -17A, and -24, piezometers SP-35 and -36 and de-energized dewatering wells W-16 and W-17. Standpipes SP-17, 17a were not accessible during the monitoring period. Water levels in de-energized Dewatering Well W-17 and standpipes SP-36 and SP-24 increased by 0.9-feet or less during the monitoring period. These elevation changes are too small to infer causation resulting from decreased pumping versus normal seasonal fluctuations. SP-9A and SP-35 increased by 2.49 and 18.3-feet respectively. These elevation changes may be due to proximity to de-energized, high producing Dewatering Wells W-16 and BYA-4. Water levels in standpipe SP-35 began rising prior to the fire after Dewatering Well BYA-4 was down maintenance in September/October 2024. Standpipe SP-35 recorded similar water level rise during April 2015 to February 2016 when Well BYA-4 was out of Service. Water levels measured in SP-16 and SP-16A are highly reactive to pumping rates in

Dewatering Well BYA-1 and reflect increased production after well casing treatment and pump replacement.

Table 7: Central Region Water Level Monitoring

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between December 2024 and March 2025 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SP-9A	225.70	+2.49 (Feb 25, 2025)	224.6	+1.1	226.3	-0.6
SP-16	67.92	-72.82	115.1	-47.2	76.3	-8.4
SP-16A	110.06	-44.61	130.1	-3.7	138.0	-37.9
SP-17	Not Measured					
SP-17A	Not Measured					
SP-24	52.02	+0.49	50.1	+1.92	45.2	+6.82
SP-35	136.44	+18.3	84.1	+52.3	92.7	+43.7
SP-36	191.72	+0.88	190.2	+1.52	191.5	+0.22
W-17	103.8	+0.26	--	--	--	--
W-16	170.7	+7.0	--	--	--	--

4.2.4 Bluff Region

Water levels in the Bluff Region are monitored with standpipe monitoring wells SP-10, -28, -32 and SP-34. Water levels in SP-10, -28 and -32 increased or decreased slightly during the post fire monitoring period as summarized in Table 8. These elevation changes are to small to infer causation resulting from decreased pumping versus normal seasonal fluctuations. Water levels in SP-34 increased by 7.6-feet and may be due to nearby well FW-2 being de-energized during January and part of February. FW-2 is now returned to service on an SCE generator, and it is anticipated SP-34 water levels will begin to decline. Water levels in SP-34 will continue to be monitored approximately weekly.

Table 8: Bluff Region Water Level Monitoring

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between December 2024 and March 2025 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SP-10	48.4	-1.0 (July 2024)	47.4	+1.0	44.4	+4.0

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between December 2024 and March 2025 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SP-28	35.6	+1.4 (July 2024)	33.6	+2.0	33.3	+2.3
SP-32	50.5	+1.1	49.7	+0.8	75.4	-24.9
SP-34	37.2	+7.6	25.9	+11.3	52.5	-26.6

4.2.5 PCH Region

Water levels in the PCH Region are monitored with standpipe monitoring wells SP-11, -12, -14, -15, -19, 27A, -29 and -30. Any of the standpipes located on the south side of PCH with exception of SP-14 and -15 were inaccessible due to debris from damaged/destroyed residences. On the north side of PCH, SP-30 was covered by a persistent area of standing water and mud after February rain and was inaccessible. SP-14 and SP-29 groundwater measurement changes were less than one foot during the reported period. Water levels in SP-15 increased by 3.12-feet. Changes in the PCH region standpipe water levels are consistent with typically observed fluctuations caused by seasonal effects, rainfall and tide.

Table 9: PCH Region Water Level Monitoring

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between December 2024 and March 2025 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SP-11	Not Measured					
SP-12	Not Measured					
SP-14	4.40	-0.54	4.8	-0.4	4.8	-0.4
SP-15	11.92	+3.12	11.7	+0.2	10.7	+1.2
SP-19	Not Measured					
SP-27A	Not Measured					
SP-29	18.6	+0.7	17.8	+0.8	16.6	+2.0
SP-30	Not Measured After January					

4.2.6 Western Extension Region

Water levels in the Western Extension Region are monitored with standpipe monitoring wells SP-20, -21, -22, -23 and abandoned Dewatering Well W-10. A summary of the monitoring results in the Western Extension region is presented in Table 10. Measurements in standpipes SP-20, -23, and W-10 remained consistent over the post-fire period. The recorded water level of SP-22 rose by 4.4-feet which occurred between early and mid-January and has remained essentially level since. SP-21 has risen 3.9-feet over the post fire period and may be influenced by the de-energizing of Dewatering Well BYA-2 located approximately 30-feet to the northeast. Water levels in SP-20, -21 and -2 remain elevated after the consecutive heavy rainfall winters of 2022 and 2023 and are anticipated to dissipate to average levels.

Table 10: Western Extension Water Level Monitoring

Standpipe ID	March 27, 2025 Groundwater Elevation (ft)	Change in Groundwater Elevation between December 2024 and March 2025 (ft)	2023-2024 Average Groundwater Elevation (ft)	Change in Groundwater Elevation from 2023-2024 Average (ft)	1991-2024 Historical Mean Groundwater Elevation (ft)	March 2025 Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SP-20	218.7	+0.6	205.8	+12.9	185.2	+33.5
SP-21	403.9	+3.9	399.1	+4.8	382.2	+21.7
SP-22	466.9	+4.4	467.9	-1.0	467.7	-0.8
SP-23	565.8	-1.1	531.7	+34.1	497.1	+68.1
W-10	216.81	+0.19	--	--	--	--

5. Inclinometer Surveys

Yeh repeated surveys on “key” inclinometers that have been accessible to staff since the Palisades Fire. Table 11 provides a list of the locations surveyed, the survey dates and the interpretation of the results. An inclinometer is considered “key” if it extends below the 1983 basal slide plane or has documented historic movement. These locations will continue to be surveyed on an accelerated schedule weekly to monthly schedule. The remaining inclinometer locations will be surveyed on their typical quarterly or annual schedule or sooner if movement is interpreted in the “key” locations.

Table 11: Summary of Inclinometer Surveys since Palisades Fire

Inclinometer ID	Sub-Region	Depth below ground surface	2025 Survey Date(s)	Interpretation
SP-29	PCH	138 feet	2/24, 4/15	No quantifiable shear displacement since last survey prior to fire
SP-30	PCH	120 feet	4/17	No quantifiable shear displacement since last survey prior to fire
SP-3A	Eastern	244 feet	3/19, 4/15	No quantifiable shear displacement since last survey prior to fire
PC-1	Eastern	154 feet	3/19, 4/15, 4/17	No quantifiable shear displacement since last survey prior to fire
SP-16A	Central	390 feet	4/22	No quantifiable shear displacement since last survey prior to fire

SI-17B	Central	248 feet	2/24, 4/21	Possible displacement at 200-foot depth, <0.05 inches, within margin of error, requires additional surveys
SP-34	Central	380 feet	4/18	No quantifiable shear displacement since last survey prior to fire
SP-36	Central	254 feet	4/21	No quantifiable shear displacement since last survey prior to fire
SP-32	Bluff	350 feet	4/22	No quantifiable shear displacement since last survey prior to fire

6. Additional Conclusions

- Groundwater levels and dewatering production rates prior to the Palisades Fire had been recovering from a historic two consecutive winters of heavy rainfall and Hurricane Hilary.
- Groundwater levels in some areas are elevated but are generally considered to be within the normal range in response to rain events and are declining.
- The significant reduction in imported water compensates for a temporary decrease in dewatering well production.
- Hydrauger production has continued relatively unabated by the fire.
- Vadose zone and perched water already present in the subsurface may migrate deeper and reveal in monitoring wells over time with a continued reduction to well pumping.
- Anomalous water level increases in isolated standpipes may be local to the standpipe construction and onsite conditions as discussed for those cases. Accelerated monitoring approximately weekly will remain ongoing.
- Some water levels are within the zone of influence of nearby dewatering wells and respond almost immediately to pump operations.
- Groundwater levels are anticipated to continue to lower as more dewatering wells are brought back into service and imported water remains low.

We appreciate the opportunity to be of service. Please contact Nick Simon at (805) 414-0991 or Loree Berry at (805) 440-0966 if you have questions or require additional information.

Sincerely,
YEH AND ASSOCIATES, INC.

REGISTERED PROFESSIONAL ENGINEER
LOREE A. BERRY
No. C 73221
CIVIL
STATE OF CALIFORNIA

Nick Simon, GIT
Senior Project Geologist

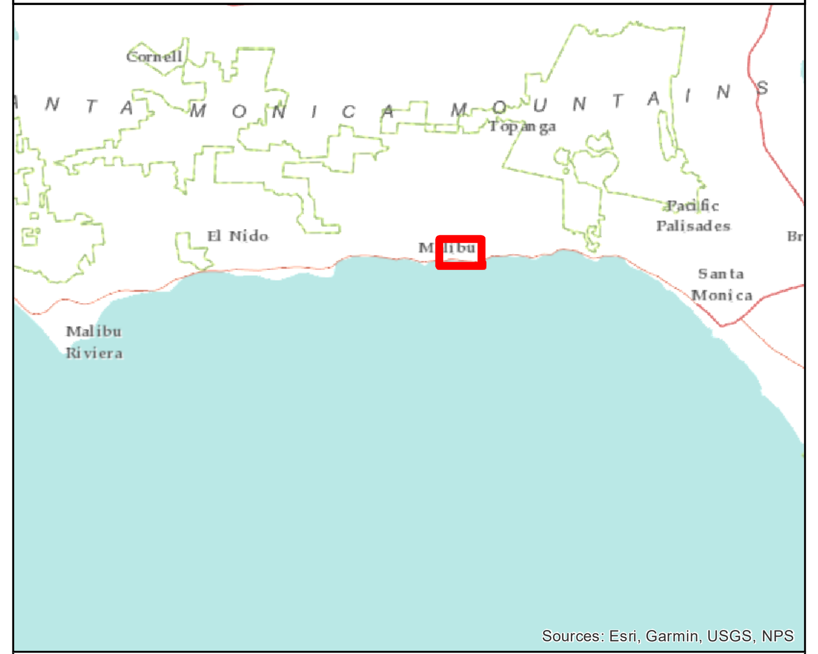
Loree A. Berry, PE
Senior Engineer/Project Manager

Attachments:

Plate 1 – Facility Map
Appendix A – Groundwater Hydrographs (Pages A-1 to A-16)

Maintenance and Monitoring Facilities
Assessment District 98-1, Big Rock Mesa
City of Malibu, California

Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services



- Dewatering Well
- Hydrauger Outfall
- Hydrauger Installation Length
- Conveyance Point
- Ocean Discharge Point
- Approximate Limits of Primary Land Movement
- Western Extension Boundary
- Big Rock Mesa Landslide Assessment
- Slope Inclinometer/Standpipe Piezometer
- Slope Inclinometer/Standpipe Piezometer (standpipe only, not usable for inclinometer)
- Catch Basin
- Master Water Meter
- Storm Drain

N

SCALE 1:2,100

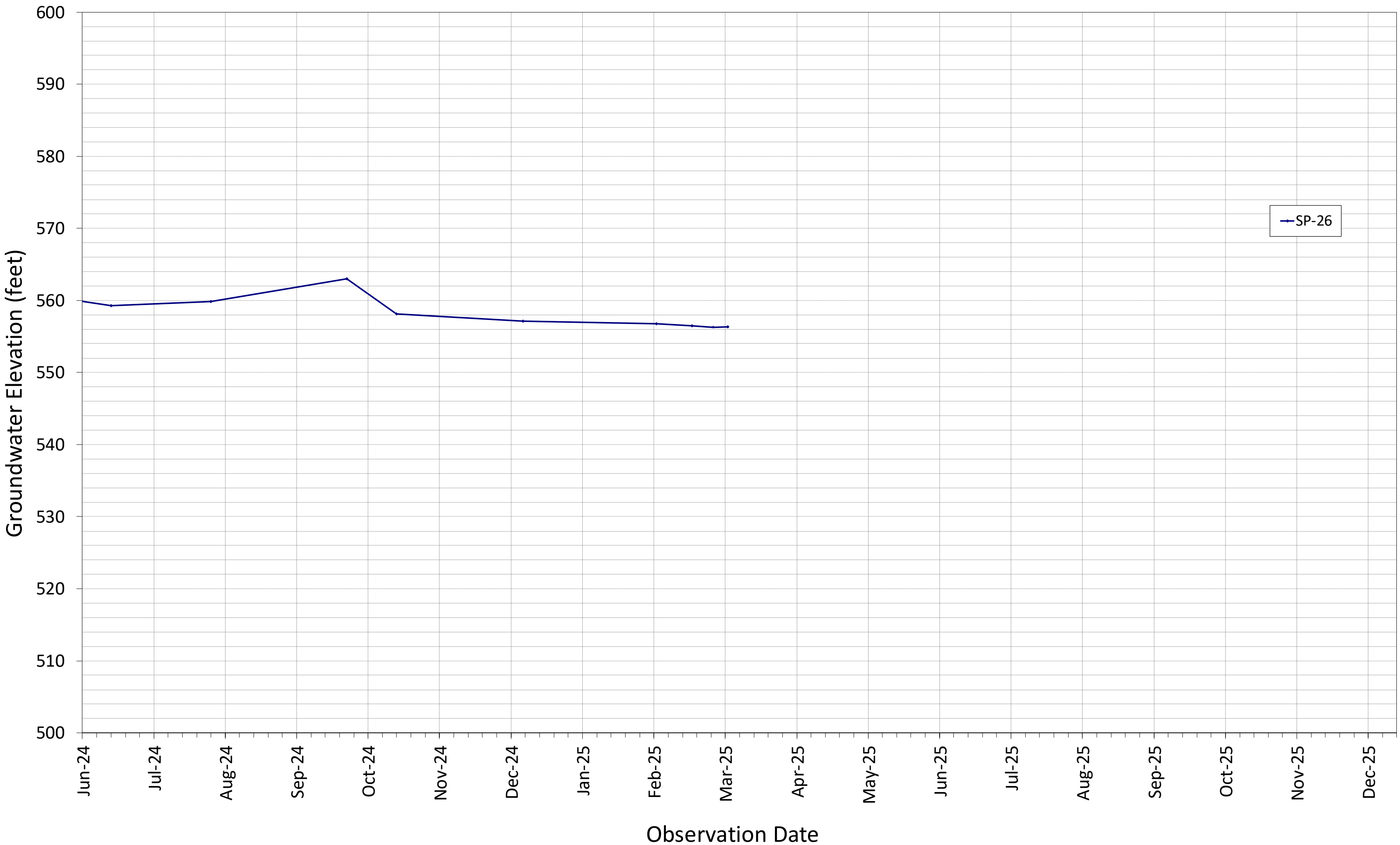
200 100 0 200 Feet

DATE:	PROJECT NUMBER:	PLATE:
December 2021	220-276	1
DRAWN BY:	APPROVED BY:	
M. Boyd	L. Berry	

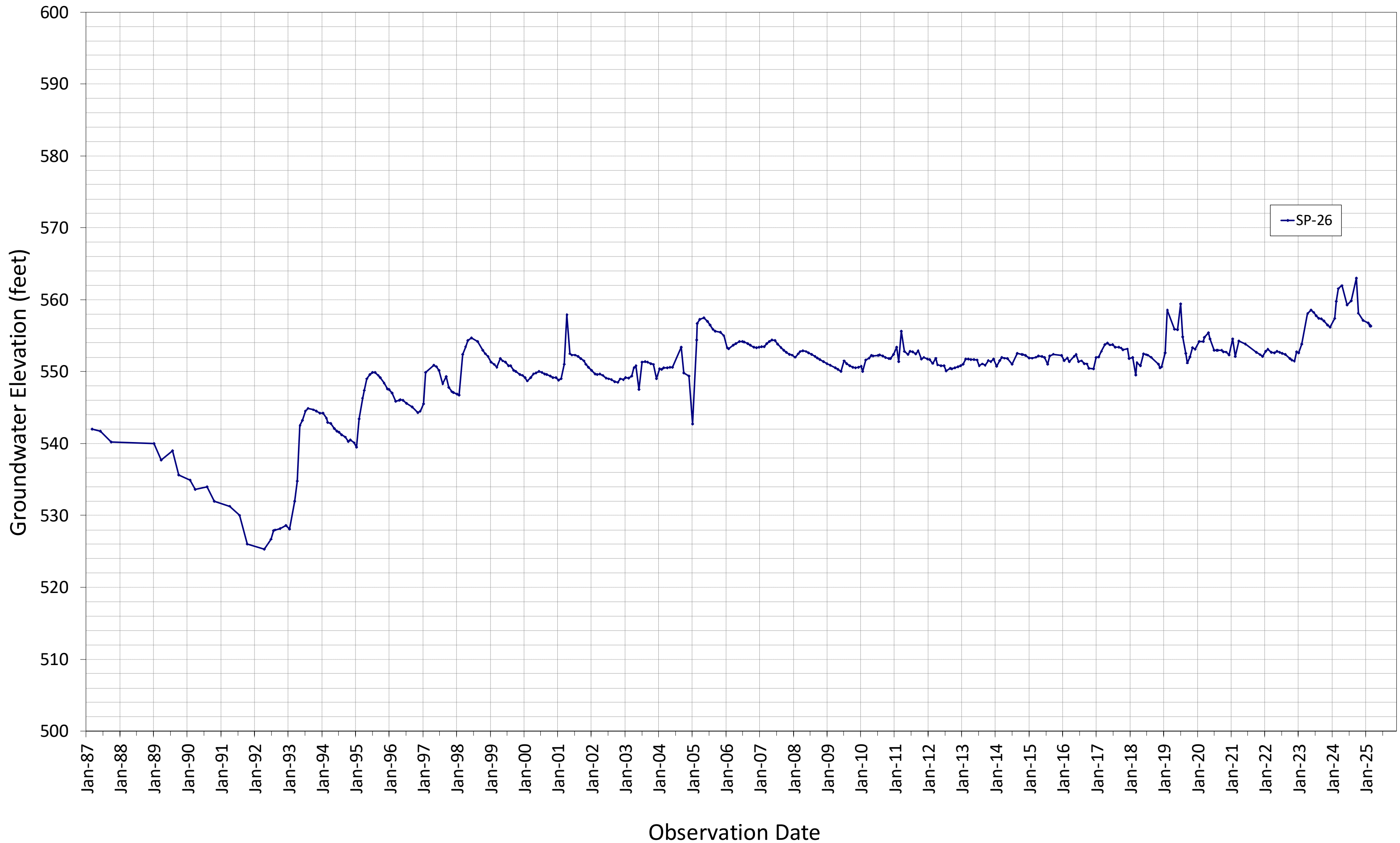
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Document Path: X:\Projects\2020 Projects\220-276 Big Rock Mesa\BRM_GDB_Setup.mxd

APPENDIX A – GROUNDWATER HYDROGRAPHS



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

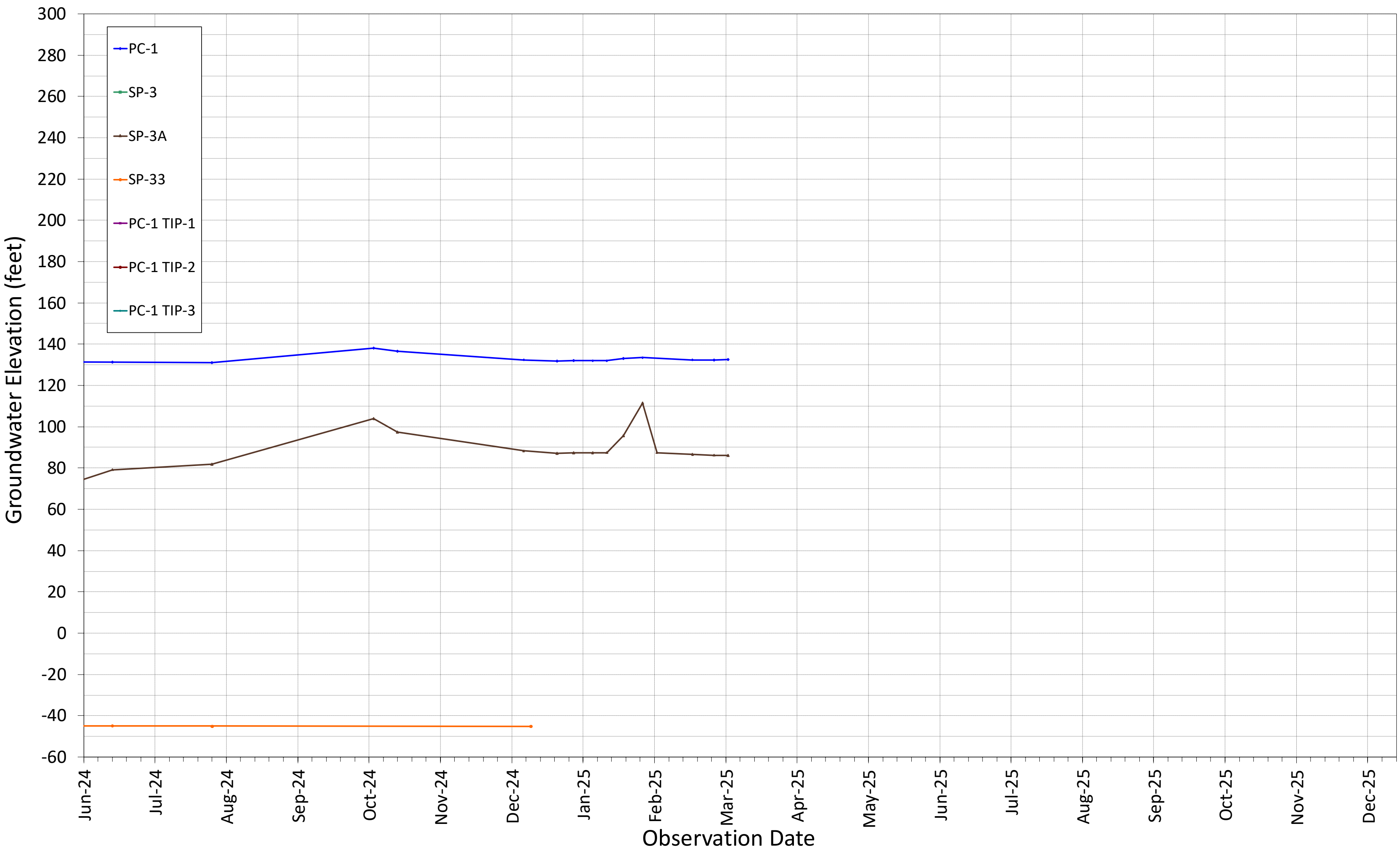


GROUNDWATER HYDROGRAPH

Headscarp Area

Big Rock Mesa Landslide Assessment District

Malibu, California

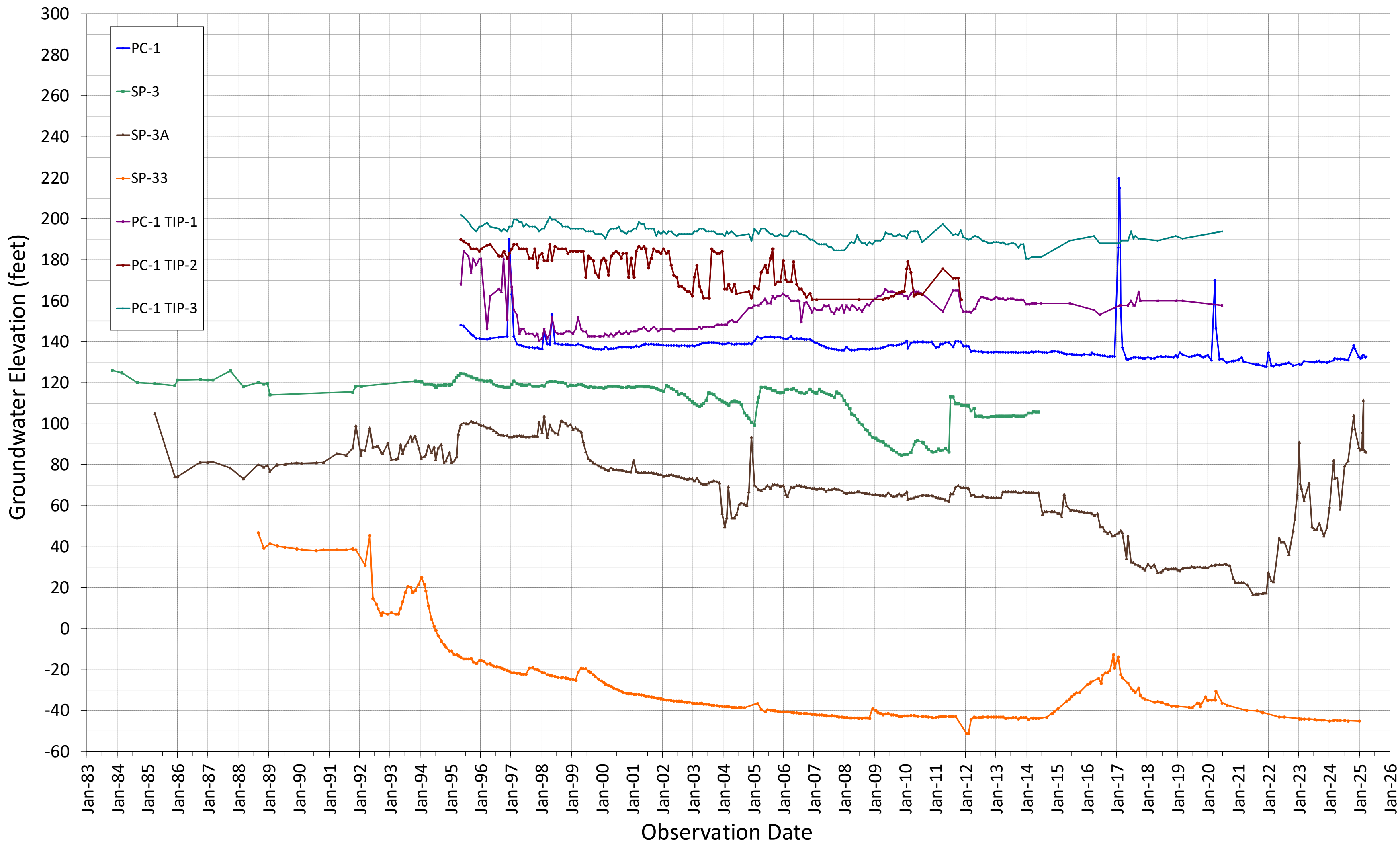


GROUNDWATER HYDROGRAPH

Eastern Mesa Region

Big Rock Mesa Landslide Assessment District

Malibu, California

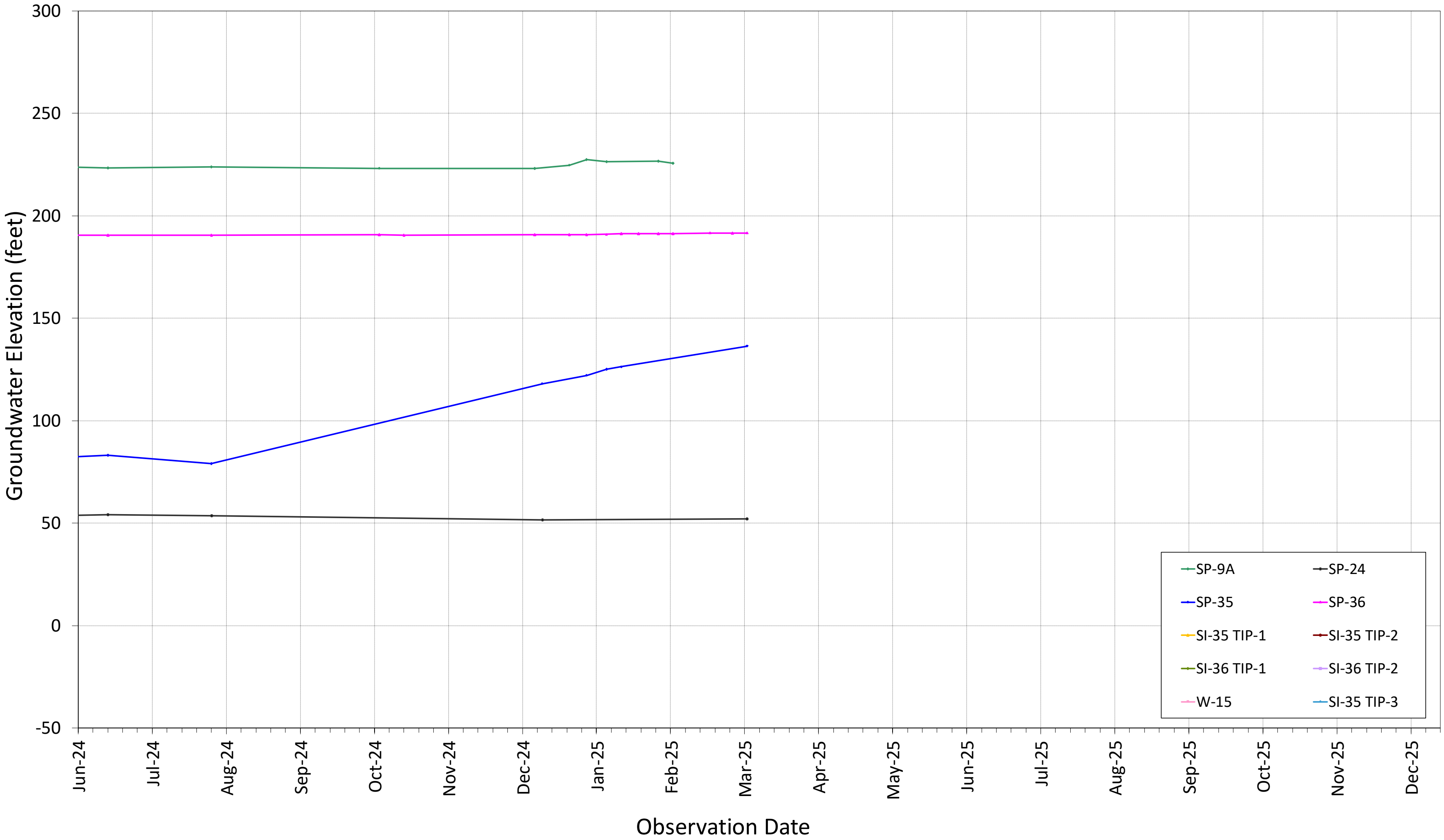


GROUNDWATER HYDROGRAPH

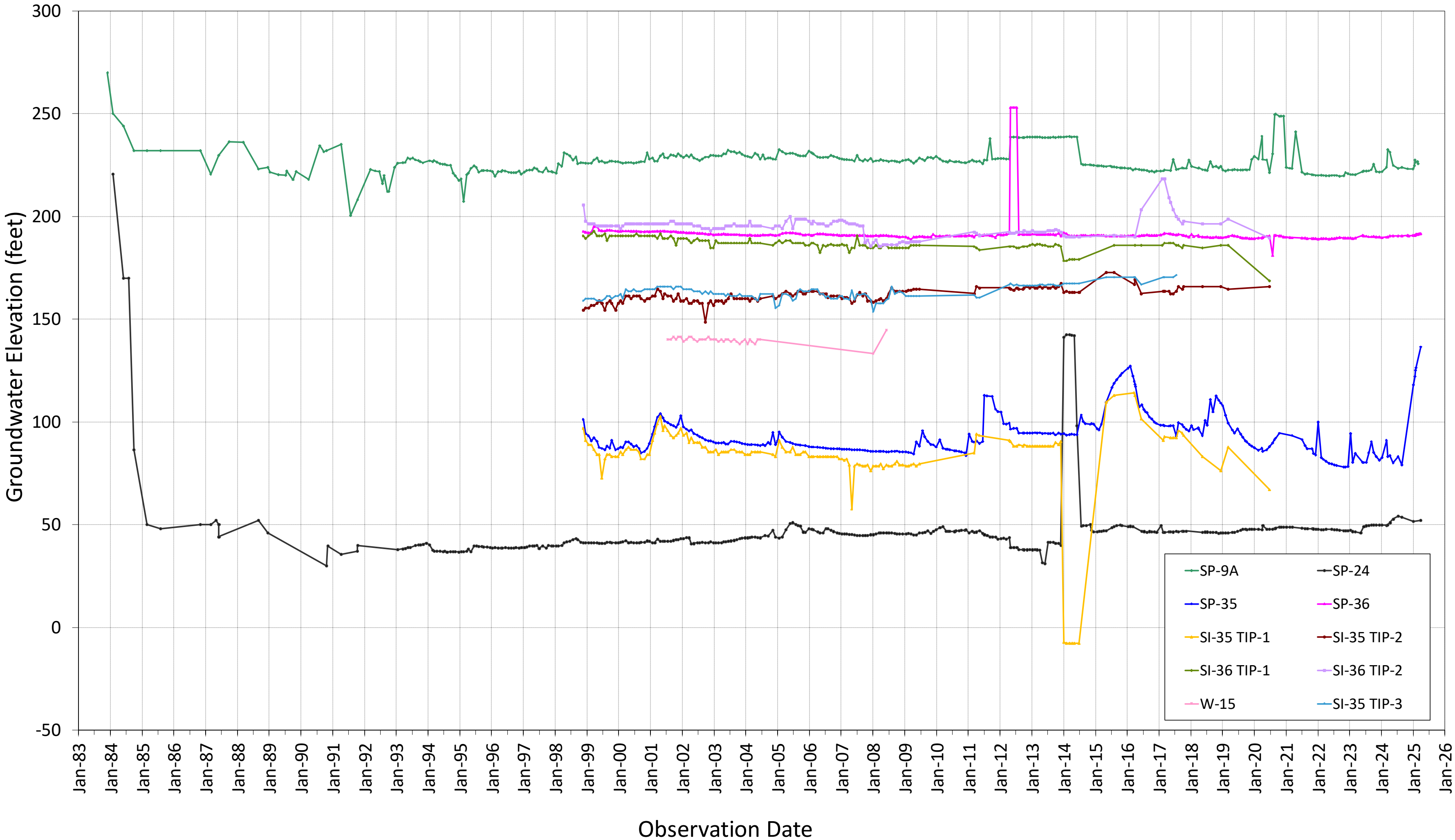
Eastern Mesa Region

Big Rock Mesa Landslide Assessment District

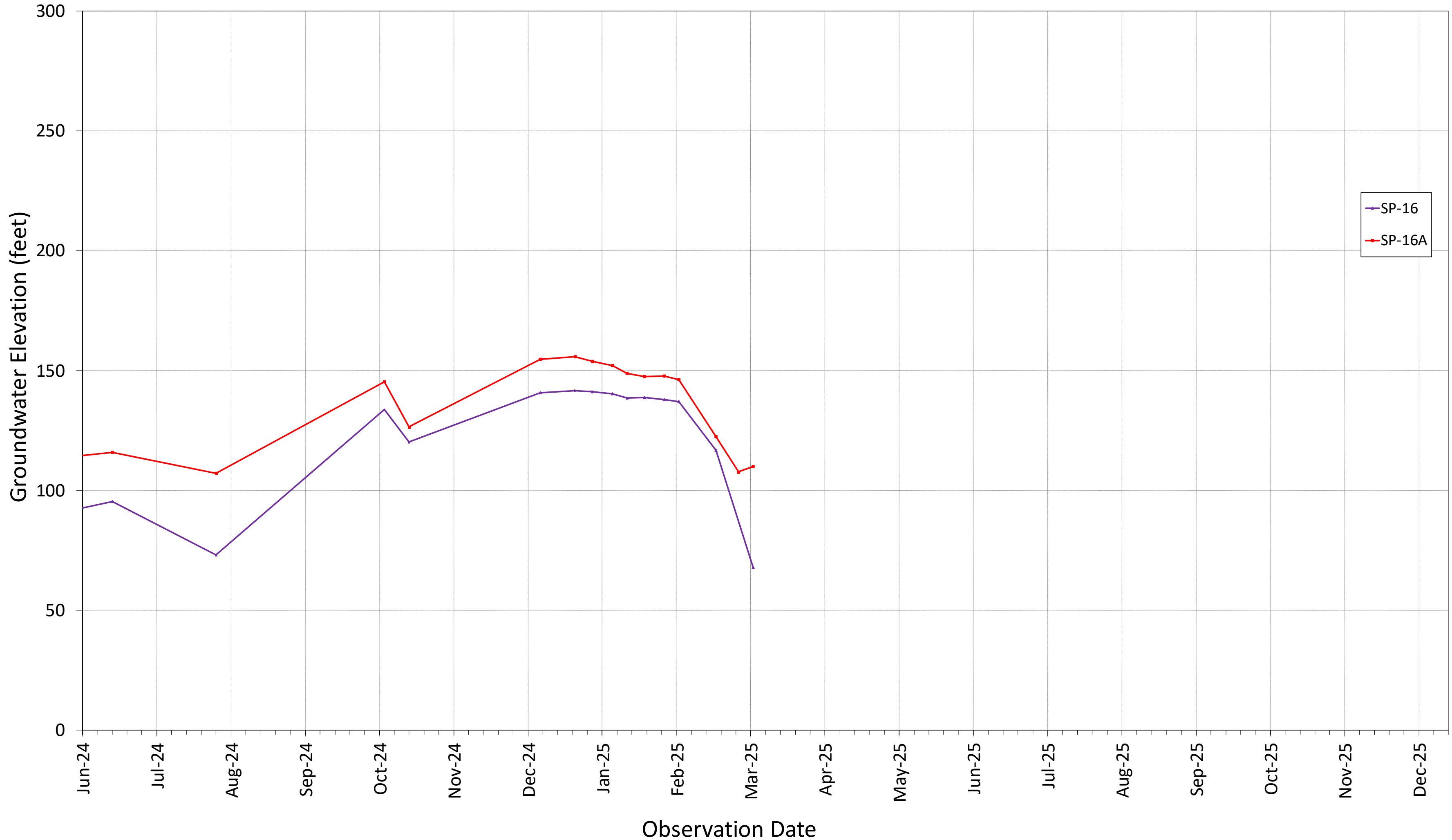
Malibu, California



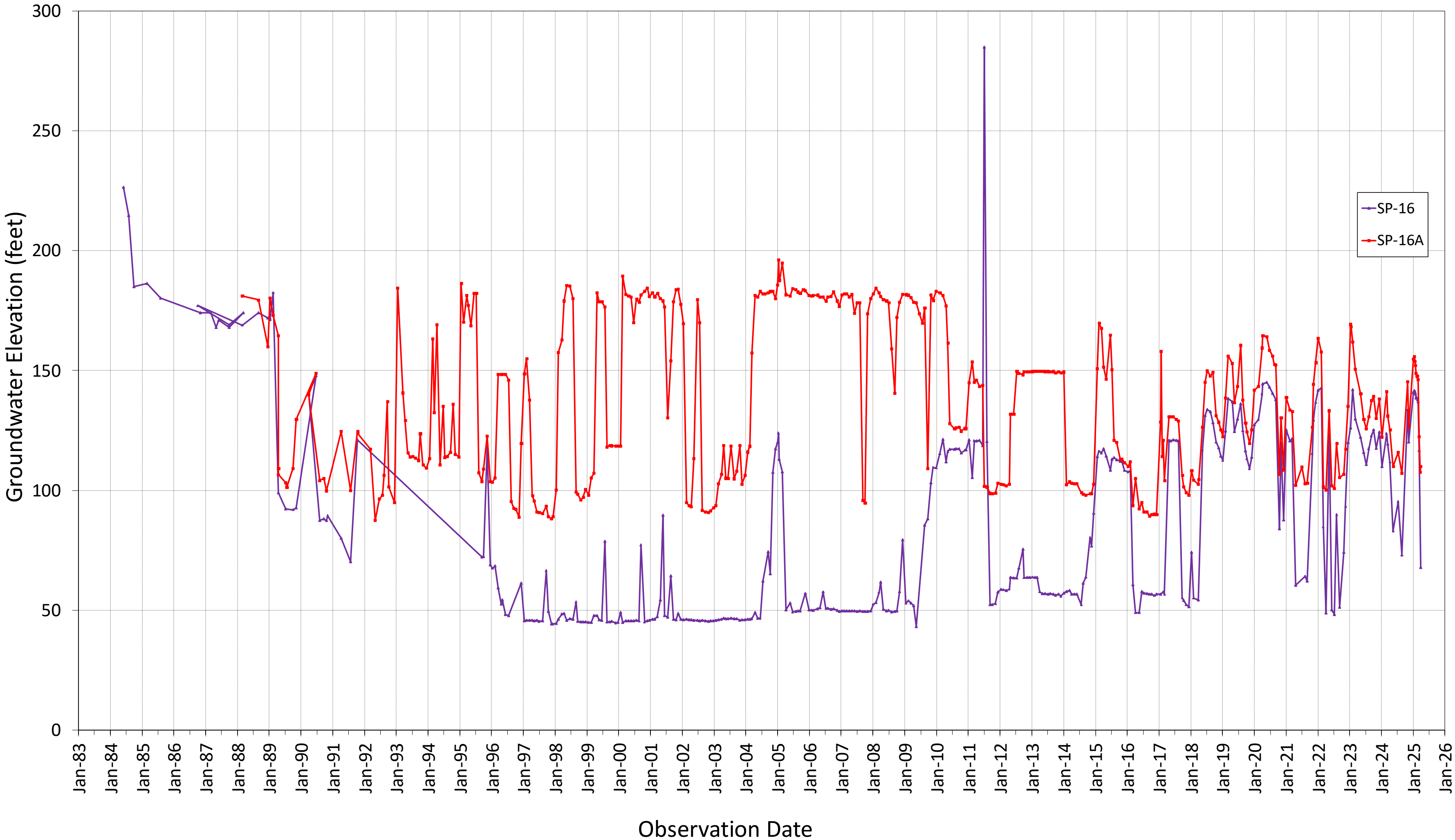
GROUNDWATER HYDROGRAPH
Central Mesa Region
Big Rock Mesa Landslide Assessment District
Malibu, California



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



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

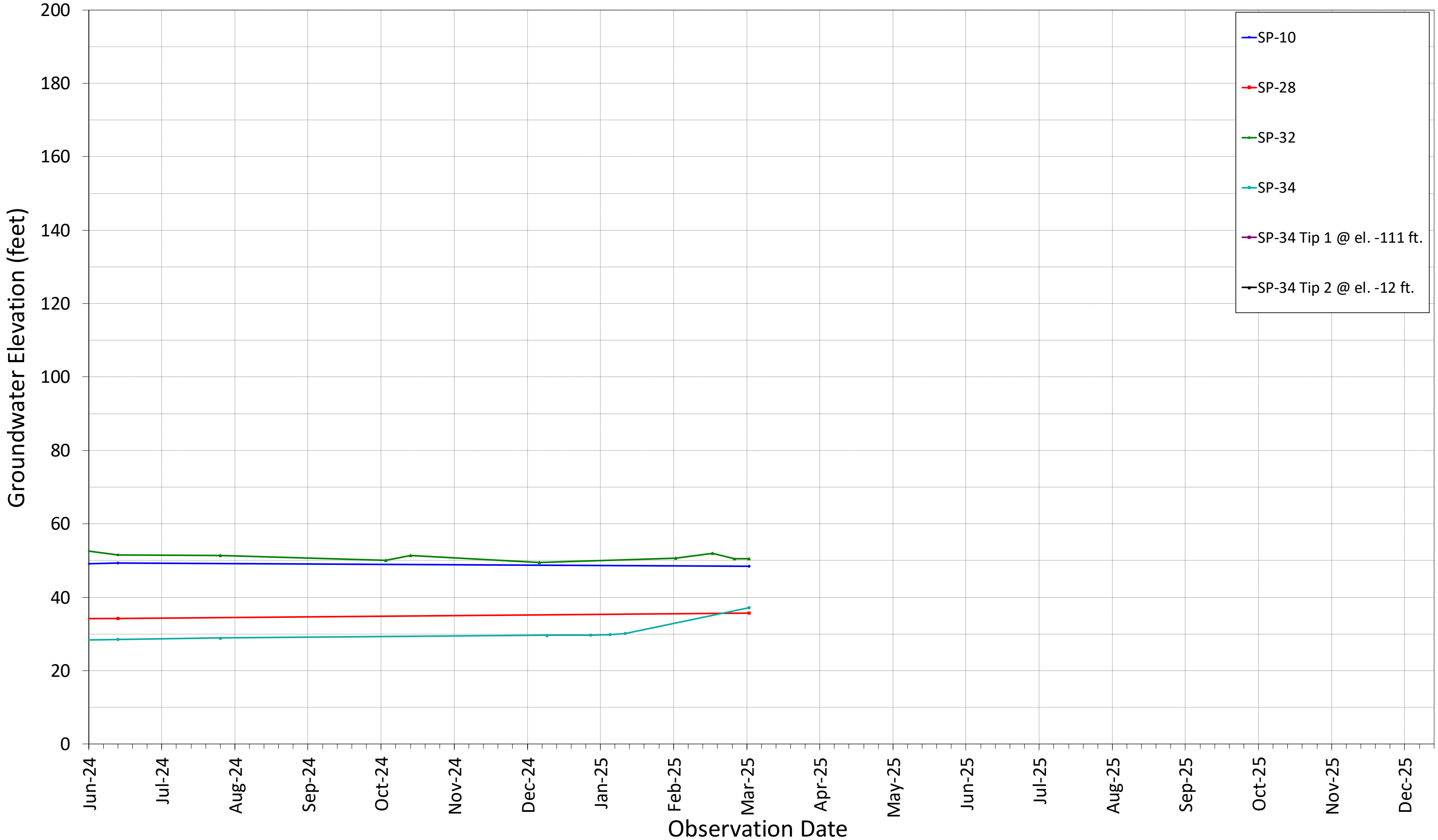


GROUNDWATER HYDROGRAPH

Central Mesa Region

Big Rock Mesa Landslide Assessment District

Malibu, California

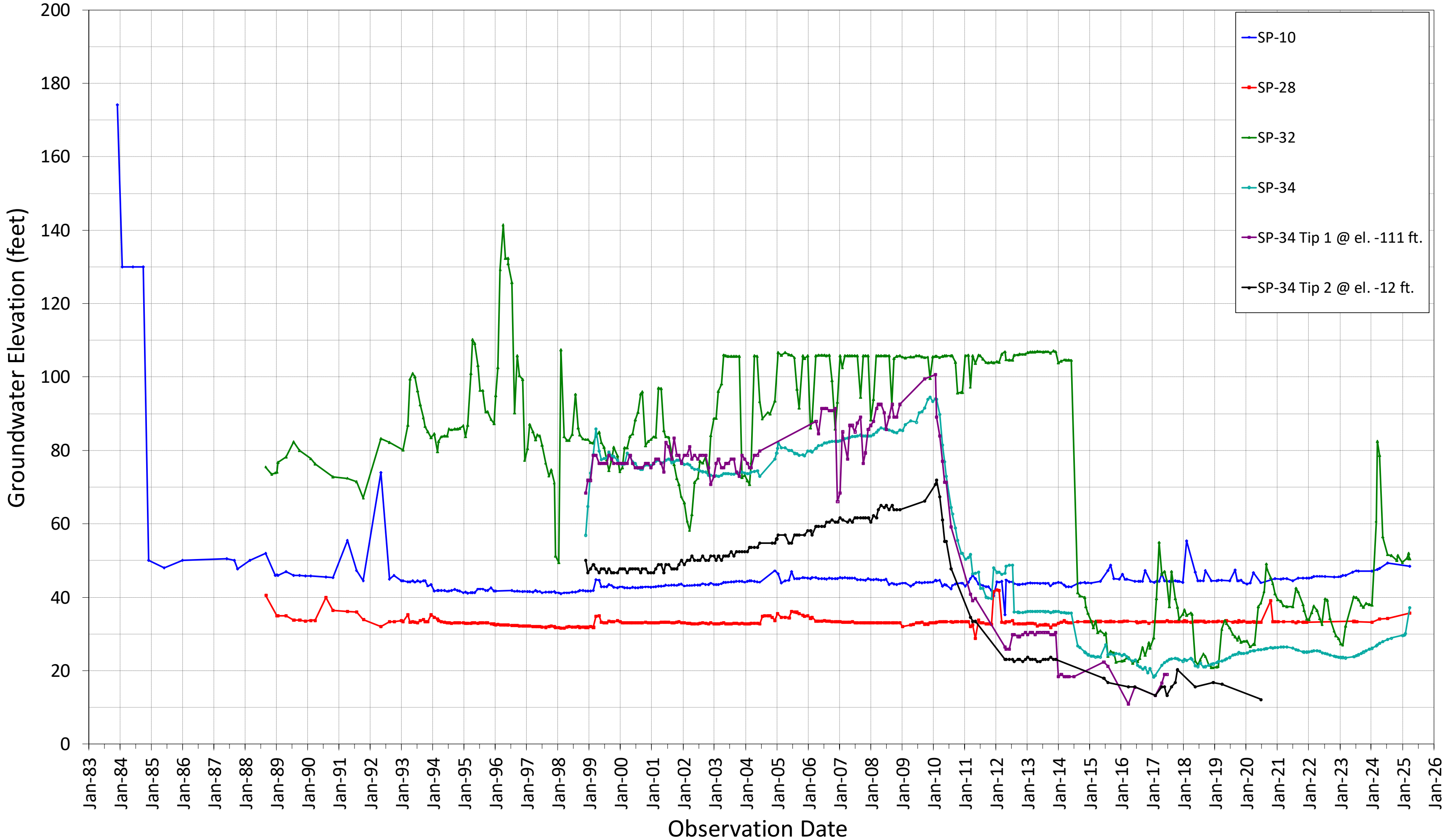


GROUNDWATER HYDROGRAPH

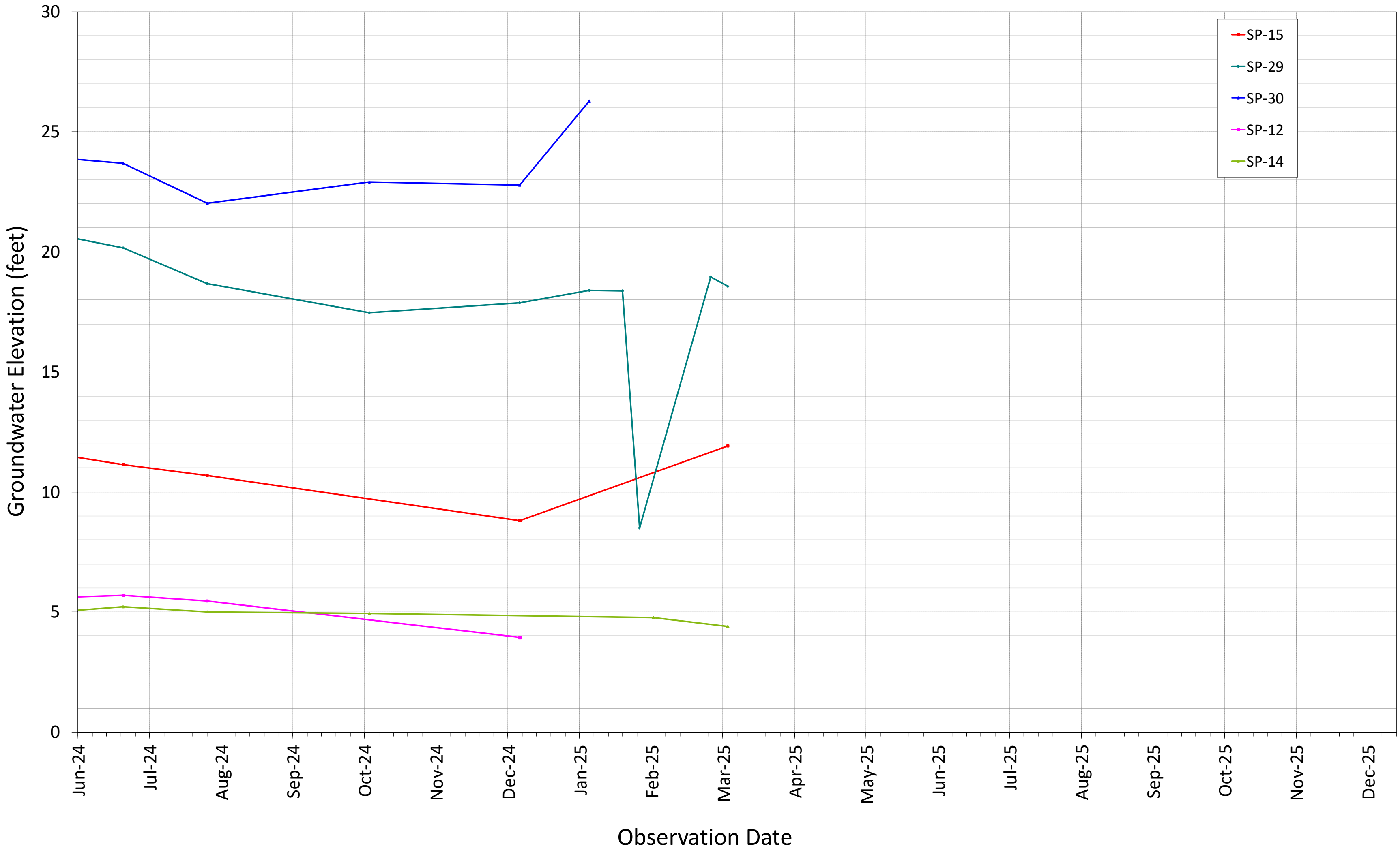
Bluff Region

Big Rock Mesa Landslide Assessment District

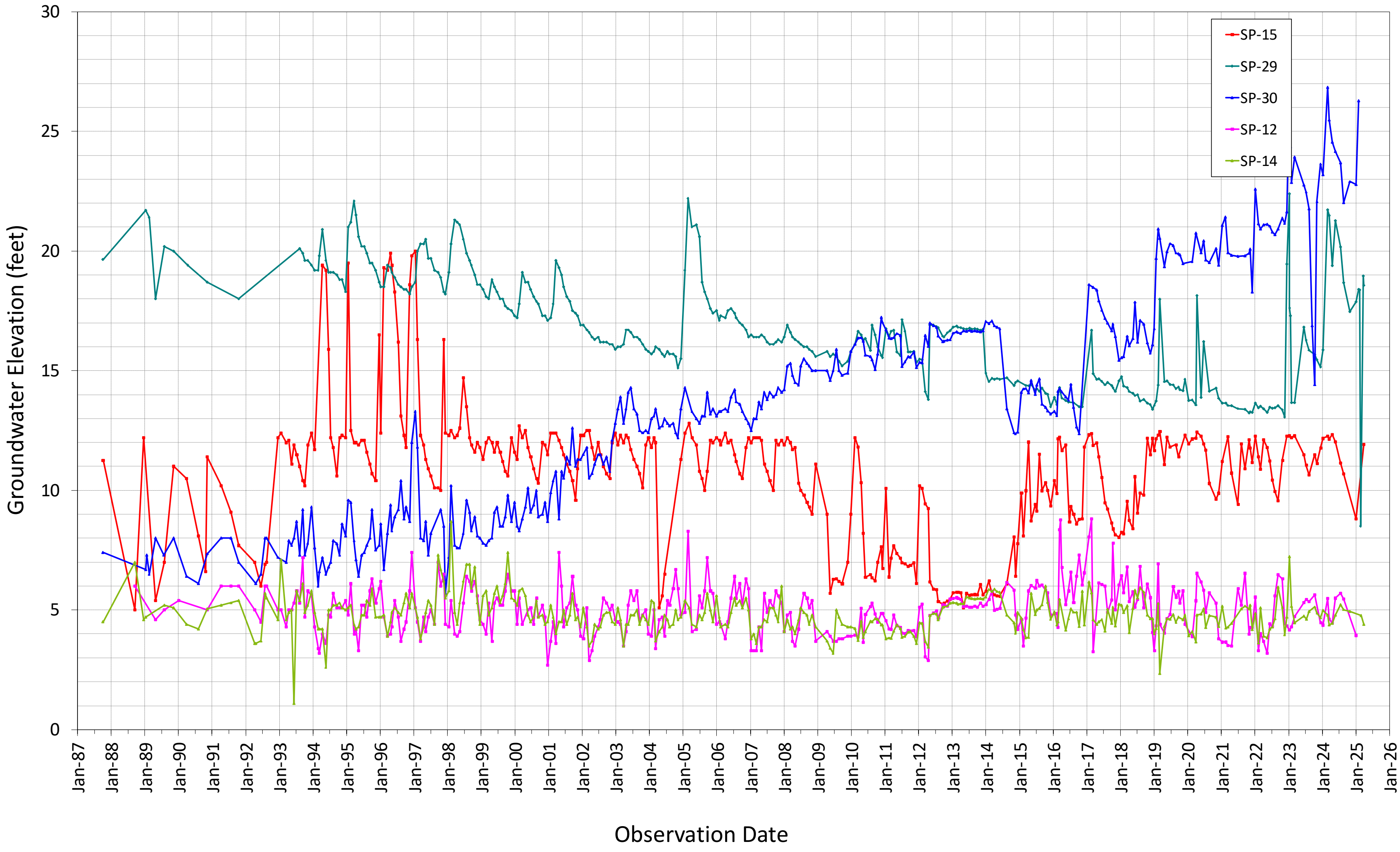
Malibu, California



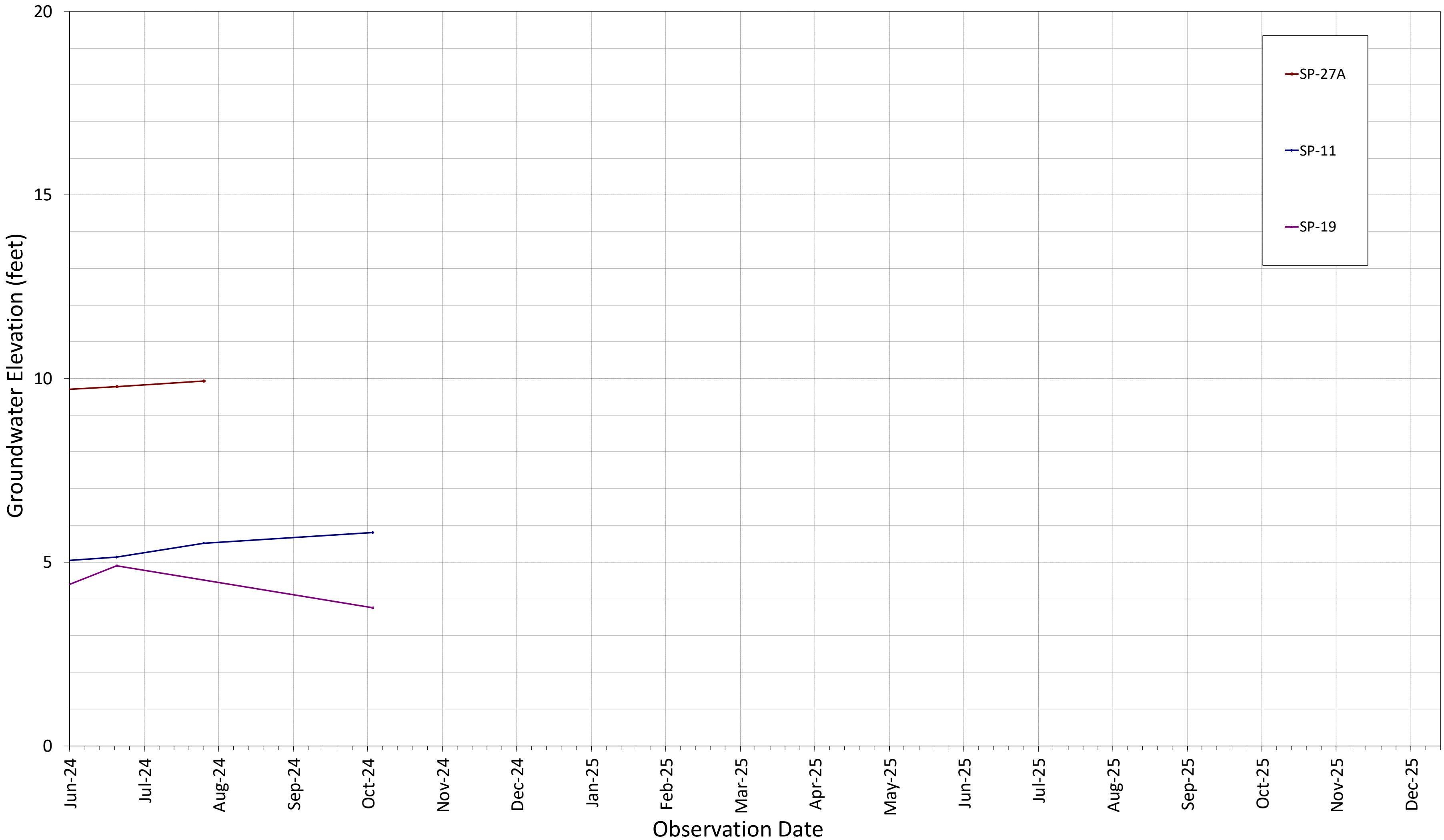
GROUNDWATER HYDROGRAPH
Bluff Region
Big Rock Mesa Landslide Assessment District
Malibu, California



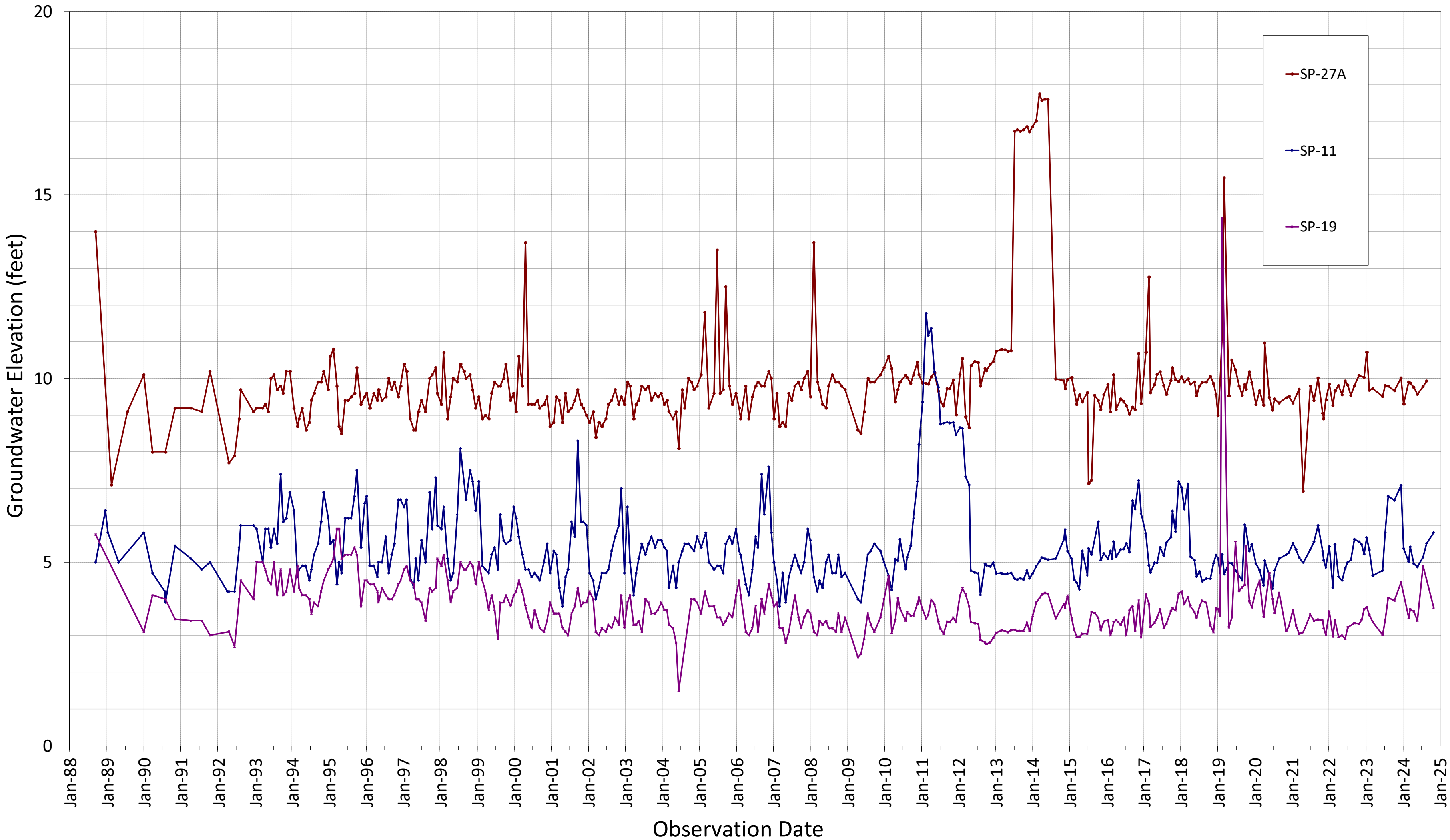
GROUNDWATER HYDROGRAPH
Pacific Coast Highway (Western Half)
Big Rock Mesa Landslide Assessment District
Malibu, California



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



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

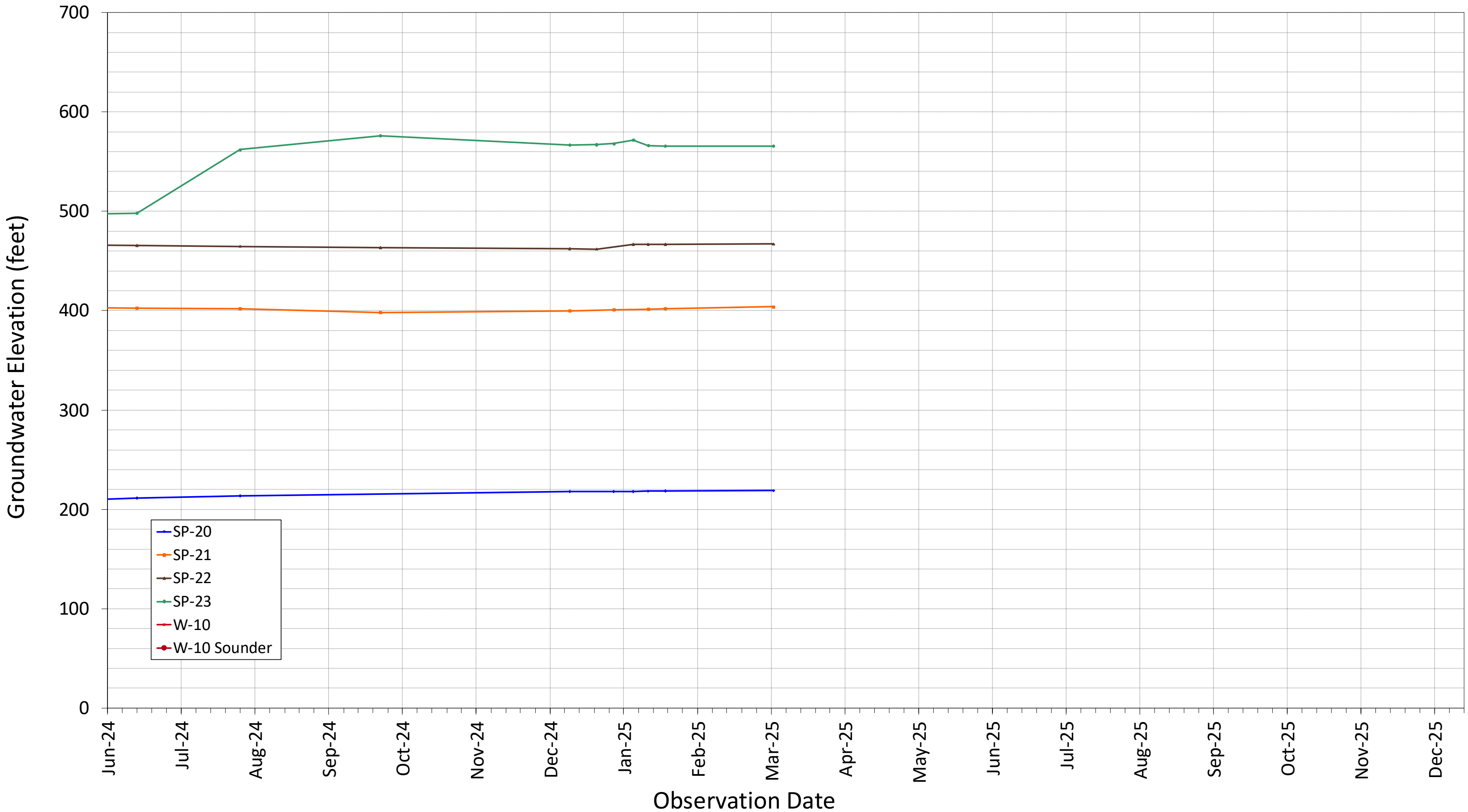


GROUNDWATER HYDROGRAPH

Pacific Coast Highway (Eastern Half)

Big Rock Mesa Landslide Assessment District

Malibu, California

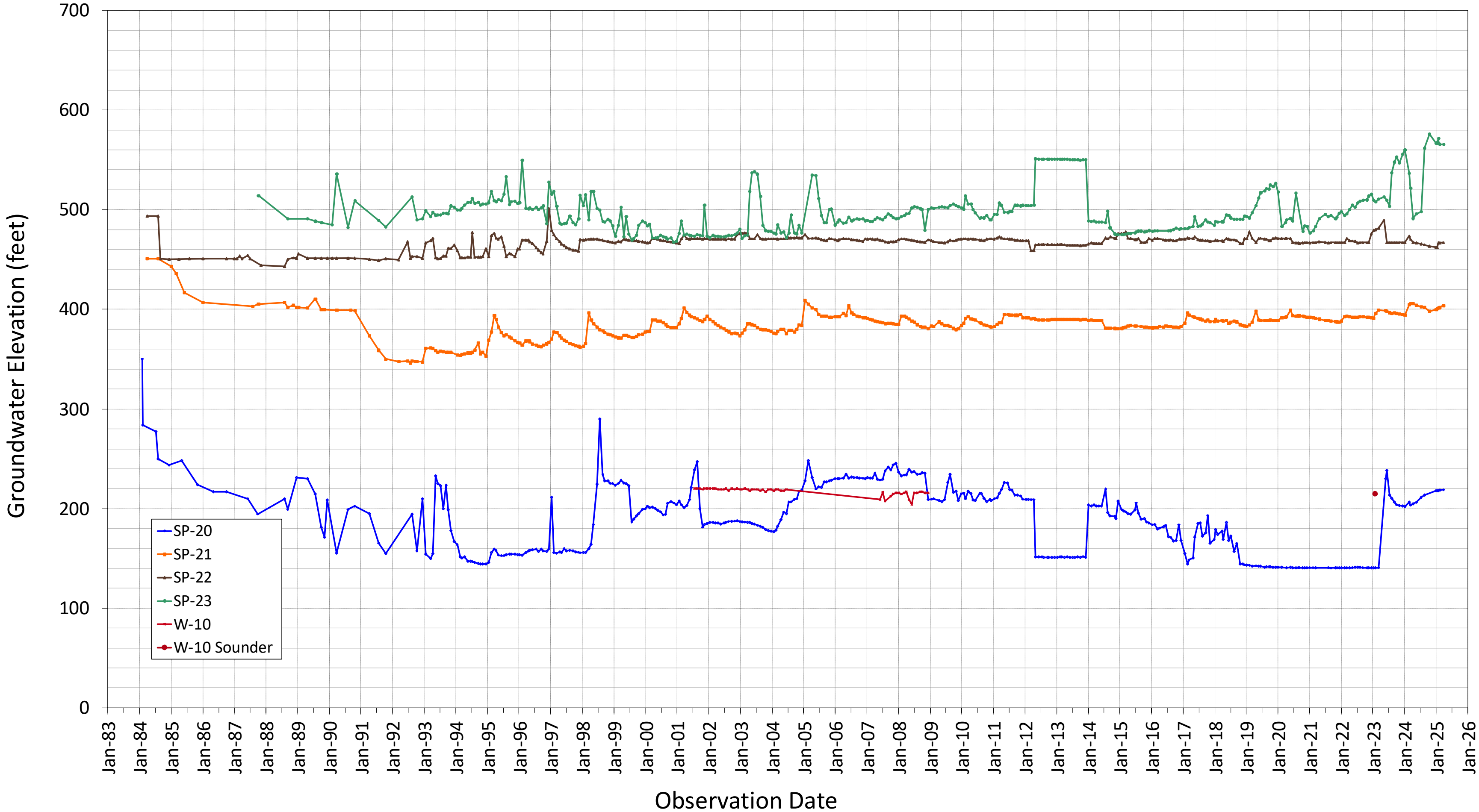


GROUNDWATER HYDROGRAPH

Western Extension

Big Rock Mesa Landslide Assessment District

Malibu, California



GROUNDWATER HYDROGRAPH

Western Extension

Big Rock Mesa Landslide Assessment District

Malibu, California