



Annual Surveillance Report January 2021 to December 2021 for Rattlesnake Canyon Dam DSOD Dam No. 1029-003

Irvine, California

Submitted to:
Irvine Ranch Water District
Dams & Storage
15600 Sand Canyon Avenue
Irvine, CA 92618



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September 29, 2022
GEI Project No. 1901888

Consulting September 29, 2022
Engineers and GEI Project No. 1901888
Scientists

Ms. Danielle Drake,
Assistant Engineer – Dams & Storage
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

**Re: Rattlesnake Canyon Dam, DSOD Dam No. 1029-003,
Annual Surveillance Report from January 2021 to December 2021**

Dear Ms. Drake:

GEI Consultants, Inc. (GEI) is pleased to submit this Annual Surveillance Report for Rattlesnake Canyon Dam covering January 2021 to December 2021. This report is part of the scope of work described under our Professional Service Agreement between Irvine Ranch Water District (District) and GEI Consultants Inc. (GEI) dated February 11, 2019.

We appreciate this opportunity to provide the District with our services. Please contact Emerson Revolorio at erevolorio@geiconsultants.com or Rich Sanchez at rsanchez@geiconsultants.com with any questions.

Sincerely,

GEI CONSULTANTS, INC.



Richard Sanchez, P.E.
Principal Engineer



Emerson Revolorio, P.E.
Project Engineer

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April 19, 2022

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CNC Survey Report

Acronyms and Abbreviations

AC	asphalt concrete
AF	acre-feet
CML&C	cement-mortar-lined and coated
District	Irvine Ranch Water District
DSOD	State of California, Department of Water Resources, Division of Safety of Dams
El, EL, Elev	elevation
ft	feet
GEI	GEI Consultants, Inc.
gpm	gallons per minute
gal/min	gallons per minute
H:V	Horizontal to Vertical
ID	identification
in.	inches
liter/min	liters per min
MW	monitoring well
NGVD 29	National Geodetic Vertical Datum of 1929
No.	number
NOAA	National Oceanic and Atmospheric Administration
P.E.	Professional Engineer
P or Piez	Piezometer
RCP	reinforced concrete pipe
Res.	Reservoir
VW or VB	Vibrating Wire
W.S.	water surface
YR	year

1.0 Introduction and Background

1.1 General

This report presents the results of the dam safety monitoring and surveillance program for Rattlesnake Canyon Dam conducted by the Irvine Ranch Water District (District) and GEI Consultants, Inc. (GEI) between January 2021 and December 2021. It includes a review of previous surveillance reports, a compilation of the field measurements, observations, and conclusions related to the general condition and safety of the dam. In addition, recommendations are provided for continued operation, surveillance, and monitoring of the dam. This report is submitted as part of the jurisdictional requirements of the State of California, Department of Water Resources, Division of Safety of Dams (DSOD).

Table 2 provides details of active and abandoned piezometers, observation wells, and seepage flow points. Tables 3 through 8 present field measurements of piezometer water levels, reservoir water surface elevations, seepage flow rates, and horizontal and vertical movement based on survey data collected at Rattlesnake Canyon Dam. Tables 3 and 4 cover the period from January 2007 to December 2021. Piezometric levels and seepage flow rates with respect to reservoir water surface elevations are shown in the figures for the two-year period (January 2020 through December 2021), as well as for a 10 year historical period (January 2011 through December 2021). The historical plots reflect long-term trends and overall performance of the dam and reservoir. The use of long-term and short-term plots help to more easily identify any adverse trends or significant deviations in the data. Tables and graphs are also presented to show the results of horizontal and vertical movement surveys from 1985 through 2022. No surveys were conducted in calendar years 2017 and 2021. The survey for the 2021 review period was performed in April 2022.

The vertical datum indicated on the as-built plans and project documents for Rattlesnake Canyon Dam is National Geodetic Vertical Datum of 1929 (NGVD 29). The reservoir water surface elevation, piezometer instrumentation data and vertical survey data are currently based on NGVD 29.

1.2 Dam and Reservoir

Rattlesnake Canyon Dam is a homogeneous earthfill embankment dam with a chimney drain. It is located on Rattlesnake Canyon Wash in Irvine, California. The dam was completed in 1959.

Modifications to the dam have occurred over the years. Currently, the height of the dam is 79 ft with a crest length of 980 ft and a crest width of 15 ft. The crest of the dam is at Elevation 418.0 ft. Asphalt Concrete (AC) covers the crest of the dam.

The upstream face of the dam has a slope gradient of 3H:1V (Horizontal: Vertical) and a 20-foot-wide bench at approximate Elevation 385.0 ft, per AECOM's 2015 annual surveillance report. The upper portion of the upstream slope is lined with 2-inch-thick AC for erosion protection extending from the crest of the dam to the inside edge of the bench (i.e., not including the bench).

The downstream face of the dam has a slope gradient of 2.5H:1V and also has a 20-foot-wide bench at approximate Elevation 385.0 ft, per AECOM's 2015 annual surveillance report. The downstream slope is covered with grass.

The channel section of the dam is founded on alluvium which overlies the bedrock. An upstream blanket and seepage drains along the downstream toe of the dam were installed to help control and monitor seepage.

The reservoir has a watershed drainage area of about two square miles. The reservoir has a maximum storage capacity of 1,480 acre-feet at the spillway crest Elevation of 412 ft. Due to concerns regarding the stability of the dam under seismic loading conditions, the maximum reservoir level is currently restricted by DSOD to Elevation 406.0 ft, which is 6.0 ft below the spillway crest. Therefore, total freeboard under the DSOD restriction is 12 ft.

1.3 Spillway

Located on the right abutment, the spillway consists of an AC lined approach section, an ungated ogee weir, and a concrete lined side channel. The open concrete lined trapezoidal channel has a 15-foot-wide bottom with 1H:1V side slopes. The spillway channel conveys the water to a stilling basin at the bottom of the spillway chute which then flows into an unlined spillway channel. As noted above the spillway crest is at Elevation 412.0 ft (NGVD 29), which provides 6 ft of freeboard without the restriction.

1.4 Outlet Works

The outlet works, located near the left abutment, consist of an inclined intake pipe supported on the upstream face of the dam with four intake valves (identified as "Main, Middle, Top, and Bottom") at various elevations. The inlet valves are manually operated by the hand wheel controls located at the upstream edge of the crest of the dam. The intake pipe connects to a 24-inch-diameter steel outlet pipe near the upstream toe. The outlet pipe extends approximately 460 ft under the left portion of the dam to a 24-inch-diameter gate valve located in the Outlet Meter Vault near the downstream toe of the dam. Adjacent to the access road and approximately 15 ft downstream of the Outlet Meter Vault is the Outlet Valve Vault where the 24-inch-diameter line has a 24-inch-diameter butterfly valve that serves as an emergency blowoff valve (Figure 1).

The District provided a Reservoir Dam Valve Exercising summary table which notes April 27, 2021, as the date the valves were exercised during 2021. The table is provided in the Appendix of this report.

2.0 Instrumentation Measurements

2.1 General

There are 16 piezometers, eight seepage subdrains, and seven survey monuments that are being monitored at Rattlesnake Canyon Dam. The piezometer count includes Observation Well VBW/OW-3 which was discontinued in August 2016 due to adjacent construction next to the spillway, but the District resumed readings of this observation well in June 2018.

District personnel measure the water levels in the piezometer, observation wells, and reservoir, and seepage flow rates from the eight subdrains monthly and immediately following significant seismic events. The survey monuments are surveyed annually by a licensed surveyor under contract with the District. Precipitation is measured at an on-site rain gage.

Figure 1 is a Site and Instrumentation Plan showing the layout of the dam and appurtenances, as well as the locations of the piezometers, seepage collection subdrains, and survey monuments. The left and right designations are as viewed looking downstream.

Throughout this report, instrumentation measurements and readings that remained within historical limits and followed historical trends are considered normal. Historical limit is classified as the range between maximum and minimum water levels within the past ten years.

Based on the ten-year historical data from January 2011 through December 2021, the reservoir water surface elevation varied from a minimum Elevation of 358.7 ft to a maximum Elevation of 403 ft. During the review period (2021), the reservoir water surface elevation varied from a minimum Elevation of 381 ft to a maximum Elevation of 394.8 ft (17.2 ft below the spillway). The reservoir elevations that were read on the same dates as the instrumentation are shown in Tables 3 and 4. The reservoir water surface elevations during the 2021 review period remained within historical limits.

2.2 Piezometers

There are 16 open-well piezometers currently being monitored at Rattlesnake Canyon Dam (P-1A, P-2, P-3A, P-30B, P-35A/B/C, P-52, P-61, P-62, P-63, P-64, P-65, P-66, P-67, and VBW/OW-3). An open-well piezometer is a small-diameter (~2-inches in diameter) well used mainly to measure water levels. It is typically installed as a casing in a vertical borehole and has a discrete perforated zone near its bottom to enable monitoring of changes in groundwater levels within that zone. More than one piezometer can be installed within a single, larger-diameter (~4-inches in diameter) outer well casing. These groups of piezometers are often referred to as multi-stage or nested piezometers. At Rattlesnake Canyon Dam, currently Piezometers P-30A & B and

P-35A, B & C are nested, each having two or three piezometers in them, designated as A, B, or C. Piezometers P-1A & B are also nested, but Piezometer P-1B has been abandoned. The tip of each piezometer is generally placed at its own discrete depth range within the outer well casing. The outer well casing is perforated along the vertical zones corresponding to the depths of the piezometer tips.

Table 2 lists information about each piezometer and observation well indicating whether they are operational or abandoned. The location of each piezometer and observation well is shown on Figure 1. Table 3 provides the reservoir water surface elevation and piezometer water levels since January 2007. Figures 3 through 7 are graphical presentations of piezometer water levels and reservoir water surface elevations during the two-year period from January 2020 through December 2021. Figures 8 through 12 are graphical presentations that cover a historical period from January 2011 through December 2021.

Presented below for each piezometer is a summary of the water level measurements during 2021 and a discussion of the historical trends and changes that were noted in the reported measurements.

Table 1 provides the ranges between maximum and minimum water levels in each piezometer based on trends from the ten-year historical data from January 2011 through December 2021 and the ranges between maximum and minimum water levels during the 2021 review period. Outlier readings with isolated spikes or drops were not considered reliable (erroneous reading) and were not included in the maximum and minimum water level range.

Table 1. Piezometers – Maximum and Minimum Water Level Ranges

Piezometer	Last 10-year Maximum and Minimum Range (ft)	2021 Review Period Maximum and Minimum Range (ft)	Comment
P-1A	5.3	0.3	Reading on 8/30/2017 omitted due to isolated spike. Water level returned back to trend and historic range values.
P-2	N/A	N/A	Considered dry and could have some blockage.
P-3A	9.3	5.2	
P-30A	N/A	N/A	Abandoned
P-30B	3.7	1.9	Readings before the 2019 unblocking were omitted.
P-35A	1.0	0.3	Piezometer is dry at elevation 357.3 ft.
P-35B	8.5	4.6	Reading on 2/25/2021 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-35C	3.6	0.9	Piezometer is dry at elevation 343.2 ft.
P-52	21.6	10.9	Reading on 5/27/2020 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-61	10.8	4.7	
P-62	21.7	8.2	Reading on 3/27/2019 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-63	9.8	0.9	Readings before 2/21/2018 omitted due to 17.1 ft drop. Water levels have been gradually increasing and stabilizing.
P-64	9.4	5.2	Reading on 4/23/2020 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-65	10.6	3.1	Reading on 12/18/2019 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-66	7.4	4.3	Reading on 3/24/2020 omitted due to isolated drop. Water level returned back to trend and historic range values.
P-67	6.4	3.2	Reading on 3/24/2020 omitted due to isolated drop. Water level returned back to trend and historic range values.
VBW/OW-3	14.7	0.4	Reading on 11/22/2011 omitted due to isolated drop. Water level returned back to trend and historic range values.

Piezometer P-1A is located on the crest of the dam, near the maximum section of the dam. The tip of Piezometer P-1A is located near the underlying bedrock below the dam, and measures water surface levels in the alluvium. The length of the piezometer was extended in January 2005 by about two ft. The water levels observed in Piezometer P-1A during 2021 were within historical levels (Figure 4). The water level in Piezometer P-1A has gradually dropped by approximately 5 ft over the last 10 years due to the reservoir level now being operated 5 to 10 ft lower than its 2011 levels, see Figure 9.

Piezometer P-2 is located on the crest of the dam, near the maximum section of the dam and has its tip located in the upper embankment fill noted at El 363.4. The piezometer was cleaned in 2015 but levels returned to the same levels prior to cleaning, see Figure 9. In 2021, Piezometer P-2 levels did not have any significant changes. Based on prior measurement notes, see Table 3, P-2 is considered dry but could have some blockage at approximately El 403 (Figure 4). A resurvey of the piezometer's elevations (top and tip) and examination of any blockage is recommended. Piezometer P-3A is located on the downstream bench at El 385 ft and its tip is located in the foundation bedrock. The piezometer was cleaned in 2008 and again in 2015. Piezometer P-3A tracked the reservoir level in 2021. Water levels recorded in Piezometer P-3A during the report period were within historical limits (Figure 10).

Piezometer P-30A is located on the crest of the dam and its tip located within the embankment material at El 371.7. Several attempts were made to clean blockage from this piezometer in 2008 and the District confirmed in 2015 that the standpipe is blocked at a shallow depth. In April 2016, AECOM recommended Piezometer P-30A be abandoned due to long-term blockage. GENTERRA previously recommended another attempt to clear the blockage in Piezometer P-30A before deciding to abandon it altogether. GEI concurs it should be abandoned due to its blockage at a shallow depth and having other functional piezometers in the vicinity and along the maximum section of the dam.

Piezometer P-30B is located on the crest of the dam and its tip is located within the embankment material at El 337.1. The piezometer was cleaned in 2008 which successfully unblocked it. In July 2015, the piezometer was cleaned again. Piezometer P-30B responded to the reservoir level changes in 2021 (Figure 5). During the inspection and assessment, GEI verified the water level in piezometer P-30B is similar with past readings. Water levels recorded in Piezometer P-30B during the report period were within historical limits since the piezometer was cleaned in 2015 and unblocked during April 2019 (Figure 10).

Piezometers P-35A, P-35B, and P-35C are located on the downstream bench at Elevation 385 ft. Piezometer P-35A measures water levels in the embankment material downstream of and above the inclined chimney drain. The water levels did not fluctuate much throughout 2021 and remained generally “dry”, registering only 0.3 ft of water depth at Elevation 357.6 ft. Piezometers P-35B and P-35C are located in the sand drain and chimney drain respectively. Both showed minor fluctuations throughout the review period responding to reservoir level changes. For Piezometer P-35B, the range between maximum (340 ft) and minimum (335.3 ft) levels was 4.7 ft. The exception was on Feb. 25, 2021, where the reading in P-35B was recorded approximately 24 ft below the previous level but returned to historic levels for the rest of the year. GEI believes this drop in reading is due to the significant drop in reservoir level the second half of 2020 and P-35B having a lag response. The water levels observed in Piezometers P-35A, B, and C during the 2021 review period were within historical levels (Figure 8).

Piezometer P-52 is located on the crest of the dam with its tip in the foundation bedrock near the right abutment. The District cleaned this piezometer in 2008 and succeeded in unblocking the piezometer to a depth of 58.5 ft. Piezometer P-52 tracked the reservoir level closely in 2021 (Figure 7). Water levels recorded in Piezometer P-52 during the 2021 report period were within historical limits (Figure 12).

Piezometer P-61 is located near the downstream toe of the dam at the contact with the left abutment, with its tip in the foundation bedrock. Piezometer P-61 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-61 tracked the reservoir level slightly in 2021 (Figure 7). Water levels recorded in Piezometer P-61 during the 2021 report period were within historical limits (Figure 12).

Piezometer P-62 is located in the right abutment stability berm with its tip in the foundation bedrock. Piezometer P-62 tracked the reservoir level closely in 2021 (Figure 7). Water levels recorded in Piezometer P-62 during the 2021 report period were within historical limits (Figure 12).

Piezometer P-63 is located on the crest of the dam with its tip in the left abutment bedrock at El 335. The piezometer was cleaned in 2008 and again in 2015 but the water level readings did not show any response as a result of the cleaning. In April 2016, AECOM recommended that Piezometer P-63 be abandoned due to long-term blockage. In November 2018, GENTERRA recommended a maintenance cleaning to further evaluate the condition of Piezometer P-63. GENTERRA also recommended the elevation of top of casing be surveyed and to measure the depth to the bottom of piezometer periodically to verify that the casing was not blocked, (Genterra, 2018). The water level of Piezometer P-63 did drop by about 17 ft following a 25-ft drop in the reservoir water level during February 2018. Water levels recorded in Piezometer P-63 during the 2021 report period stabilized at about El 362 with the reservoir level averaging near El 386 versus a reservoir level near El 400 in prior years (Figure 12). Continue monthly monitoring of this piezometer.

Piezometer P-64 is located on the downstream bench at Elevation 385 ft with its tip in foundation alluvium at El 302. Piezometer P-64 was installed in late 2004 and readings began on January 18, 2005. Piezometer water levels continue to be responsive to reservoir water level changes. Piezometer P-64 tracked the reservoir levels in 2021 (Figure 4). Water levels recorded in Piezometer P-64 during the 2021 report period were within historical limits (Figure 9).

Piezometer P-65 is located in the southern portion of the right abutment stability berm, to the south of P-62 and further away from the reservoir. Piezometer P-65 was installed in late 2004 and readings began on January 18, 2005. P-65 tracked and was responsive to the reservoir levels changes in 2021 (Figure 7). Water levels recorded in Piezometer P-65 during the 2021 report period were within historical limits (Figure 12).

Piezometer P-66 is located at the downstream toe of the dam with its tip in the foundation bedrock. Piezometer P-66 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-66 tracked and was responsive to the reservoir levels changes in 2021 (Figure 4). Water levels recorded in Piezometer P-66 during the 2021 report period were within historical limits and responsive to reservoir level changes. (Figure 9).

Piezometer P-67 is located at the downstream toe of the dam with its tip in the foundation. Piezometer P-67 was installed in late 2004 and readings began on January 18, 2005. Piezometer P-67 was responsive to reservoir level changes in 2021 (Figure 3). Water levels recorded in Piezometer P-67 during the 2021 report period were within historical limits and responsive to reservoir level changes (Figure 8).

Observation Wells VBW/OW-1, VBW/OW-2, and VBW/OW-3 (formerly identified as OW97-3, OW97-2, and OW97-1, respectively) are located to the north of the spillway. OW-1 and OW-2 were removed in August 2016 due to grading on a residential development in the area where the wells were located. Readings were discontinued at OW-3 in August 2016 due to the construction and were resumed on June 28, 2018. The bottom of OW-3 is noted at El 386.27. Based on the location of OW-3 (right abutment/north of the spillway), its bottom tip El 386.27, and the reservoir level being mostly below El 386.27 during 2021 (one reading on 3/23/21 was above), Observation Well OW-3 is considered dry. Measured levels in Observation Well OW-3 during the 2021 report period are considered within historical levels (Figure 11).

Based on GEI's review of the piezometer data, there are no indications of any dam safety concerns at the dam embankment, abutments, right abutment stability berm, or foundation. It is recommended that for those piezometers showing erratic readings in the future the District have the top elevations of the casings re-surveyed and re-measure the depth to the bottom of each piezometer to verify that the piezometers are not blocked to their as-built depth. GEI will continue to assist the District and closely monitor the water levels in each piezometer.

2.3 Seepage Flows

Several modifications to the seepage monitoring system have occurred over the years. Seepage flow rates from seven subdrains are currently being measured monthly at eight flow points by the District. Six subdrains (2, 3, 4, 5, 8 and 11) are monitored at six flow points (FP-2, FP-3, FP-4, FP-5, FP-8 and FP-11), which are assigned the same identification number as the drain. These six flow points are located downstream of the dam in the Seepage Vault shown on Figure 1. The remaining two flow points, FP-1 North and FP-1 South (or FP-1N and FP-1S), are read in Manhole No. 1, which is located about 600 ft downstream of the Seepage Vault structure.

The previously existing Manholes 2, 3, and 4, and Flow Points FP-9 and FP-10 were removed as part of the alterations to the dam. The existing Seepage Vault structure was constructed to replace the three manholes that were removed.

Flow Points FP-2, FP-3, and FP-4 collect seepage from the chimney drain within the dam. Flow Point FP-5 collects seepage from the Longitudinal Drain along the right portion of the downstream bench, as well as seepage from the Groin Drain along the right abutment contact. Flow Point FP-8 collects seepage from the toe drain (Subdrain 8). Flow Point FP-11 collects seepage from Subdrain 11 in the downstream right abutment contact.

Prior to April 2008, the seepage flow rate measured from Flow Point FP-1 was sometimes recorded as a combined measurement of Flow Points FP-9 and FP-10, and no record was kept of the individual readings. Since April 2008, the measurements of Flow Points FP-9 and FP-10 have been recorded separately as Flow Points FP-1 South and FP-1 North, respectively. Flow Point FP-1 North measures the seepage from the spillway stilling basin in Subdrain 10, and Flow

Point FP-1 South represents the combined seepage from the Seepage Vault, which contains Subdrains 2, 3, 4, 5, 8, and now 11.

Historical seepage flow rates since 2007 at the subdrain flow points are listed in Table 4. Figures 13, 14, and 15 present the 2-year period seepage rates from January 2020 through December 2021, and Figures 16, 17, and 18 present the historical seepage rates since 2011.

The following is the range of minimum and maximum flow rates from each drain based on trends from the ten-year historical data from January 2011 through December 2021:

FP-1 South: 0 to 17.4 gpm

FP-1 North: 0 to 9.3 gpm

FP-2: 0 to 0.34 gpm

FP-3: 0.35 to 1.9 gpm

FP-4: 0.23 to 1.3 gpm

FP-5: 0 to 1.3 gpm

FP-8: 0 to 0.08 gpm

FP-11: dry

The following flow rates ranges presented were recorded at the seepage measuring Flow Points during the 2021 review period:

FP-1 South: 0.99 to 1.43 gpm

FP-1 North: 0 to 1.90 gpm

FP-2: dry

FP-3: 0.63 to 1.08 gpm

FP-4: 0.23 to 0.51 gpm

FP-5: dry

FP-8: dry

FP-11: dry

All seepage flows tracked the reservoir levels closely and were within historical ranges. There was no reported or observed signs of increased turbidity or suspended solids in the subdrain flows. Based on GEI's review of the subdrain data, the seepage flow rates appeared to follow historical rates with no indications of any adverse conditions.

2.4 Movement Surveys

A total of seven survey monuments (A, B, B-1, C, D, E, and E-1) are being surveyed at Rattlesnake Canyon Dam. All seven survey monuments and three benchmarks (BM-1, BM-3 and BM-4) are located on the crest of the dam spanning from left abutment to right abutment (Figure 1).

There were originally four benchmarks, BM-1, BM-2, BM-3, and BM-4. Benchmarks BM-1 and BM-3 are located on the left abutment of the dam. Benchmarks BM-2 and BM-4 were both located on the right abutment of the dam, to the right of the spillway channel. Benchmark BM-2 was destroyed in 1996, and BM-4 was destroyed between 2015 and 2016. BM-4 was re-established by 2018. The re-established BM-4 has been used as the new control point on the right side of the dam to develop the control line for the horizontal surveys since 2018.

Survey monuments A, C, D, and E were initially read on October 19, 1985, Survey Monument B-1 was initially read on October 5, 1990; and Survey Monuments B and E-1 were initially read on May 3, 2001. It is highlighted that crest monuments E and E-1 are within two feet of each other and crest monuments B and B-1 are less than a foot apart.

The survey monuments are surveyed annually by a licensed surveyor under contract with the District. No surveys were conducted in calendar year 2017 and 2021. A survey was performed on April 26, 2022, that has been included into this report. The survey report is provided in the Appendix of this report.

Table 5 presents the horizontal movement of the survey monuments relative to their baseline measurements, and Table 6 presents the cumulative horizontal displacement of the survey monuments. Table 7 presents the elevations of the survey monuments, whereas Table 8 presents the cumulative vertical movement of the survey monuments. Tables 5 through 8 cover a date range from 1985 through 2022. Figures 19 and 20 are graphical presentations of the cumulative horizontal displacement and cumulative vertical movement of the survey monuments since 1985. Initial movement of Monuments B and E do show a trend but in recent years these same monuments have had minor movement of only ¼-inch or less.

The 2021 survey data has been evaluated and found to be within historical limits by GEI. Previous movement trends for B, B-1, E, and E-1 have stabilized since 2019 (Figure 20). The horizontal measured movements during 2022 have been minor at ¼ of an inch or less. Similarly, the vertical movement has also been minor, at less than ¼ of an inch. Based on GEI's review of the historical data, the 2022 horizontal and vertical movement measurements are judged to be minor with no significant changes since 2019. There are no unusual movements or dam safety issues based on the current data.

3.0 Field Evaluations

3.1 Field Evaluation of April 19, 2022

A field evaluation and inspection were performed by Richard Sanchez, Lorena Manriquez and Emerson Revolorio of GEI, Jacob Moeder, Danielle Drake and Casey King of the District on April 19, 2022. The reservoir level was noted at Elevation 390.9 ft. Weather conditions were slightly cloudy and sunny. Photos taken by GEI are included in the Appendix of this report.

3.1.1 Dam

The crest of dam was walked, and the asphalt concrete surface was observed to have no visible signs of dam safety related concerns or instability, see Photos 2-4. The shrinkage-expansion temperature type cracking on the asphalt surfacing is not a problem to the safety of the dam. The upstream slope asphalt concrete lining and unlined areas above the reservoir water level appeared unchanged from previous inspection observations, see Photos 1 and 2. No signs of slope instability were seen. The upstream slope AC-liner also had several long-standing shrinkage-expansion cracks. During the inspection, GEI observed minor vegetation growing on the left upstream groin area, see Photo 1. The downstream embankment slope, and both groin areas were inspected, and no signs of instability or erosion were seen. We did observe rill erosion along the right abutment access road, see Photo 6. The largest rill erosion area was approximately 10-inches wide and 8-inches deep. During the inspection, GEI observed a previously old, excavated area on the downstream slope bench near piezometer 35-A and B, see Photo 7. Based on discussions and inspection observations, this area was excavated for installation of the piezometers at this location. The District stated that this excavated area has existed for a few years and that it has been investigated in the past and was not considered to be an instability issue to the dam. No active rodent activity was seen on the downstream face of the dam. During the inspection, GEI discovered that most of the rodent control feeder boxes had little to no poison. No signs of surficial slope movement or instability were observed on the slopes or abutments of the dam. The downstream slope face had a low height (estimated to average about 6-inches) and uniform native grass cover that helps prevent erosion from rainfall runoff. There were some localized areas with overgrown grass cover, see Photo 4. The downstream toe area of the dam was walked, and no visual signs of slope instability, unusual movement, or erosion were seen. No unusual signs of seepage or wet spots were seen on the downstream face of the dam.

No dam safety related issues or concerns were found during the inspection.

3.1.2 Spillway

The approach and ungated control spillway sections were clear, Photo 8. The open channel spillway was clear, Photo 9. The stilling basin area had minor brush growth, Photo 12. GEI observed a separation between the crest AC pavement and the spillway concrete liner joint, see Photo 9. The District had recently completed repairing localized concrete lining. During the inspection, GEI observed several areas that had been recently repaired. White concrete and grout patches can be seen on Photos 10-12. During the inspection, GEI observed vegetation growing along the north channel wall, see Photo 10. GEI also observed multiple inactive rodent holes near the spillway, see Photo 11. GEI did not find any rodent control feeder boxes along the spillway area. Over all, the District had made good progress to clear overgrown vegetation and repair localized defective concrete in the spillway channel. The spillway was found to be operable to pass spillway flows.

3.1.3 Outlet Works

DSOD requires the outlet and emergency blowoff valves to be exercised periodically. The four upstream outlet gates and controls were not exercised during this inspection. According to the District, the upstream valves were fully exercised on April 27, 2021. It was reported the outlets were fully operational. No deficiencies were seen at the downstream 24-inch blowoff valve and operator at the left downstream toe area of the dam, see Photo 13.

3.1.4 Seepage

Seepage flow rates continue to be monitored and measured monthly by District staff. The downstream seepage vault was inspected, and no unusual conditions or safety deficiencies were found. Small seepage flow observations were estimated as follows: #2 (dry), #3 (0.8 gpm), #4 (0.34 gpm), and others (#11, #5, and #8) were dry, see Photo 14. Total seepage at FP-1 South was estimated at 1.3 gpm and FP-1 North was estimated at 0.82 gpm. The observed seepage conditions were within past seepage flow levels and observations. No signs of sediment were seen on the floor of the seepage vault from above the vault. The District mentioned the seepage vault was cleaned 2 years ago and no sediment was collected.

4.0 Conclusions and Recommendations

4.1 Conclusions

- 1) Based on the review of available instrumentation data and the field inspection, the dam does not appear to have signs of structural deficiencies, seepage, and instability.
- 2) Overall piezometer water levels during the report period are within historical limits.
- 3) Seepage flow rates during this review period were within historical limits and trends.
- 4) Horizontal and vertical movement were found to be minimal and within historical values and trends since 2019.
- 5) The AC pavement on the dam crest has minor temperature related cracking that is not a problem to the safety of the dam.
- 6) The upstream slope AC-liner had long-standing shrinkage-expansion cracks.
- 7) Minor vegetation was observed on the left upstream groin area.
- 8) An old excavation on the downstream slope bench near piezometers 35-A and B was not a problem to the safety of the dam.
- 9) The District needs to continue with rodent abatement on the downstream face of the dam.
- 10) There was a lack of rodent control feeder boxes along the spillway area.
- 11) GEI observed a minor separation between the crest AC pavement and the spillway concrete liner joint.
- 12) Minor vegetation was observed along the spillway channel wall.
- 13) Brush has grown in the stilling basin since the last inspection.
- 14) The District has made repairs in localized areas along the spillway channel.

- 15) Based on visual observations and reports during the inspection the outlet facilities were functional. The upstream outlet gates and operators were not fully cycled during this inspection but had been cycled on April 27, 2021. The downstream 24-inch blowoff valve and operator were observed to be in good condition.
- 16) The District had removed overgrown vegetation in the spillway channel.

4.2 Recommendations

- 1) Overgrown vegetation in the upstream left groin area is encroaching on the dam and needs to be cut prior to the next inspection.
- 2) Surveyor needs to provide reservoir elevation, reservoir water temperature, air temperature and weather conditions for each survey.
- 3) GEI recommends re-surveying the top elevations of the casings and re-measure the depth to the bottom of piezometers P-2 and P-63 to verify they are not blocked. Piezometers shall be cleaned out if blocked. Piezometers shall continue to be monitored monthly.
- 4) GEI recommends abandoning piezometer P-30A.
- 5) Hairline cracks on the AC pavement on the dam crest need be monitored and filled with a liquid AC paving repair product when opened.
- 6) The upstream slope AC-liner cracks need to be monitored and filled with a liquid AC paving repair product when opened.
- 7) The District needs to fill the rodent control feeder boxes with poison and backfill any new rodent holes observed along the dam. The District needs to add rodent control feeder boxes near the spillway area.
- 8) The District needs to cut the vegetation growing along the spillway channel walls.
- 9) The District shall continue monitoring brush growth at the spillway stilling basin and cut when appropriate to avoid any damage to spillway concrete or impacts to spillway operability.
- 10) The separation between the crest AC pavement and the spillway concrete liner joint needs to be filled with a flexible sealant.
- 11) During normal inspection and operation of the dam and its appurtenances, the District personnel shall continue to observe the condition of the dam and appurtenances, looking for any signs of distress or movement, increased seepage, or other unusual conditions, and verifying that the critical facilities are functional. Any unusual observations shall be reported immediately to the engineer.
- 12) GEI recommends an inspection and evaluation of the dam immediately after any earthquake with a Magnitude of 4.0 or greater within a 50-mile radius of the dam.

Rattlesnake Canyon Dam Action Item Summary

Item	Location	Maintenance	Measures
Rodent control feeder boxes	Throughout dam	Lack of poison in rodent control feeder boxes	Place poison in all the rodent control feeder boxes
Rodent control feeder boxes	Along spillway	Lack of rodent control feeder boxes	Add rodent control feeder boxes
Movement Surveys	Throughout dam	Need additional information	Provide reservoir elevation, reservoir water temperature, air temperature and weather conditions for each survey
AC pavement	Dam crest	Shrinkage-expansion temperature cracking	Monitor cracks and fill in cracks with a liquid AC Paving repair product when opened
AC Liner	Upstream face	Shrinkage-expansion temperature cracking	Monitor cracks and fill in cracks with a liquid AC Paving repair product when opened
Upstream left groin	Upstream side where dam meets left abutment	Overgrown vegetation	Remove overgrown vegetation
AC pavement and spillway concrete liner	Joint between the right end of crest AC pavement and spillway concrete liner	Separation between the crest AC pavement and the spillway concrete liner	Fill separation with a flexible sealant
Piezometers	P-2 and P-63	Providing erratic readings	Re-survey the top of casing elevations and re-measure the depth to the bottom. Clean out piezometer if blocked. Monitor monthly.
Piezometer	P-30A	Providing erratic readings	Abandon
Stilling basin	Spillway stilling basin	Brush growth	Cut and maintain
Spillway wall	Right spillway wall	Vegetation growth along wall	Cut vegetation growing along spillway wall

5.0 Limitations

This report presents observations made, conclusions drawn, and opinions formed from (1) a visual inspection of the Rattlesnake Canyon Dam and its appurtenant structures, and (2) a review of instrumentation data, including piezometer levels, survey data and seepage rates, collected by the District and reported since 2007. The purpose of the inspection and review is to assess the safety of the structure for continuing operation. Reuse of this report for any other purposes, in part or in whole, is at the sole risk of the user.

In the context intended above, the term "safety" is interpreted to be restricted specifically to major structural and control features of the project in regard to their adequacy against possible catastrophic failure due to natural or operational events. No consideration is given herein to those public safety aspects related to voluntary occupancy or use of project features in such manner as to result in personal mishaps.

The undersigned who performed the inspection and reviewed the instrumentation data and prepared this report, desire that it be clearly understood that the conclusions regarding the condition and safety of the dam and related facilities are not guaranteed but do represent our best judgment. Inevitably, such judgment must be recognized to be affected to an uncertain degree by the practical limitations that affect all dam evaluations, relative principally to approximate knowledge of the existing properties of the structures and their foundations, the potential for storm or seismic damage, and the uncertainties that are known to exist in estimating margins of report represents the results of our surveillance program for Rattlesnake Canyon Dam, covering safety.

The conclusions and professional opinions presented herein were developed by GEI Consultants, Inc. for the Irvine Ranch Water District in accordance with generally accepted engineering principles and practices. We make no other warranty, either express or implied.

6.0 References

DSOD (California Department of Water Resources, Division of Safety of Dams), Inspection of Dam and Reservoir in Certified Status October 20, 2020.

Genterra, 2018, Annual Surveillance Report January 2017 through December 2017 Rattlesnake Canyon Dam DSOD Dam No. 1029-003, Irvine, CA, by Genterra Consultants Inc., November 26, 2018.

Tables

**TABLE 2
RATTLESNAKE CANYON DAM
DETAILS FOR PIEZOMETERS, OBSERVATION WELLS, AND SEEPAGE FLOW POINTS**

ID	Location	Original Reference Data			Current (2005) Reference Data			Material at Tip (if known)	Installation or First Reading	Final Reading
		Top Elev. (ft)	Tip Elev. (ft)	Depth (ft)	Top Elev. (ft)	Tip Elev. (ft)	Depth (ft)			
Active Operating Piezometers										
P-1A	Dam Crest	418.50	287.40	131.10	420.43	287.40	133.00	Foundation Alluvium	4/1965	--
P-2	Dam Crest	418.70	363.40	55.30	420.62	363.40	57.20	Embankment	4/1965	--
P-3A	Downstream Bench Elev. 385	385.40	303.70	81.70	385.40	303.70	81.70	Foundation Bedrock	4/1965	--
P-30A	Dam Crest	417.90	371.70	46.20	420.81	371.70	49.10	Embankment	1966	--
P-30B	Dam Crest	417.90	337.10	80.80	420.81	337.1	83.70	Embankment	1966	--
P-35A	Downstream Slope just above Bench Elev. 385	385.30	357.30	28.00	388.73	357.30	31.40	Embankment D/S of and above Chimney Drain	1966	--
P-35B	Downstream Slope just above Bench Elev. 385	385.50	313.40	72.10	388.45	313.40	75.10	Chimney Drain	1966	--
P-35C	Downstream Slope just above Bench Elev. 385	385.30	343.20	42.10	388.34	343.20	45.10	Chimney Drain	1966	--
P-52	Dam Crest near Right Abutment	418.60	361.20	57.40	421.03	361.20	59.80	Foundation Bedrock	1976	--
P-61	Downstream Left Groin	354.00	311.00	43.00	357.01	311.00	46.00	-Data Not Provided-	9/28/2004	--
P-62	On Right Abutment Stability Berm	419.00	365.50	53.50	412.03	365.50	46.50	-Data Not Provided-	1/18/2005	--
P-63	Dam Crest at Left Abutment	418.00	335.00	83.00	422.08	335.00	87.10	Abutment Bedrock	9/28/2004	--
P-64	Downstream Bench Elev. 385	385.00	302.00	83.00	388.00	302.00	86.00	Foundation Alluvium	9/28/2004	--
P-65	On Right Abutment Stability Berm	370.00	325.50	44.50	374.72	325.50	49.20	-Data Not Provided-	1/18/2005	--
P-66	Downstream near Toe of Dam	352.00	301.00	51.00	359.31	301.00	58.30	Foundation Bedrock	9/28/2004	--
P-67	Downstream near Toe of Dam	352.00	282.50	69.50	355.04	282.50	72.50	Foundation Bedrock	1/18/2005	--
OW-3	Right Abutment just above Spillway Inlet	--	--	--	418.87	386.27	32.60	Abutment Bedrock	3/29/2001	--
Abandoned Piezometers										
P-1B	Dam Crest	385.4	--	--	--	--	--	Foundation Alluvium	4/1965	12/1969
P-3B	Downstream Bench Elev. 385	385.4	345.2	40.2	--	--	--	Data Not Provided	4/1965	3/30/2004
P-4	Downstream Bench Elev. 385	385.3	286.8	98.5	--	--	--	Foundation Bedrock	4/1965	3/30/2004
P-5	Downstream Bench Elev. 385	385.2	345.2	40.0	--	--	--	Embankment	4/1965	3/30/2004
P-6A	Downstream near Toe of Dam	350.6	333.3	17.3	--	--	--	Foundation Alluvium	4/1965	3/30/2004
P-6B	Downstream near Toe of Dam	350.6	292	58.6	--	--	--	Foundation Bedrock	4/1965	3/30/2004
P-7A	Downstream Toe of Dam	343.5	334.6	8.9	--	--	--	-Data Not Provided-	9/1965	Unknown
P-7B	Downstream Toe of Dam	343.5	283.2	60.3	--	--	--	-Data Not Provided-	9/1965	Unknown
P-8A	Downstream Toe of Dam	340.6	295.9	44.7	--	--	--	Alluvium	9/1965	3/30/2004
P-8B	Downstream Toe of Dam	340.5	325.2	15.3	--	--	--	Alluvium	9/1965	3/30/2004
P-9A	Downstream Toe of Dam	341.4	318.8	22.6	--	--	--	Alluvium	9/1965	3/30/2004
P-9B	Downstream Toe of Dam	341.4	331.1	10.3	--	--	--	Alluvium	9/1965	3/30/2004
P-21	Downstream near Toe of Dam	354.3	328.7	25.6	--	--	--	Abutment Bedrock	6/16/1967	3/30/2004
P-22	Downstream near Toe of Dam	354.2	328.9	25.3	--	--	--	-Data Not Provided-	6/16/1967	Unknown
P-23	Downstream Bench Elev. 385	385.8	357.9	27.9	--	--	--	Abutment Bedrock	6/16/1967	3/30/2004
P-27	Right Abutment Stability Berm at Bench Elev. 385	386.7	367.1	19.6	--	--	--	Abutment Sand	6/16/1967	3/30/2004
P-29	Right Abutment Stability Berm above Bench Elev. 385	397.7	382.8	14.9	--	--	--	Abutment Sand	6/16/1967	3/30/2004
P-31A	Dam Crest near Right Abutment	418.3	390	28.3	--	--	--	Embankment	1966	3/30/2004
P-31B	Dam Crest near Right Abutment	418.3	364.7	53.6	--	--	--	Embankment	1966	3/30/2004
P-32A	Dam Crest near Right Abutment	417.8	397.7	20.1	--	--	--	Embankment	1966	3/30/2004
P-32B	Dam Crest near Right Abutment	417.8	380.2	37.6	--	--	--	Foundation Bedrock	1966	3/30/2004
P-33	Dam Crest near Left Abutment	417.8	390	27.8	--	--	--	Abutment Bedrock	1966	3/30/2004
P-34	Right Abutment in line with crest	--	--	--	--	--	--	Abutment Bedrock	1966	3/30/2004
P-36A	Downstream near Toe of Dam	351	338.3	12.7	--	--	--	Embankment	1966	3/30/2004
P-36B	Downstream near Toe of Dam	351	307.3	43.7	--	--	--	Foundation Alluvium	1966	3/30/2004
P-37	Right Abutment (downstream)	370.8	346.9	23.9	--	--	--	Abutment	1966 (?)	Unknown
P-38	Downstream of Dam	328.5	292.9	35.6	--	--	--	-Data Not Provided-	1966 (?)	3/30/2004
P-42	Downstream of Dam	341.7	321.9	19.8	--	--	--	-Data Not Provided-	1966	3/30/2004
P-51	Dam Crest	417.9	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-53A	Downstream Bench Elev. 385	384.7	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-53B	Downstream Bench Elev. 385	384.9	--	--	--	--	--	-Data Not Provided-	1976	3/30/2004
P-54	Right Abutment Stability Berm above Bench Elev. 385	390.4	--	--	--	--	--	Abutment Bedrock	1976	3/30/2004
P-55	Right Abutment Stability Berm below Bench Elev. 385	356	--	--	--	--	--	Abutment Bedrock	1976	3/30/2004
P-82	Right Abutment near Spillway Inlet	442	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-83	Unknown	426	--	--	--	--	--	-Data Not Provided-	1/31/1994	3/30/2004
P-89	Right Abutment (North of Spillway Chute)	431	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-91	Right Abutment just below Dam Crest	439	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
P-92	Right Abutment above Bench Elev. 385	400	--	--	--	--	--	-Data Not Provided-	12/28/1993	3/30/2004
OW-1	Right Abutment just above Spillway Inlet	--	--	--	468.16	433.46	34.7	Abutment Bedrock	3/29/2001	7/26/2016
OW-2	Right Abutment just above Spillway Inlet	--	--	--	442.91	407.91	35	Abutment Bedrock	3/29/2001	7/26/2016
Flow Points										
FP-1	Combined discharge from Subdrains 9 & 10	--	--	--	--	--	--	--	--	3/27/2008
FP-2	Right part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-3	Center part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-4	Left part of Chimney Drain	--	--	--	--	--	--	--	1960	--
FP-5	Right Abutment contact	--	--	--	--	--	--	--	1969	--
FP-8	Downstream Toe of Dam	--	--	--	--	--	--	--	1966	--
FP-9	Carries discharge from Subdrains 2, 3, 4, 5 & 8 (replaced by FP--1S)	--	--	--	--	--	--	--	1966	4/28/2008
FP-10	Stilling Basin (replaced by FP--1N)	--	--	--	--	--	--	--	1966	4/28/2008
FP-11	Right Abutment Stability Berm	--	--	--	--	--	--	--	1/6/2005	--
FP-1N	Stilling Basin (former FP--10)	--	--	--	--	--	--	--	4/28/2008	--
FP-1S	Carries discharge from Subdrains 2, 3, 4, 5, 8 & 11 (former FP--9)	--	--	--	--	--	--	--	4/28/2008	--

Note:

1. Piezometer data based on NGVD 29 datum.

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		61.6	358.8		15.9	404.7	
2/28/2007	380.90		63.3	357.1		16.0	404.6	
3/29/2007	397.00		61.7	358.7		15.9	404.7	
4/27/2007	405.60		61.4	359.0		16.0	404.6	
5/24/2007	404.40		61.4	359.0		15.9	404.7	
6/28/2007	396.90		61.9	358.5		16.1	404.5	
7/31/2007	392.60		61.5	358.9		16.0	404.6	
8/29/2007	388.60		61.3	359.1		16.0	404.6	
9/2/2007	387.40		61.4	359.0		16.0	404.6	
9/26/2007	387.90		61.8	358.6		16.0	404.6	
10/25/2007	382.00		61.8	358.6		16.1	404.5	
11/27/2007	380.30		61.4	359.0		16.0	404.6	
12/27/2007	381.40		61.7	358.7		16.0	404.6	
1/31/2008	381.20		61.5	359.0	Dry	16.0	404.6	Dry
2/28/2008	393.10		61.8	358.6	Dry	15.6	405.0	
3/27/2008	387.90		31.2	389.2	Cleaning	17.4	403.2	
4/28/2008	404.70		34.2	386.2	Blocked	17.4	403.2	
5/28/2008	404.00		36.6	383.8	Blocked	17.4	403.2	Dry
6/25/2008	400.20		38.2	382.2	Blocked	17.4	403.2	
7/29/2008	398.70		39.4	381.0	Blocked	17.4	403.2	
7/30/2008	398.70	0.00	39.5	380.9	Blocked	17.5	403.1	
8/29/2008	395.00	0.00	7.7	412.7	Cleaning	17.6	403.0	Dry
9/25/2008	391.70	0.00	15.6	404.8		17.7	402.9	Dry
10/28/2008	384.05	0.00	23.0	397.4		17.7	403.0	
11/26/2008	391.10	1.94	28.2	392.2		17.7	402.9	
12/31/2008	397.90	3.20	32.2	388.2		17.7	402.9	
1/29/2009	393.40	0.34	34.8	385.6		16.8	403.8	
2/25/2009	398.60	3.91	36.8	383.6		17.7	402.9	
3/31/2009	393.40	0.16	38.6	381.8		17.6	403.0	
4/28/2009	400.70	0.10	40.1	380.3		17.7	402.9	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	40.8	379.6		17.7	402.9	
5/27/2009	400.10	0.00	61.6	358.8		17.6	403.0	Dry
6/29/2009	403.00	0.15	61.0	359.4		17.7	402.9	
7/28/2009	396.53	0.00	60.9	359.5		17.7	402.9	
8/25/2009	396.60	0.00	60.8	359.6		17.6	403.0	
9/30/2009	393.10	0.00	61.1	359.3		17.6	403.0	
10/28/2009	401.60	0.42	61.0	359.4		17.7	402.9	
11/30/2009	402.50	0.00	60.9	359.5		17.7	402.9	
12/29/2009	399.90	2.80	60.8	359.6		17.7	402.9	
1/26/2010	401.10	6.75	60.8	359.6		17.6	403.0	
2/23/2010	402.50	2.66	60.8	359.6		17.7	402.9	Dry
3/30/2010	400.00	1.25	60.6	359.8		17.7	402.9	
4/4/2010	399.60		60.6	359.8		17.7	402.9	Dry
4/27/2010	403.80	1.32	60.6	359.8		17.6	403.0	
5/26/2010	403.60	0.03	60.5	359.9		17.6	403.0	Dry
6/29/2010	397.70	0.00	59.4	361.0		17.6	403.0	
7/27/2010	396.30	0.00	60.4	360.0		17.6	403.0	
8/26/2010	390.70	0.00	60.6	359.8		17.4	403.2	
9/28/2010	390.30	0.00	60.6	359.8		17.6	403.0	
10/26/2010	403.20	1.56	60.6	359.8		17.2	403.4	
11/30/2010	397.10	1.34	60.6	359.8		17.6	403.0	
12/28/2010	401.40	9.03	60.6	359.8		17.7	402.9	Dry
1/27/2011	393.80	1.10	60.6	359.8		17.6	403.0	Dry
2/23/2011	391.70	1.17	60.6	359.8		17.7	402.9	
3/29/2011	403.00	3.10	60.7	359.7		17.5	403.1	
4/27/2011	401.20	0.33	60.7	359.8		17.6	403.0	
5/26/2011	399.50	0.48	60.6	359.8		17.8	402.8	
6/28/2011	391.00	0.02	60.6	359.8		17.6	403.0	
7/26/2011	384.00	0.00	60.8	359.6		17.5	403.1	
8/24/2011	382.80	0.00	60.9	359.5		17.5	403.1	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	61.2	359.2		17.6	403.0	
10/26/2011	383.90	0.98	61.2	359.2		17.7	402.9	
11/22/2011	389.80	1.46	61.4	359.0		17.6	403.0	
12/28/2011	382.30	0.35	61.5	358.9		17.7	402.9	
1/25/2012	387.50	1.17	61.7	358.7		17.7	402.9	
2/28/2012	381.10	0.79	61.8	358.6		17.6	403.0	
3/27/2012	387.70	1.61	62.0	358.4		17.6	403.0	
4/23/2012	392.30	1.51	62.0	358.4		17.7	403.0	
5/25/2012	388.30	0.06	62.3	358.1		17.7	402.9	
6/13/2012	385.10	0.06	62.1	358.3		17.6	403.0	
6/26/2012	386.90	0.00	62.2	358.2		17.6	403.0	
7/24/2012	378.00	0.10	62.3	358.1		17.6	403.0	
8/8/2012	382.90	0.10	62.4	358.0		17.6	403.0	
8/29/2012	382.70	0.00	62.5	357.9		17.6	403.0	
8/29/2012	382.70	0.00	62.5	357.9		17.6	403.0	
9/25/2012	381.90	0.00	62.7	357.7		17.6	403.0	
10/24/2012	384.40	0.08	62.8	357.6		17.7	402.9	
11/27/2012	389.60	0.86	63.1	357.3		17.6	403.0	
12/18/2012	394.70	1.96	63.1	357.3		17.6	403.0	
1/23/2013	393.00	1.53	63.1	357.3		17.7	402.9	
2/26/2013	391.50	0.49	63.1	357.3		17.7	402.9	
3/26/2013	394.40	1.00	63.1	357.3		17.6	403.0	
4/25/2013	391.00	0.01	63.0	357.4		17.7	402.9	
5/22/2013	392.00	0.00	63.2	357.2		17.7	402.9	
6/25/2013	380.60	0.00	63.1	357.3		17.6	403.0	
7/23/2013	380.20	0.00	63.2	357.2		17.7	402.9	Dry
8/21/2013	379.60	0.00	63.4	357.0		17.6	403.0	Wet
9/25/2013	382.20	0.00	63.5	356.9		17.6	403.0	Dry
10/29/2013	382.00	0.00	63.7	356.7		17.7	402.9	Wet
11/26/2013	390.10	0.44	63.7	356.7		17.6	403.0	Wet

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	63.8	356.6		17.6	403.0	Wet
1/28/2014	392.30	0.00	63.8	356.6		17.6	403.0	Wet
2/26/2014	389.90	0.72	63.7	356.7		17.2	403.4	Wet
3/26/2014	387.20		63.8	356.6		17.6	403.0	Wet
3/28/2014	387.20	1.78	63.7	356.7		17.7	402.9	Wet
4/23/2014	393.00	0.34	63.9	356.5		17.6	403.0	Dry
5/28/2014	387.50	0.00	63.9	356.5		17.6	403.0	Dry
6/25/2014	388.70	0.00	63.9	356.5		17.7	402.9	Wet
7/29/2014	382.80	0.00	64.0	356.4		17.6	403.0	Wet
8/28/2014	386.80	0.04	64.0	356.4		17.6	403.0	Wet
9/24/2014	387.90	0.00	64.1	356.3		17.6	403.0	Wet
10/29/2014	383.90	0.00	64.2	356.2		17.3	403.3	Wet
11/21/2014	388.30	0.35	64.2	356.2		17.6	403.0	Wet
12/22/2014	399.80	4.75	64.2	356.2		17.2	403.4	Wet
1/28/2015	396.90	1.28	64.3	356.1		17.7	402.9	Wet
2/24/2015	392.70	0.34	64.2	356.2		17.6	403.0	Wet
3/31/2015	388.90	0.67	64.1	356.3		17.6	403.0	Wet
4/23/2015	390.30	0.20	64.1	356.3		17.7	402.9	Wet
5/28/2015	400.30	1.87	64.1	356.3		17.6	403.0	Wet
6/24/2015	400.70	0.00	64.0	356.4		17.6	403.0	Wet
7/30/2015	400.20	0.00	64.0	356.4		3.8	416.8	Cleaning
8/25/2015	384.00	0.00	63.0	357.4		5.7	414.9	
9/23/2015	388.60	2.17	64.0	356.4		8.0	412.6	
10/29/2015	387.60	0.16	64.0	356.4		10.4	410.2	
11/25/2015	386.90	0.15	64.1	356.3		12.7	407.9	
12/23/2015	395.90	1.55	64.1	356.3		13.6	407.0	
1/26/2016	401.20	2.86	64.0	356.4		15.0	405.6	
2/24/2016	393.60	0.39	64.0	356.4		15.3	405.3	
3/29/2016	397.10	1.55	63.9	356.5		16.1	404.5	
4/29/2016	391.60	0.04	63.9	356.5		16.5	404.1	

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	63.8	356.6		16.5	404.1	
6/29/2016	392.50	0.00	63.8	356.6		17.0	403.6	
7/26/2016	377.70	0.00	63.8	356.6		17.5	403.1	
8/24/2016	388.10	0.00	63.9	356.5		17.7	402.9	
9/29/2016	388.20	0.00	64.0	356.4		17.7	402.9	
10/26/2016	392.10	0.96	64.0	356.4		17.7	402.9	
11/22/2016	395.70	1.42	64.2	356.2		17.7	402.9	
12/28/2016	400.70	4.11	64.2	356.2		17.8	402.8	
1/26/2017	402.40	6.70	64.0	356.4		17.8	402.8	
2/28/2017	389.60	4.01	63.9	356.5		17.6	403.0	
3/29/2017	391.80	0.14	63.9	356.5		17.6	403.0	
4/26/2017	387.00	0.04	63.9	356.5		17.7	402.9	
5/23/2017	399.40	0.30	63.9	356.5		17.7	402.9	Dry
6/21/2017	392.60	0.00	63.8	356.6		17.7	402.9	Dry
7/26/2017	384.60	0.00	63.8	356.6		17.7	402.9	Dry
8/30/2017	383.00	0.00	54.1	366.3	Erroneous	17.8	402.8	Dry
9/27/2017	382.00	0.00	64.0	356.4		17.7	402.9	
10/27/2017	375.00	0.00	64.1	356.3		17.8	402.8	
11/30/2017	382.80	0.14	64.2	356.2		17.8	402.8	
12/21/2017	380.50	0.00	64.3	356.1		17.7	402.9	
1/24/2018	397.80	1.43	64.3	356.1		17.7	402.9	
2/21/2018	382.40	0.17	64.4	356.0		16.7	403.9	
3/29/2018	392.10	0.00	64.4	356.0		16.7	403.9	
4/25/2018	388.00	0.05	64.5	355.9		16.8	403.8	
5/30/2018	399.50	0.21	64.5	355.9		16.9	403.7	
6/28/2018	398.90	0.00	64.5	355.9		16.9	403.7	
7/25/2018	388.60	0.00	64.6	355.8		16.3	404.3	
8/24/2018	378.60	0.00	64.5	355.9		16.6	404.0	
9/27/2018	381.40	0.00	64.6	355.8		17.7	402.9	
10/18/2018	385.20	1.45	64.6	355.8		17.7	402.9	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	64.7	355.7		17.7	402.9	
12/20/2018	394.20	2.12	64.7	355.7		17.6	403.0	
2/21/2019	396.00	8.26	64.70	355.7		17.70	402.9	Dry
3/27/2019	376.00	1.88	65.00	355.4		17.70	402.9	Dry
4/25/2019	377.70	0.03	64.70	355.7		17.70	402.9	Dry
5/30/2019	395.30	0.92	64.80	355.6		17.50	403.1	Dry
6/26/2019	388.40	0.01	64.80	355.6		17.70	402.9	Dry
7/5/2019	385.50	0.00	64.90	355.5		17.70	402.9	Dry
7/30/2019	385.20	0.00	64.90	355.5		17.70	402.9	Dry
8/27/2019	387.90	0.00	65.00	355.4		17.70	402.9	Dry
9/26/2019	380.00	0.00	65.00	355.4		17.60	403.0	Dry
10/23/2019	378.90	0.00	65.00	355.4		17.60	403.0	Dry
11/26/2019	383.80	2.60	65.20	355.2		17.80	402.8	Dry
12/18/2019	389.20	4.63	65.30	355.1		17.80	402.8	Dry
1/29/2020	388.20	0.15	65.20	355.2		16.30	404.3	
2/25/2020	384.70	0.33	65.20	355.2		17.60	403.0	
3/24/2020	391.70	3.91	65.20	355.2		17.60	403.0	
4/23/2020	399.40	4.05	65.20	355.2		17.50	403.1	
5/27/2020	388.50	0.40	65.10	355.3		17.10	403.5	
6/24/2020	388.00	0.01	65.20	355.2		17.70	402.9	
7/29/2020	358.70	0.00	65.20	355.2		17.60	403.0	
8/26/2020	379.30	0.00	65.40	355.0		17.40	403.2	
9/29/2020	381.30	0.00	65.40	355.0		17.70	402.9	
10/28/2020	376.50	0.00	65.40	355.0		17.60	403.0	
11/24/2020	380.70	0.25	65.60	354.8		17.70	402.9	
12/23/2020	384.10	1.40	65.50	354.9		17.00	403.6	
1/26/2021	386.2	2.42	65.6	354.83		17.7	402.92	
2/25/2021	385.4	0.07	65.6	354.83		17.5	403.12	
3/23/2021	394.8	1.35	65.6	354.83		17.5	403.12	
4/27/2021	384.1	0.04	65.6	354.83		17.6	403.02	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-1A			P-2		
Top of Well Elevation -->			420.43			420.62		
Bottom of Well Elevation -->			287.40			363.40		
Depth of Well			133.0			57.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	65.6	354.83		17.6	403.02	
6/30/2021	385.4	0	65.8	354.63		17.8	402.82	
7/29/2021	381.7	0.03	65.7	354.73		17.1	403.52	
8/24/2021	383.4	0	65.8	354.63		17.6	403.02	
9/28/2021	381.3	0.06	65.7	354.73		17.7	402.92	
10/27/2021	382.7	0.71	65.8	354.63		17.6	403.02	
11/23/2021	381	0	65.9	354.53		17.6	403.02	
12/21/2021	386.3	6.1	65.9	354.53		17.6	403.02	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		38.4	347.0				Blocked,NotRead
2/28/2007	380.90		38.5	346.9				Blocked,NotRead
3/29/2007	397.00		38.5	346.9				Blocked,NotRead
4/27/2007	405.60		38.5	346.9				Blocked,NotRead
5/24/2007	404.40		38.4	347.0				Blocked,NotRead
6/28/2007	396.90		38.6	346.8				Blocked,NotRead
7/31/2007	392.60		38.5	346.9				Blocked,NotRead
8/29/2007	388.60		38.5	346.9				Blocked,NotRead
9/2/2007	387.40		38.5	346.9				Blocked,NotRead
9/26/2007	387.90		38.6	346.8				Blocked,NotRead
10/25/2007	382.00		38.5	346.9				Blocked,NotRead
11/27/2007	380.30		38.5	346.9				Blocked,NotRead
12/27/2007	381.40		38.5	346.9				Blocked,NotRead
1/31/2008	381.20		38.5	346.9				Blocked,NotRead
2/28/2008	393.10		38.5	346.9				Blocked,NotRead
3/27/2008	387.90		45.5	339.9				Blocked,NotRead
4/28/2008	404.70		39.7	345.7				Blocked,NotRead
5/28/2008	404.00		39.5	345.9				Blocked,NotRead
6/25/2008	400.20		40.1	345.3				Blocked,NotRead
7/29/2008	398.70		40.8	344.6				Blocked,NotRead
7/30/2008	398.70	0.00	41.0	344.4				Blocked,NotRead
8/29/2008	395.00	0.00	42.7	342.7				Blocked,NotRead
9/25/2008	391.70	0.00	43.9	341.5				Blocked,NotRead
10/28/2008	384.05	0.00	47.0	338.5				Blocked,NotRead
11/26/2008	391.10	1.94	45.8	339.6				Blocked,NotRead
12/31/2008	397.90	3.20	42.4	343.0				Blocked,NotRead
1/29/2009	393.40	0.34	43.5	341.9				Blocked,NotRead
2/25/2009	398.60	3.91	42.2	343.2				Blocked,NotRead
3/31/2009	393.40	0.16	43.0	342.4				Blocked,NotRead
4/28/2009	400.70	0.10	41.1	344.3				Blocked,NotRead

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	40.8	344.6				Blocked,NotRead
5/27/2009	400.10	0.00	41.0	344.4				Blocked,NotRead
6/29/2009	403.00	0.15	39.9	345.5				Blocked,NotRead
7/28/2009	396.53	0.00	41.9	343.6				Blocked,NotRead
8/25/2009	396.60	0.00	42.2	343.2				Blocked,NotRead
9/30/2009	393.10	0.00	43.7	341.7				Blocked,NotRead
10/28/2009	401.60	0.42	40.9	344.5				Blocked,NotRead
11/30/2009	402.50	0.00	40.1	345.3				Blocked,NotRead
12/29/2009	399.90	2.80	40.8	344.6				Blocked,NotRead
1/26/2010	401.10	6.75	40.8	344.6				Blocked,NotRead
2/23/2010	402.50	2.66	40.0	345.4				Blocked,NotRead
3/30/2010	400.00	1.25	40.7	344.7				Blocked,NotRead
4/4/2010	399.60		40.9	344.5				Blocked,NotRead
4/27/2010	403.80	1.32	39.8	345.6				Blocked,NotRead
5/26/2010	403.60	0.03	39.7	345.7				Blocked,NotRead
6/29/2010	397.70	0.00	41.6	343.8				Blocked,NotRead
7/27/2010	396.30	0.00	42.3	343.1				Blocked,NotRead
8/26/2010	390.70	0.00	44.2	341.2				Blocked,NotRead
9/28/2010	390.30	0.00	45.0	340.4				Blocked,NotRead
10/26/2010	403.20	1.56	41.0	344.4				Blocked,NotRead
11/30/2010	397.10	1.34	42.0	343.4				Blocked,NotRead
12/28/2010	401.40	9.03	40.9	344.5				Blocked,NotRead
1/27/2011	393.80	1.10	42.7	342.7				Blocked,NotRead
2/23/2011	391.70	1.17	44.0	341.4				Blocked,NotRead
3/29/2011	403.00	3.10	40.6	344.8				Blocked,NotRead
4/27/2011	401.20	0.33	40.9	344.5				Blocked,NotRead
5/26/2011	399.50	0.48	41.4	344.0				Blocked,NotRead
6/28/2011	391.00	0.02	44.0	341.4				Blocked,NotRead
7/26/2011	384.00	0.00	47.0	338.4				Blocked,NotRead
8/24/2011	382.80	0.00	47.6	337.8				Blocked,NotRead

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	48.2	337.2				Blocked,NotRead
10/26/2011	383.90	0.98	47.5	337.9				Blocked,NotRead
11/22/2011	389.80	1.46	45.8	339.6				Blocked,NotRead
12/28/2011	382.30	0.35	47.5	337.9				Blocked,NotRead
1/25/2012	387.50	1.17	47.6	337.8				Blocked,NotRead
2/28/2012	381.10	0.79	48.8	336.6				Blocked,NotRead
3/27/2012	387.70	1.61	47.1	338.3				Blocked,NotRead
4/23/2012	392.30	1.51			Bees nest in can			Blocked,NotRead
5/25/2012	388.30	0.06	45.6	339.8				Blocked,NotRead
6/13/2012	385.10	0.06	46.6	338.8				Blocked,NotRead
6/26/2012	386.90	0.00	46.3	339.1				Blocked,NotRead
7/24/2012	378.00	0.10	49.0	336.4				Blocked,NotRead
8/8/2012	382.90	0.10	47.9	337.5				Blocked,NotRead
8/29/2012	382.70	0.00	48.4	337.0				Blocked,NotRead
8/29/2012	382.70	0.00	48.4	337.0				Blocked,NotRead
9/25/2012	381.90	0.00	48.0	337.4				Blocked,NotRead
10/24/2012	384.40	0.08	48.1	337.3				Blocked,NotRead
11/27/2012	389.60	0.86	45.8	339.6				Blocked,NotRead
12/18/2012	394.70	1.96	43.9	341.5				Blocked,NotRead
1/23/2013	393.00	1.53	43.5	341.9				Blocked,NotRead
2/26/2013	391.50	0.49	44.2	341.2				Blocked,NotRead
3/26/2013	394.40	1.00	44.1	341.3				Blocked,NotRead
4/25/2013	391.00	0.01	44.4	341.0				Blocked,NotRead
5/22/2013	392.00	0.00	43.9	341.5				Blocked,NotRead
6/25/2013	380.60	0.00	47.4	338.0				Blocked,NotRead
7/23/2013	380.20	0.00	48.6	336.8				Blocked,NotRead
8/21/2013	379.60	0.00	48.6	336.8				Blocked,NotRead
9/25/2013	382.20	0.00	48.4	337.0				Blocked,NotRead
10/29/2013	382.00	0.00	48.9	336.5				Blocked,NotRead
11/26/2013	390.10	0.44	46.5	338.9				Blocked,NotRead

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	44.1	341.3				Blocked,NotRead
1/28/2014	392.30	0.00	43.9	341.5				Blocked,NotRead
2/26/2014	389.90	0.72	44.7	340.7				Blocked,NotRead
3/26/2014	387.20		45.6	339.8				Blocked,NotRead
3/28/2014	387.20	1.78	45.8	339.6				Blocked,NotRead
4/23/2014	393.00	0.34	44.4	341.0				Blocked,NotRead
5/28/2014	387.50	0.00	45.7	339.7				Blocked,NotRead
6/25/2014	388.70	0.00	45.5	339.9				Blocked,NotRead
7/29/2014	382.80	0.00	47.4	338.0				Blocked,NotRead
8/28/2014	386.80	0.04	46.9	338.5				Blocked,NotRead
9/24/2014	387.90	0.00	45.9	339.5				Blocked,NotRead
10/29/2014	383.90	0.00	47.4	338.0				Blocked,NotRead
11/21/2014	388.30	0.35	46.0	339.4				Blocked,NotRead
12/22/2014	399.80	4.75	42.1	343.3				Blocked,NotRead
1/28/2015	396.90	1.28	42.5	342.9				Blocked,NotRead
2/24/2015	392.70	0.34	43.6	341.8				Blocked,NotRead
3/31/2015	388.90	0.67	44.3	341.1				Blocked,NotRead
4/23/2015	390.30	0.20	44.6	340.8				Blocked,NotRead
5/28/2015	400.30	1.87	41.2	344.2				Blocked,NotRead
6/24/2015	400.70	0.00	40.9	344.5				Blocked,NotRead
7/30/2015	400.20	0.00	41.0	344.4				Blocked,NotRead
8/25/2015	384.00	0.00	45.1	340.3				Blocked,NotRead
9/23/2015	388.60	2.17	45.2	340.2				Blocked,NotRead
10/29/2015	387.60	0.16	45.8	339.6				Blocked,NotRead
11/25/2015	386.90	0.15	46.0	339.4				Blocked,NotRead
12/23/2015	395.90	1.55	44.4	341.0				Blocked,NotRead
1/26/2016	401.20	2.86	41.2	344.2				Blocked,NotRead
2/24/2016	393.60	0.39	43.3	342.1				Blocked,NotRead
3/29/2016	397.10	1.55	42.2	343.2				Blocked,NotRead
4/29/2016	391.60	0.04	43.8	341.6				Blocked,NotRead

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	41.3	344.1				Blocked,NotRead
6/29/2016	392.50	0.00	43.3	342.1				Blocked,NotRead
7/26/2016	377.70	0.00	47.8	337.6				Blocked,NotRead
8/24/2016	388.10	0.00	46.1	339.3				Blocked,NotRead
9/29/2016	388.20	0.00	45.7	339.7				Blocked,NotRead
10/26/2016	392.10	0.96	45.1	340.3				Blocked,NotRead
11/22/2016	395.70	1.42	43.3	342.1				Blocked,NotRead
12/28/2016	400.70	4.11	41.1	344.3				Blocked,NotRead
1/26/2017	402.40	6.70	40.5	344.9				Blocked,NotRead
2/28/2017	389.60	4.01	44.4	341.0				Blocked,NotRead
3/29/2017	391.80	0.14	44.3	341.1				Blocked,NotRead
4/26/2017	387.00	0.04	45.5	340.0				Blocked,NotRead
5/23/2017	399.40	0.30	41.9	343.5				Blocked,NotRead
6/21/2017	392.60	0.00	43.5	341.9				Blocked,NotRead
7/26/2017	384.60	0.00	46.4	339.0				Blocked,NotRead
8/30/2017	383.00	0.00	47.1	338.3				Blocked,NotRead
9/27/2017	382.00	0.00	48.1	337.3				Blocked,NotRead
10/27/2017	375.00	0.00	49.5	335.9				Blocked,NotRead
11/30/2017	382.80	0.14	48.1	337.3				Blocked,NotRead
12/21/2017	380.50	0.00	48.6	336.8				Blocked,NotRead
1/24/2018	397.80	1.43	43.5	341.9				Blocked,NotRead
2/21/2018	382.40	0.17	46.7	338.7				Blocked,NotRead
3/29/2018	392.10	0.00	44.5	340.9				Blocked,NotRead
4/25/2018	388.00	0.05	46.3	339.1				Blocked,NotRead
5/30/2018	399.50	0.21	42.5	342.9				Blocked,NotRead
6/28/2018	398.90	0.00	41.6	343.8				Blocked,NotRead
7/25/2018	388.60	0.00	44.5	340.9				Blocked,NotRead
8/24/2018	378.60	0.00	48.4	337.0				Blocked,NotRead
9/27/2018	381.40	0.00	48.3	337.1				Blocked,NotRead
10/18/2018	385.20	1.45	47.3	338.1				Blocked,NotRead

Note:

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	48.9	336.5				Blocked,NotRead
12/20/2018	394.20	2.12	44.5	340.9				Blocked,NotRead
2/21/2019	396.00	8.26	42.20	343.2				Blocked,NotRead
3/27/2019	376.00	1.88	47.40	338.0				Blocked,NotRead
4/25/2019	377.70	0.03	48.04	337.4				Blocked,NotRead
5/30/2019	395.30	0.92	47.40	338.0				Blocked,NotRead
6/26/2019	388.40	0.01	45.00	340.4		31.10	389.71	Abandoned
7/5/2019	385.50	0.00	47.60	337.8		37.20	383.61	Abandoned
7/30/2019	385.20	0.00	47.60	337.8		37.30	383.51	Abandoned
8/27/2019	387.90	0.00	45.60	339.8		37.30	383.51	Abandoned
9/26/2019	380.00	0.00	48.20	337.2		37.20	383.61	Abandoned
10/23/2019	378.90	0.00	49.20	336.2		37.30	383.51	Abandoned
11/26/2019	383.80	2.60	48.30	337.1		37.30	383.51	Abandoned
12/18/2019	389.20	4.63	46.10	339.3		37.40	383.41	Abandoned
1/29/2020	388.20	0.15	45.60	339.8		37.30	383.51	Abandoned
2/25/2020	384.70	0.33	46.80	338.6		37.30	383.51	Abandoned
3/24/2020	391.70	3.91	45.00	340.4		37.30	383.51	Abandoned
4/23/2020	399.40	4.05	41.60	343.8		37.30	383.51	Abandoned
5/27/2020	388.50	0.40	45.00	340.4		37.20	383.61	Abandoned
6/24/2020	388.00	0.01	45.30	340.1		39.30	381.51	Abandoned
7/29/2020	358.70	0.00	46.10	339.3		41.20	379.61	Abandoned
8/26/2020	379.30	0.00	48.80	336.6		37.40	383.41	Abandoned
9/29/2020	381.30	0.00	48.40	337.0		37.30	383.51	Abandoned
10/28/2020	376.50	0.00	49.80	335.6		37.20	383.61	Abandoned
11/24/2020	380.70	0.25	49.20	336.2		37.30	383.51	Abandoned
12/23/2020	384.10	1.40	47.90	337.5		37.20	383.61	Abandoned
1/26/2021	386.2	2.42	46.9	338.5		37.3	383.51	Abandoned
2/25/2021	385.4	0.07	46.5	338.9		37.3	383.51	Abandoned
3/23/2021	394.8	1.35	43.9	341.5		37.3	383.51	Abandoned
4/27/2021	384.1	0.04	46.6	338.8		37.5	383.31	Abandoned

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-3A			P-30A		
Top of Well Elevation -->			385.40			420.81		
Bottom of Well Elevation -->			303.70			371.70		
Depth of Well			81.7			49.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	46.9	338.5		37.3	383.51	Abandoned
6/30/2021	385.4	0	47.1	338.3		37.5	383.31	Abandoned
7/29/2021	381.7	0.03	48.7	336.7		37.3	383.51	Abandoned
8/24/2021	383.4	0	48.3	337.1		37.3	383.51	Abandoned
9/28/2021	381.3	0.06	48	337.4		37.4	383.41	Abandoned
10/27/2021	382.7	0.71	48.8	336.6		37.3	383.51	Abandoned
11/23/2021	381	0	49.1	336.3		37.4	383.41	Abandoned
12/21/2021	386.3	6.1	47.5	337.9		37.4	383.41	Abandoned

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		47.5	373.3		31.1	357.6	
2/28/2007	380.90		37.5	383.3		31.3	357.4	
3/29/2007	397.00		47.5	373.3		31.2	357.5	
4/27/2007	405.60		47.5	373.3		31.3	357.4	
5/24/2007	404.40		46.6	374.2		35.3	353.4	
6/28/2007	396.90		45.8	375.0		31.3	357.4	
7/31/2007	392.60		45.0	375.8		31.2	357.5	
8/29/2007	388.60		45.3	375.5		31.3	357.4	
9/2/2007	387.40		47.5	373.3		31.3	357.4	
9/26/2007	387.90		47.0	373.8		31.2	357.5	
10/25/2007	382.00		47.9	372.9		31.2	357.5	
11/27/2007	380.30		47.5	373.3		31.3	357.4	
12/27/2007	381.40		47.6	373.2		31.4	357.3	
1/31/2008	381.20		47.5	373.3	Dry	31.3	357.4	
2/28/2008	393.10		46.7	374.1	Dry	33.3	355.4	
3/27/2008	387.90		48.3	372.5		31.4	357.3	Dry
4/28/2008	404.70		48.3	372.5	Dry	31.3	357.4	Dry
5/28/2008	404.00		46.6	374.2		31.4	357.3	Dry
6/25/2008	400.20		46.0	374.8		31.4	357.3	Dry
7/29/2008	398.70		44.0	376.8		31.3	357.4	Dry
7/30/2008	398.70	0.00	46.0	374.8		31.3	357.4	Dry
8/29/2008	395.00	0.00	47.1	373.7	Cleaning	31.3	357.4	Dry
9/25/2008	391.70	0.00	48.6	372.2		31.3	357.4	Dry
10/28/2008	384.05	0.00	51.0	369.8		31.3	357.4	Dry
11/26/2008	391.10	1.94	53.1	367.7		31.4	357.3	Dry
12/31/2008	397.90	3.20	48.6	372.2		31.3	357.4	Dry
1/29/2009	393.40	0.34	49.0	371.8		31.3	357.4	Dry
2/25/2009	398.60	3.91	48.6	372.2		31.3	357.4	Dry
3/31/2009	393.40	0.16	47.3	373.5		31.4	357.3	Dry
4/28/2009	400.70	0.10	47.1	373.7		31.2	357.5	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	45.5	375.3		30.3	358.4	
5/27/2009	400.10	0.00	45.6	375.2		31.1	357.6	Dry
6/29/2009	403.00	0.15	43.6	377.2		31.3	357.4	
7/28/2009	396.53	0.00	44.7	376.1		30.8	357.9	
8/25/2009	396.60	0.00	46.5	374.3		31.0	357.7	
9/30/2009	393.10	0.00	48.4	372.4		31.3	357.4	
10/28/2009	401.60	0.42	46.6	374.2		31.3	357.4	
11/30/2009	402.50	0.00	44.0	376.8		31.3	357.4	
12/29/2009	399.90	2.80	44.7	376.1		31.3	357.4	
1/26/2010	401.10	6.75	46.0	374.8		28.3	360.4	
2/23/2010	402.50	2.66	44.7	376.1		30.5	358.2	
3/30/2010	400.00	1.25	44.5	376.3		30.0	358.7	
4/4/2010	399.60		44.8	376.0		30.1	358.6	
4/27/2010	403.80	1.32	44.1	376.7		30.2	358.5	
5/26/2010	403.60	0.03	43.5	377.3		29.7	359.0	
6/29/2010	397.70	0.00	43.0	377.8		29.5	359.2	
7/27/2010	396.30	0.00	43.0	377.8		30.3	358.4	
8/26/2010	390.70	0.00	42.9	377.9		31.3	357.4	
9/28/2010	390.30	0.00	42.8	378.0		31.1	357.6	
10/26/2010	403.20	1.56	43.0	377.8		31.5	357.2	
11/30/2010	397.10	1.34	43.0	377.8		31.3	357.4	
12/28/2010	401.40	9.03	43.1	377.7		22.5	366.2	
1/27/2011	393.80	1.10	43.0	377.8		30.6	358.1	
2/23/2011	391.70	1.17	43.2	377.6		31.3	357.4	
3/29/2011	403.00	3.10	43.0	377.8		31.2	357.5	
4/27/2011	401.20	0.33	43.2	377.6	Dry	31.0	357.7	
5/26/2011	399.50	0.48	43.0	377.9	Dry	30.7	358.1	
6/28/2011	391.00	0.02	43.0	377.8		31.0	357.7	
7/26/2011	384.00	0.00	43.0	377.8		31.2	357.5	
8/24/2011	382.80	0.00	43.2	377.6		31.3	357.4	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	43.0	377.8		31.3	357.4	
10/26/2011	383.90	0.98	42.9	377.9		31.3	357.4	
11/22/2011	389.80	1.46	43.0	377.8		31.3	357.4	
12/28/2011	382.30	0.35	43.0	377.8		31.4	357.3	
1/25/2012	387.50	1.17	43.0	377.8		31.4	357.3	
2/28/2012	381.10	0.79	43.0	377.8		31.4	357.3	
3/27/2012	387.70	1.61	43.0	377.8		31.3	357.4	
4/23/2012	392.30	1.51	43.1	377.7		31.4	357.4	
5/25/2012	388.30	0.06	43.1	377.7		31.5	357.2	
6/13/2012	385.10	0.06	43.1	377.7		31.2	357.5	
6/26/2012	386.90	0.00	43.1	377.7		31.3	357.4	
7/24/2012	378.00	0.10	43.1	377.7		31.3	357.4	
8/8/2012	382.90	0.10	43.1	377.7		31.3	357.4	
8/29/2012	382.70	0.00	43.1	377.7		31.3	357.4	
8/29/2012	382.70	0.00	43.1	377.7		31.3	357.4	
9/25/2012	381.90	0.00	43.1	377.7		31.3	357.4	
10/24/2012	384.40	0.08	43.0	377.8		31.0	357.7	
11/27/2012	389.60	0.86	43.1	377.7		31.3	357.4	
12/18/2012	394.70	1.96	43.1	377.7		31.3	357.4	
1/23/2013	393.00	1.53	43.2	377.6		31.5	357.2	
2/26/2013	391.50	0.49	43.2	377.6		31.3	357.4	
3/26/2013	394.40	1.00	43.1	377.7		31.3	357.4	
4/25/2013	391.00	0.01	42.9	377.9		31.5	357.2	
5/22/2013	392.00	0.00	43.0	377.8		31.4	357.3	
6/25/2013	380.60	0.00	42.8	378.0		31.3	357.4	
7/23/2013	380.20	0.00	43.3	377.5		31.3	357.4	Dry
8/21/2013	379.60	0.00	43.0	377.8		31.3	357.4	Dry
9/25/2013	382.20	0.00	43.0	377.8	Dry	31.3	357.4	Dry
10/29/2013	382.00	0.00	43.2	377.6	Wet	31.2	357.5	Dry
11/26/2013	390.10	0.44	43.0	377.8		31.3	357.4	Dry

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	43.0	377.8		31.4	357.3	Dry
1/28/2014	392.30	0.00	43.0	377.8		31.4	357.3	Dry
2/26/2014	389.90	0.72	43.0	377.8		31.4	357.3	Dry
3/26/2014	387.20		43.2	377.6	Wet	31.4	357.3	Dry
3/28/2014	387.20	1.78	43.0	377.8		31.3	357.4	
4/23/2014	393.00	0.34	43.1	377.7		31.3	357.4	
5/28/2014	387.50	0.00	42.9	377.9		31.5	357.2	
6/25/2014	388.70	0.00	43.2	377.6		31.3	357.4	Dry
7/29/2014	382.80	0.00	43.1	377.7		31.3	357.4	Dry
8/28/2014	386.80	0.04	43.1	377.7		31.2	357.5	
9/24/2014	387.90	0.00	43.0	377.8		31.2	357.5	Dry
10/29/2014	383.90	0.00	43.1	377.7		31.4	357.3	Dry
11/21/2014	388.30	0.35	43.0	377.8		31.2	357.5	
12/22/2014	399.80	4.75	42.7	378.1		31.3	357.4	Dry
1/28/2015	396.90	1.28	43.1	377.7		31.4	357.3	Dry
2/24/2015	392.70	0.34	43.0	377.8		31.4	357.3	Dry
3/31/2015	388.90	0.67	43.1	377.7		31.5	357.2	Dry
4/23/2015	390.30	0.20	43.1	377.7		31.3	357.4	Dry
5/28/2015	400.30	1.87	42.9	377.9		31.4	357.3	Dry
6/24/2015	400.70	0.00	43.0	377.8		31.4	357.3	Dry
7/30/2015	400.20	0.00	43.1	377.7		31.4	357.3	Dry
8/25/2015	384.00	0.00	38.6	382.2	Omitted	31.3	357.4	Dry
9/23/2015	388.60	2.17	43.1	377.7		31.3	357.4	Dry
10/29/2015	387.60	0.16	43.2	377.6		31.5	357.2	Dry
11/25/2015	386.90	0.15	43.2	377.6		31.4	357.3	Dry
12/23/2015	395.90	1.55	43.0	377.8		31.4	357.3	Dry
1/26/2016	401.20	2.86	43.2	377.6		31.3	357.4	Dry
2/24/2016	393.60	0.39	43.1	377.7		31.4	357.3	Dry
3/29/2016	397.10	1.55	43.2	377.6		31.4	357.3	Dry
4/29/2016	391.60	0.04	43.0	377.8		31.4	357.3	Dry

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	44.3	376.5		31.4	357.3	Dry
6/29/2016	392.50	0.00	43.1	377.7		31.3	357.4	Dry
7/26/2016	377.70	0.00	52.2	368.6		31.3	357.4	Dry
8/24/2016	388.10	0.00	53.3	367.5		30.4	358.3	Dry
9/29/2016	388.20	0.00	52.5	368.3		31.4	357.3	Dry
10/26/2016	392.10	0.96	53.1	367.7		31.3	357.4	Dry
11/22/2016	395.70	1.42	43.1	377.7		31.3	357.4	Dry
12/28/2016	400.70	4.11	41.2	379.6		31.4	357.3	Dry
1/26/2017	402.40	6.70	43.2	377.6		31.4	357.3	Dry
2/28/2017	389.60	4.01	48.1	372.7		31.4	357.3	Dry
3/29/2017	391.80	0.14	50.6	370.2		31.3	357.4	
4/26/2017	387.00	0.04	43.0	377.8		31.3	357.4	
5/23/2017	399.40	0.30	43.3	377.5		31.4	357.3	Dry
6/21/2017	392.60	0.00	47.6	373.2		31.3	357.4	Dry
7/26/2017	384.60	0.00	50.6	370.2	Dry	31.4	357.3	Dry
8/30/2017	383.00	0.00	50.8	370.0	Dry	31.4	357.3	Dry
9/27/2017	382.00	0.00	50.6	370.2	Dry	31.3	357.4	Dry
10/27/2017	375.00	0.00	43.2	377.6	Omitted	31.4	357.3	
11/30/2017	382.80	0.14	53.4	367.4	Omitted	31.3	357.4	
12/21/2017	380.50	0.00	53.6	367.2	Dry	31.3	357.4	Dry
1/24/2018	397.80	1.43	53.4	367.4	Omitted	31.3	357.4	Dry
2/21/2018	382.40	0.17	43.3	377.5	Omitted	31.3	357.4	Dry
3/29/2018	392.10	0.00	52.3	368.5	Omitted	31.3	357.4	Dry
4/25/2018	388.00	0.05	50.7	370.1	Omitted	31.2	357.5	Dry
5/30/2018	399.50	0.21	50.5	370.3	Omitted	31.2	357.5	Dry
6/28/2018	398.90	0.00	47.0	373.8	Omitted	31.3	357.4	Dry
7/25/2018	388.60	0.00	49.1	371.7	Omitted	31.4	357.3	Dry
8/24/2018	378.60	0.00	43.2	377.6	Omitted	31.1	357.6	Dry
9/27/2018	381.40	0.00	50.5	370.3	Omitted	31.2	357.5	
10/18/2018	385.20	1.45	50.6	370.2	Omitted	31.3	357.4	Dry

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	43.4	377.4	Omitted	31.3	357.4	
12/20/2018	394.20	2.12	50.5	370.3	Omitted	31.1	357.6	Dry
2/21/2019	396.00	8.26	47.70	373.1	Omitted	30.90	357.8	
3/27/2019	376.00	1.88			Blocked,NotRead	31.30	357.4	
4/25/2019	377.70	0.03			Blocked,NotRead	31.30	357.4	Dry
5/30/2019	395.30	0.92	52.60	368.2		31.20	357.5	Dry
6/26/2019	388.40	0.01	53.20	367.6		31.30	357.4	Dry
7/5/2019	385.50	0.00	51.70	369.1		31.30	357.4	Dry
7/30/2019	385.20	0.00	53.22	367.6		31.30	357.4	
8/27/2019	387.90	0.00	52.90	367.9		31.20	357.5	Dry
9/26/2019	380.00	0.00	54.30	366.5		31.30	357.4	
10/23/2019	378.90	0.00	53.20	367.6		31.20	357.5	
11/26/2019	383.80	2.60	53.20	367.6		31.20	357.5	
12/18/2019	389.20	4.63	53.50	367.3		31.40	357.3	
1/29/2020	388.20	0.15	53.30	367.5		31.20	357.5	
2/25/2020	384.70	0.33	53.20	367.6		31.20	357.5	
3/24/2020	391.70	3.91	53.30	367.5		31.30	357.4	
4/23/2020	399.40	4.05	53.30	367.5		31.30	357.4	
5/27/2020	388.50	0.40	53.20	367.6		31.20	357.5	
6/24/2020	388.00	0.01	52.20	368.6		31.30	357.4	
7/29/2020	358.70	0.00	52.40	368.4		31.20	357.5	
8/26/2020	379.30	0.00	53.40	367.4		31.30	357.4	
9/29/2020	381.30	0.00	53.40	367.4		31.30	357.4	
10/28/2020	376.50	0.00	53.60	367.2		31.30	357.4	
11/24/2020	380.70	0.25	53.60	367.2		31.20	357.5	
12/23/2020	384.10	1.40	55.40	365.4		31.30	357.4	
1/26/2021	386.2	2.42	53.6	367.21		31.3	357.43	
2/25/2021	385.4	0.07	53.4	367.41		31.2	357.53	
3/23/2021	394.8	1.35	51.9	368.91		31.1	357.63	
4/27/2021	384.1	0.04	53.2	367.61		31.3	357.43	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-30B			P-35A		
Top of Well Elevation -->			420.81			388.73		
Bottom of Well Elevation -->			337.10			357.30		
Depth of Well			83.7			31.4		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	53.6	367.21		31.3	357.43	
6/30/2021	385.4	0	53.8	367.01		31.3	357.43	
7/29/2021	381.7	0.03	53.5	367.31		31.3	357.43	
8/24/2021	383.4	0	53.6	367.21		31.3	357.43	
9/28/2021	381.3	0.06	53.7	367.11		31.4	357.33	
10/27/2021	382.7	0.71	53.5	367.31		31.3	357.43	
11/23/2021	381	0	53.6	367.21		31.3	357.43	
12/21/2021	386.3	6.1	53.6	367.21		31.3	357.43	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		44.1	344.4		44.3	344.0	
2/28/2007	380.90		44.1	344.4		44.6	343.7	
3/29/2007	397.00		46.1	342.4		44.7	343.6	
4/27/2007	405.60		44.1	344.4		43.9	344.4	
5/24/2007	404.40		44.3	344.2		43.0	345.3	
6/28/2007	396.90		44.4	344.1		42.8	345.5	
7/31/2007	392.60		44.3	344.2		43.1	345.2	
8/29/2007	388.60		44.1	344.4		43.4	344.9	
9/2/2007	387.40		44.1	344.4		43.3	345.0	
9/26/2007	387.90		44.1	344.4		43.5	344.8	
10/25/2007	382.00		44.2	344.3		44.0	344.3	
11/27/2007	380.30		44.1	344.4		44.4	343.9	
12/27/2007	381.40		44.2	344.3		44.7	343.6	
1/31/2008	381.20		44.2	344.3		44.7	343.7	Dry
2/28/2008	393.10		44.1	344.4		44.8	343.5	Dry
3/27/2008	387.90		49.6	338.9		44.6	343.7	Dry
4/28/2008	404.70		44.3	344.2		44.1	344.2	
5/28/2008	404.00		44.0	344.5		43.1	345.2	
6/25/2008	400.20		44.5	344.0		42.5	345.8	
7/29/2008	398.70		45.4	343.1		42.5	345.8	
7/30/2008	398.70	0.00	45.5	343.0		42.5	345.8	
8/29/2008	395.00	0.00	46.8	341.7		42.5	345.8	
9/25/2008	391.70	0.00	47.9	340.6		43.5	344.8	
10/28/2008	384.05	0.00	50.8	337.7		43.3	345.0	
11/26/2008	391.10	1.94	49.7	338.8		43.7	344.6	
12/31/2008	397.90	3.20	46.7	341.8		43.3	345.0	
1/29/2009	393.40	0.34	47.6	340.9		43.1	345.2	
2/25/2009	398.60	3.91	46.1	342.4		43.1	345.2	
3/31/2009	393.40	0.16	47.1	341.4		42.8	345.5	
4/28/2009	400.70	0.10	45.5	343.0		42.8	345.5	

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	45.2	343.3		42.4	345.9	
5/27/2009	400.10	0.00	45.4	343.1		42.4	345.9	
6/29/2009	403.00	0.15	44.4	344.1		41.9	346.4	
7/28/2009	396.53	0.00	46.2	342.3		41.9	346.5	
8/25/2009	396.60	0.00	46.5	342.0		42.1	346.2	
9/30/2009	393.10	0.00	47.9	340.6		42.7	345.6	
10/28/2009	401.60	0.42	45.4	343.1		42.6	345.7	
11/30/2009	402.50	0.00	44.6	343.9		41.8	346.5	
12/29/2009	399.90	2.80	45.3	343.2		41.7	346.6	
1/26/2010	401.10	6.75	45.2	343.3		41.9	346.4	
2/23/2010	402.50	2.66	44.6	343.9		41.8	346.5	
3/30/2010	400.00	1.25	45.1	343.4		41.3	347.0	
4/4/2010	399.60		45.3	343.2		41.5	346.8	
4/27/2010	403.80	1.32	44.4	344.1		41.4	346.9	
5/26/2010	403.60	0.03	44.3	344.2		41.2	347.1	
6/29/2010	397.70	0.00	46.0	342.5		40.3	348.0	
7/27/2010	396.30	0.00	46.7	341.8		41.8	346.5	
8/26/2010	390.70	0.00	48.3	340.2		41.9	346.4	
9/28/2010	390.30	0.00	48.7	339.8		42.9	345.4	
10/26/2010	403.20	1.56	45.7	342.8		42.7	345.6	
11/30/2010	397.10	1.34	46.5	342.0		47.9	340.4	Erroneous
12/28/2010	401.40	9.03	45.5	343.0		42.0	346.3	
1/27/2011	393.80	1.10	47.1	341.4		41.8	346.5	
2/23/2011	391.70	1.17	48.3	340.2		42.4	345.9	
3/29/2011	403.00	3.10	45.2	343.3		42.1	346.2	
4/27/2011	401.20	0.33	45.5	343.0		41.5	346.8	
5/26/2011	399.50	0.48	46.0	342.5		41.7	346.6	
6/28/2011	391.00	0.02	48.4	340.1		42.0	346.3	
7/26/2011	384.00	0.00	50.9	337.6		42.8	345.5	
8/24/2011	382.80	0.00	51.6	336.9		43.5	344.8	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	52.2	336.3		44.0	344.3	
10/26/2011	383.90	0.98	51.5	337.0		44.2	344.1	
11/22/2011	389.80	1.46	50.1	338.4		44.4	343.9	
12/28/2011	382.30	0.35	51.5	337.0		44.1	344.2	
1/25/2012	387.50	1.17	51.5	337.0		44.5	343.8	
2/28/2012	381.10	0.79	52.6	335.9		44.7	343.6	
3/27/2012	387.70	1.61	51.2	337.3		44.7	343.6	
4/23/2012	392.30	1.51	49.3	339.2		44.7	343.6	
5/25/2012	388.30	0.06	49.6	338.9		44.4	343.9	
6/13/2012	385.10	0.06	50.8	337.7		44.4	343.9	
6/26/2012	386.90	0.00	50.4	338.1		44.2	344.1	
7/24/2012	378.00	0.10	52.8	335.7		44.5	343.8	
8/8/2012	382.90	0.10	51.9	336.6		44.7	343.6	
8/29/2012	382.70	0.00	52.3	336.2		44.7	343.6	
8/29/2012	382.70	0.00	52.3	336.2		44.7	343.6	
9/25/2012	381.90	0.00	52.9	335.6		44.7	343.6	
10/24/2012	384.40	0.08	52.1	336.4		44.6	343.7	
11/27/2012	389.60	0.86	50.0	338.5		44.5	343.8	
12/18/2012	394.70	1.96	48.4	340.1		44.6	343.7	
1/23/2013	393.00	1.53	47.9	340.6		43.8	344.5	
2/26/2013	391.50	0.49	48.4	340.1		43.6	344.7	
3/26/2013	394.40	1.00	48.5	340.0		43.7	344.6	
4/25/2013	391.00	0.01	48.8	339.7		43.7	344.6	
5/22/2013	392.00	0.00	48.4	340.1		43.5	344.8	
6/25/2013	380.60	0.00	51.4	337.1		43.8	344.5	
7/23/2013	380.20	0.00	52.5	336.0		44.3	344.0	
8/21/2013	379.60	0.00	52.5	336.0		44.6	343.7	Wet
9/25/2013	382.20	0.00	52.4	336.1		44.7	343.6	Dry
10/29/2013	382.00	0.00	52.8	335.7		44.7	343.6	Dry
11/26/2013	390.10	0.44	50.8	337.7		44.7	343.6	Dry

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	48.6	339.9		44.7	343.6	Dry
1/28/2014	392.30	0.00	48.3	340.2		43.9	344.4	
2/26/2014	389.90	0.72	49.0	339.5		43.8	344.5	
3/26/2014	387.20		49.1	339.4		43.8	344.5	
3/28/2014	387.20	1.78	49.9	338.6		43.9	344.4	
4/23/2014	393.00	0.34	48.8	339.7		43.9	344.4	
5/28/2014	387.50	0.00	49.9	338.6		43.8	344.5	
6/25/2014	388.70	0.00	49.8	338.7		44.7	343.6	
7/29/2014	382.80	0.00	51.5	337.0		43.8	344.5	
8/28/2014	386.80	0.04	51.1	337.4		44.4	343.9	
9/24/2014	387.90	0.00	50.2	338.3		44.4	343.9	Wet
10/29/2014	383.90	0.00	51.5	337.0		44.5	343.8	
11/21/2014	388.30	0.35	50.3	338.2		44.5	343.8	
12/22/2014	399.80	4.75	46.8	341.7		44.0	344.3	
1/28/2015	396.90	1.28	47.1	341.4		43.3	345.0	
2/24/2015	392.70	0.34	48.1	340.4		43.3	345.0	
3/31/2015	388.90	0.67	48.6	339.9		43.0	345.3	
4/23/2015	390.30	0.20	49.0	339.5		43.3	345.0	
5/28/2015	400.30	1.87	46.0	342.5		43.0	345.3	
6/24/2015	400.70	0.00	45.8	342.7		42.5	345.8	
7/30/2015	400.20	0.00	45.9	342.6		42.5	345.8	
8/25/2015	384.00	0.00	49.4	339.1		42.6	345.7	
9/23/2015	388.60	2.17	49.6	338.9		43.3	345.0	
10/29/2015	387.60	0.16	50.1	338.4		43.5	344.8	
11/25/2015	386.90	0.15	50.4	338.1		43.7	344.6	
12/23/2015	395.90	1.55	48.8	339.7		43.9	344.4	
1/26/2016	401.20	2.86	46.1	342.4		43.0	345.3	
2/24/2016	393.60	0.39	47.9	340.6		42.8	345.5	
3/29/2016	397.10	1.55	47.0	341.5		42.9	345.4	
4/29/2016	391.60	0.04	47.2	341.3		42.9	345.4	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	46.2	342.3		43.0	345.3	
6/29/2016	392.50	0.00	48.0	340.5		42.5	345.8	
7/26/2016	377.70	0.00	51.8	336.7		43.2	345.1	
8/24/2016	388.10	0.00	50.5	338.0		44.8	343.5	
9/29/2016	388.20	0.00	50.7	337.8		44.7	343.6	
10/26/2016	392.10	0.96	49.6	338.9		43.9	344.4	
11/22/2016	395.70	1.42	47.9	340.6		43.7	344.6	
12/28/2016	400.70	4.11	46.0	342.5		43.0	345.3	
1/26/2017	402.40	6.70	45.4	343.1		42.7	345.6	
2/28/2017	389.60	4.01	48.8	339.7		42.5	345.8	
3/29/2017	391.80	0.14	48.9	339.6		43.4	344.9	
4/26/2017	387.00	0.04	49.9	338.6		43.5	344.8	
5/23/2017	399.40	0.30	46.8	341.7		43.5	344.8	
6/21/2017	392.60	0.00	48.2	340.3		43.2	345.1	
7/26/2017	384.60	0.00	50.6	337.9		43.4	344.9	
8/30/2017	383.00	0.00	51.5	337.0		43.8	344.5	
9/27/2017	382.00	0.00	52.3	336.2		44.4	343.9	
10/27/2017	375.00	0.00	53.6	334.9		44.8	343.5	Dry
11/30/2017	382.80	0.14	52.4	336.1		44.8	343.5	Dry
12/21/2017	380.50	0.00	52.8	335.7		44.7	343.6	Dry
1/24/2018	397.80	1.43	48.4	340.1		44.8	343.5	
2/21/2018	382.40	0.17	50.9	337.6		44.1	344.2	
3/29/2018	392.10	0.00	49.1	339.4		44.5	343.8	
4/25/2018	388.00	0.05	50.6	337.9		44.4	343.9	
5/30/2018	399.50	0.21	47.3	341.2		44.3	344.0	
6/28/2018	398.90	0.00	46.5	342.0		43.5	344.8	
7/25/2018	388.60	0.00	48.9	339.6		43.3	345.0	
8/24/2018	378.60	0.00	52.4	336.1		43.9	344.4	
9/27/2018	381.40	0.00	52.4	336.1		44.7	343.6	
10/18/2018	385.20	1.45	51.5	337.0		44.6	343.7	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	53.1	335.4		44.7	343.6	
12/20/2018	394.20	2.12	49.0	339.5		44.8	343.5	
2/21/2019	396.00	8.26	46.90	341.6		43.50	344.8	
3/27/2019	376.00	1.88	52.30	336.2		46.60	341.7	
4/25/2019	377.70	0.03	52.03	336.4		44.30	344.0	
5/30/2019	395.30	0.92	48.30	340.2		44.50	343.8	
6/26/2019	388.40	0.01	49.40	339.1		44.10	344.2	
7/5/2019	385.50	0.00	51.10	337.4		44.10	344.2	
7/30/2019	385.20	0.00	51.40	337.1		44.30	344.0	
8/27/2019	387.90	0.00	50.00	338.5		44.50	343.8	
9/26/2019	380.00	0.00	52.10	336.4		44.60	343.7	
10/23/2019	378.90	0.00	53.10	335.4		44.60	343.7	
11/26/2019	383.80	2.60	52.50	336.0		44.70	343.6	
12/18/2019	389.20	4.63	51.40	337.1		44.10	344.2	
1/29/2020	388.20	0.15	49.90	338.6		44.60	343.7	
2/25/2020	384.70	0.33	51.00	337.5		44.60	343.7	
3/24/2020	391.70	3.91	49.40	339.1		44.70	343.6	
4/23/2020	399.40	4.05	47.80	340.7		44.70	343.6	
5/27/2020	388.50	0.40	49.30	339.2		43.70	344.6	
6/24/2020	388.00	0.01	49.60	338.9		43.90	344.4	
7/29/2020	358.70	0.00	50.30	338.2		44.00	344.3	
8/26/2020	379.30	0.00	52.30	336.2		44.30	344.0	
9/29/2020	381.30	0.00	52.50	336.0		44.70	343.6	
10/28/2020	376.50	0.00	53.70	334.8		44.70	343.6	
11/24/2020	380.70	0.25	53.10	335.4		44.80	343.5	
12/23/2020	384.10	1.40	52.20	336.3		44.60	343.7	
1/26/2021	386.2	2.42	51.2	337.25		44	344.34	
2/25/2021	385.4	0.07	74.7		Omitted	44.6	343.74	
3/23/2021	394.8	1.35	48.5	339.95		44.6	343.74	
4/27/2021	384.1	0.04	50.9	337.55		44.3	344.04	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-35B			P-35C		
Top of Well Elevation -->			388.45			388.34		
Bottom of Well Elevation -->			313.40			343.20		
Depth of Well			75.1			45.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	51.2	337.25		44.6	343.74	
6/30/2021	385.4	0	51.4	337.05		44.9	343.44	
7/29/2021	381.7	0.03	52.6	335.85		44.5	343.84	
8/24/2021	383.4	0	52.4	336.05		44.8	343.54	
9/28/2021	381.3	0.06	52.2	336.25		44.8	343.54	
10/27/2021	382.7	0.71	52.9	335.55		44.6	343.74	
11/23/2021	381	0	53.1	335.35		44.8	343.54	
12/21/2021	386.3	6.1	51.7	336.75		44.7	343.64	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		35.3	385.7		27.5	329.5	
2/28/2007	380.90		35.2	385.8		28.3	328.7	
3/29/2007	397.00		35.2	385.8		28.5	328.5	
4/27/2007	405.60		28.7	392.3		24.3	332.7	
5/24/2007	404.40		28.1	392.9		21.4	335.6	
6/28/2007	396.90		35.3	385.7		20.8	336.2	
7/31/2007	392.60		33.3	387.7		22.9	334.1	
8/29/2007	388.60		34.5	386.5		24.3	332.7	
9/2/2007	387.40		35.1	385.9		24.6	332.4	
9/26/2007	387.90		35.1	385.9		25.2	331.8	
10/25/2007	382.00		35.6	385.4		26.5	330.5	
11/27/2007	380.30		35.0	386.0		27.8	329.2	
12/27/2007	381.40		35.3	385.7		33.3	323.7	
1/31/2008	381.20		35.1	385.9	Dry	29.3	327.7	
2/28/2008	393.10		35.1	385.9	Dry	28.7	328.3	
3/27/2008	387.90		40.9	380.1		27.6	329.4	
4/28/2008	404.70		29.2	391.8		23.7	333.3	
5/28/2008	404.00		28.1	392.9		22.1	334.9	
6/25/2008	400.20		27.3	393.7	Dry	21.2	335.8	
7/29/2008	398.70		27.5	393.5	Dry	21.6	335.4	
7/30/2008	398.70	0.00	27.8	393.2	Dry	21.6	335.4	
8/29/2008	395.00	0.00	33.2	387.8		22.4	334.6	
9/25/2008	391.70	0.00	35.3	385.7		23.1	333.9	
10/28/2008	384.05	0.00	42.0	379.1		25.5	331.6	
11/26/2008	391.10	1.94	40.7	380.3		27.0	330.0	
12/31/2008	397.90	3.20	33.7	387.3		25.3	331.7	
1/29/2009	393.40	0.34	34.9	386.1		22.7	334.3	
2/25/2009	398.60	3.91	33.3	387.7		21.0	336.0	
3/31/2009	393.40	0.16	35.2	385.8		20.1	336.9	
4/28/2009	400.70	0.10	31.5	389.5		20.8	336.2	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	30.6	390.4		20.6	336.4	
5/27/2009	400.10	0.00	30.8	390.2		20.7	336.3	
6/29/2009	403.00	0.15	28.3	392.7		20.4	336.6	
7/28/2009	396.53	0.00	32.3	388.7		20.0	337.0	
8/25/2009	396.60	0.00	33.0	388.0		21.1	335.9	
9/30/2009	393.10	0.00	36.4	384.6		22.7	334.3	
10/28/2009	401.60	0.42	30.9	390.1		22.4	334.6	
11/30/2009	402.50	0.00	29.0	392.0		19.6	337.4	
12/29/2009	399.90	2.80	30.5	390.5		19.4	337.6	
1/26/2010	401.10	6.75	30.0	391.0		19.8	337.2	
2/23/2010	402.50	2.66	28.8	392.2		18.7	338.3	
3/30/2010	400.00	1.25	30.2	390.8		18.2	338.8	
4/4/2010	399.60		30.4	390.6		18.4	338.6	
4/27/2010	403.80	1.32	28.7	392.3		18.8	338.2	
5/26/2010	403.60	0.03	27.8	393.2		18.4	338.6	
6/29/2010	397.70	0.00	31.4	389.6		18.9	338.1	
7/27/2010	396.30	0.00	32.9	388.1		20.4	336.6	
8/26/2010	390.70	0.00	41.6	379.4		22.0	335.0	
9/28/2010	390.30	0.00	38.9	382.1		24.5	332.5	
10/26/2010	403.20	1.56	29.5	391.5		25.0	332.0	
11/30/2010	397.10	1.34	32.8	388.2		23.4	333.6	
12/28/2010	401.40	9.03	29.7	391.3		23.5	333.5	
1/27/2011	393.80	1.10	33.4	387.6		23.2	333.8	
2/23/2011	391.70	1.17	36.7	384.3		24.3	332.7	
3/29/2011	403.00	3.10	29.7	391.3		24.3	332.7	
4/27/2011	401.20	0.33	30.3	390.7		23.3	333.7	
5/26/2011	399.50	0.48	31.3	389.7		23.1	333.9	
6/28/2011	391.00	0.02	36.6	384.4		23.8	333.2	
7/26/2011	384.00	0.00	43.6	377.4		25.3	331.7	
8/24/2011	382.80	0.00	45.9	375.1		26.7	330.3	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	47.4	373.6		25.9	331.1	
10/26/2011	383.90	0.98	46.2	374.8		28.2	328.8	
11/22/2011	389.80	1.46	42.9	378.1		28.3	328.7	
12/28/2011	382.30	0.35	45.8	375.2		28.2	328.8	
1/25/2012	387.50	1.17	47.3	373.8		28.7	328.3	
2/28/2012	381.10	0.79	49.0	372.0		29.0	328.0	
3/27/2012	387.70	1.61	46.6	374.4		29.3	327.7	
4/23/2012	392.30	1.51	42.0	379.0		28.9	328.1	
5/25/2012	388.30	0.06	41.8	379.2		28.2	328.8	
6/13/2012	385.10	0.06	44.4	376.6		27.9	329.1	
6/26/2012	386.90	0.00	43.9	377.1		25.9	331.1	
7/24/2012	378.00	0.10	49.1	371.9		28.3	328.7	
8/8/2012	382.90	0.10	47.5	373.5		28.7	328.3	
8/29/2012	382.70	0.00	48.3	372.7		29.0	328.0	
8/29/2012	382.70	0.00	48.3	372.7		29.0	328.0	
9/25/2012	381.90	0.00	49.7	371.3		29.3	327.7	
10/24/2012	384.40	0.08	48.1	372.9		29.7	327.3	
11/27/2012	389.60	0.86	43.4	377.6		29.1	327.9	
12/18/2012	394.70	1.96	39.5	381.5		28.5	328.5	
1/23/2013	393.00	1.53	37.4	383.6		27.4	329.6	
2/26/2013	391.50	0.49	38.2	382.8		26.8	330.2	
3/26/2013	394.40	1.00	39.0	382.0		27.3	329.7	
4/25/2013	391.00	0.01	39.3	381.7		26.8	330.2	
5/22/2013	392.00	0.00	38.2	382.8		26.8	330.2	
6/25/2013	380.60	0.00	44.7	376.3		27.0	330.0	
7/23/2013	380.20	0.00	47.9	373.1		27.9	329.1	
8/21/2013	379.60	0.00	47.8	373.2		28.5	328.5	
9/25/2013	382.20	0.00	47.8	373.2		29.2	327.8	
10/29/2013	382.00	0.00	48.8	372.2		29.8	327.2	
11/26/2013	390.10	0.44	46.1	374.9		29.7	327.3	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	39.5	381.5		29.3	327.7	
1/28/2014	392.30	0.00	38.5	382.5		28.2	328.8	
2/26/2014	389.90	0.72	39.6	381.4		27.4	329.6	
3/26/2014	387.20		41.3	379.7		27.5	329.5	
3/28/2014	387.20	1.78	41.7	379.3		22.5	334.5	
4/23/2014	393.00	0.34	39.5	381.5		27.7	329.3	
5/28/2014	387.50	0.00	41.0	380.0		27.5	329.5	
6/25/2014	388.70	0.00	40.8	380.2		28.7	328.3	
7/29/2014	382.80	0.00	44.8	376.2		27.9	329.1	
8/28/2014	386.80	0.04	44.0	377.0		28.4	328.6	
9/24/2014	387.90	0.00	41.8	379.2		28.5	328.5	
10/29/2014	383.90	0.00	44.4	376.6		28.7	328.3	
11/21/2014	388.30	0.35	41.7	379.3		28.8	328.2	
12/22/2014	399.80	4.75	34.0	387.0		28.5	328.5	
1/28/2015	396.90	1.28	34.4	386.6		27.5	329.5	
2/24/2015	392.70	0.34	36.7	384.3		27.2	329.8	
3/31/2015	388.90	0.67	37.7	383.3		26.8	330.2	
4/23/2015	390.30	0.20	38.7	382.3		27.0	330.0	
5/28/2015	400.30	1.87	31.7	389.3		27.0	330.0	
6/24/2015	400.70	0.00	31.1	389.9		26.5	330.5	
7/30/2015	400.20	0.00	30.8	390.2		26.3	330.7	
8/25/2015	384.00	0.00	38.9	382.1		26.1	330.9	
9/23/2015	388.60	2.17	40.7	380.3		27.0	330.0	
10/29/2015	387.60	0.16	41.6	379.4		27.5	329.5	
11/25/2015	386.90	0.15	42.0	379.0		27.9	329.1	
12/23/2015	395.90	1.55	37.7	383.3		27.4	329.6	
1/26/2016	401.20	2.86	31.7	389.3		32.7	324.3	
2/24/2016	393.60	0.39	35.7	385.3		27.0	330.0	
3/29/2016	397.10	1.55	33.8	387.2		26.8	330.2	
4/29/2016	391.60	0.04	36.4	384.6		27.0	330.0	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	32.1	388.9		26.8	330.2	
6/29/2016	392.50	0.00	35.6	385.4		26.6	330.4	
7/26/2016	377.70	0.00	45.2	375.8		27.2	329.8	
8/24/2016	388.10	0.00	43.9	377.1		27.9	329.1	
9/29/2016	388.20	0.00	42.6	378.4		28.3	328.7	
10/26/2016	392.10	0.96	41.8	379.2		28.4	328.6	
11/22/2016	395.70	1.42	37.4	383.6		28.2	328.8	
12/28/2016	400.70	4.11	33.8	387.2		27.6	329.4	
1/26/2017	402.40	6.70	30.3	390.7		26.8	330.2	
2/28/2017	389.60	4.01	37.7	383.3		26.6	330.4	
3/29/2017	391.80	0.14	38.9	382.1		27.0	330.0	
4/26/2017	387.00	0.04	40.9	380.1		27.3	329.7	
5/23/2017	399.40	0.30	34.0	387.0		27.5	329.5	
6/21/2017	392.60	0.00	36.6	384.4		27.2	329.8	
7/26/2017	384.60	0.00	42.3	378.7		24.2	332.8	
8/30/2017	383.00	0.00	45.1	375.9		28.1	328.9	
9/27/2017	382.00	0.00	47.9	373.1		28.6	328.4	
10/27/2017	375.00	0.00	50.9	370.1		29.2	327.8	
11/30/2017	382.80	0.14	48.7	372.3		29.8	327.2	
12/21/2017	380.50	0.00	49.5	371.5		29.8	327.2	
1/24/2018	397.80	1.43	39.3	381.7		30.1	326.9	
2/21/2018	382.40	0.17	44.4	376.6		29.0	328.0	
3/29/2018	392.10	0.00	40.7	380.3		28.7	328.3	
4/25/2018	388.00	0.05	45.0	376.0		28.6	328.4	
5/30/2018	399.50	0.21	36.2	384.8		28.6	328.4	
6/28/2018	398.90	0.00	33.2	387.8		27.8	329.2	
7/25/2018	388.60	0.00	38.7	382.3		27.3	329.7	
8/24/2018	378.60	0.00	47.8	373.2		27.8	329.2	
9/27/2018	381.40	0.00	48.3	372.7		28.7	328.3	
10/18/2018	385.20	1.45	46.6	374.4		29.1	327.9	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	50.2	370.8		29.7	327.3	
12/20/2018	394.20	2.12	41.1	379.9		29.7	327.3	
2/21/2019	396.00	8.26	34.70	386.3		27.90	329.1	
3/27/2019	376.00	1.88	43.80	377.2		27.40	329.6	
4/25/2019	377.70	0.03	47.00	374.0		27.90	329.1	
5/30/2019	395.30	0.92	39.10	381.9		28.50	328.5	
6/26/2019	388.40	0.01	40.70	380.3		28.10	328.9	
7/5/2019	385.50	0.00	42.50	378.5		32.90	324.1	
7/30/2019	385.20	0.00	46.20	374.8		28.30	328.7	
8/27/2019	387.90	0.00	42.40	378.6		28.60	328.4	
9/26/2019	380.00	0.00	47.90	373.1		28.80	328.2	
10/23/2019	378.90	0.00	50.30	370.7		29.20	327.8	
11/26/2019	383.80	2.60	49.10	371.9		29.80	327.2	
12/18/2019	389.20	4.63	44.50	376.5		29.90	327.1	
1/29/2020	388.20	0.15	43.00	378.0		29.10	327.9	
2/25/2020	384.70	0.33	45.10	375.9		28.90	328.1	
3/24/2020	391.70	3.91	41.90	379.1		28.90	328.1	
4/23/2020	399.40	4.05	34.40	386.6		28.50	328.5	
5/27/2020	388.50	0.40	58.50	362.5	Omitted	27.70	329.3	
6/24/2020	388.00	0.01	41.40	379.6		27.80	329.2	
7/29/2020	358.70	0.00	42.50	378.5		27.90	329.1	
8/26/2020	379.30	0.00	47.90	373.1		28.30	328.7	
9/29/2020	381.30	0.00	48.50	372.5		28.90	328.1	
10/28/2020	376.50	0.00	51.30	369.7		29.60	327.4	
11/24/2020	380.70	0.25	50.20	370.8		30.00	327.0	
12/23/2020	384.10	1.40	48.00	373.0		30.20	326.8	
1/26/2021	386.2	2.42	45.6	375.43		31.4	325.61	
2/25/2021	385.4	0.07	44.6	376.43		29.3	327.71	
3/23/2021	394.8	1.35	39.2	381.83		29	328.01	
4/27/2021	384.1	0.04	44.2	376.83		28.7	328.31	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-52			P-61		
Top of Well Elevation -->			421.03			357.01		
Bottom of Well Elevation -->			361.20			311.00		
Depth of Well			59.8			46.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	44.9	376.13		28.6	328.41	
6/30/2021	385.4	0	45.6	375.43		29.2	327.81	
7/29/2021	381.7	0.03	49.1	371.93		29.3	327.71	
8/24/2021	383.4	0	48.6	372.43		33.3	323.71	
9/28/2021	381.3	0.06	47.2	373.83		29.8	327.21	
10/27/2021	382.7	0.71	49.9	371.13		30	327.01	
11/23/2021	381	0	50.1	370.93		30.3	326.71	
12/21/2021	386.3	6.1	47.2	373.83		30.5	326.51	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		26.8	385.2		44.9	377.2	
2/28/2007	380.90		30.5	381.5		45.5	376.6	
3/29/2007	397.00		27.3	384.7		45.8	376.3	
4/27/2007	405.60		17.6	394.4		46.0	376.1	
5/24/2007	404.40		15.9	396.1		46.1	376.0	
6/28/2007	396.90		17.8	394.2		46.0	376.1	
7/31/2007	392.60		21.7	390.3		46.2	375.9	
8/29/2007	388.60		24.5	387.5		46.7	375.4	
9/2/2007	387.40		24.0	388.0		46.7	375.4	
9/26/2007	387.90		25.3	386.7		46.8	375.3	
10/25/2007	382.00		27.3	384.7		47.4	374.7	
11/27/2007	380.30		30.6	381.4		47.8	374.3	
12/27/2007	381.40		32.0	380.0		48.2	373.9	
1/31/2008	381.20		31.8	380.3		48.8	373.3	
2/28/2008	393.10		26.3	385.7		49.0	373.1	
3/27/2008	387.90		23.5	388.5		49.3	372.8	
4/28/2008	404.70		15.8	396.2		49.5	372.6	
5/28/2008	404.00		14.3	397.7		44.5	377.6	
6/25/2008	400.20		15.5	396.5		49.3	372.8	
7/29/2008	398.70		16.3	395.7		49.1	373.0	
7/30/2008	398.70	0.00	16.3	395.7		49.2	372.9	
8/29/2008	395.00	0.00	18.7	393.3		4.2	417.9	Cleaning
9/25/2008	391.70	0.00	18.8	393.2		11.0	411.1	
10/28/2008	384.05	0.00	26.4	385.6		15.8	406.3	
11/26/2008	391.10	1.94	27.5	384.5		17.8	404.3	
12/31/2008	397.90	3.20	21.6	390.4		18.7	403.4	
1/29/2009	393.40	0.34	23.2	388.8		19.6	402.5	
2/25/2009	398.60	3.91	21.5	390.5		20.1	402.0	
3/31/2009	393.40	0.16	21.9	390.1		20.6	401.5	
4/28/2009	400.70	0.10	20.3	391.7		21.2	400.9	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	18.7	393.3		21.5	400.6	
5/27/2009	400.10	0.00	18.8	393.2		48.8	373.3	
6/29/2009	403.00	0.15	15.9	396.1		48.6	373.5	
7/28/2009	396.53	0.00	19.2	392.8		48.5	373.6	
8/25/2009	396.60	0.00	20.4	391.6		48.4	373.7	
9/30/2009	393.10	0.00	23.6	388.4		48.5	373.6	
10/28/2009	401.60	0.42	19.6	392.4		48.5	373.6	
11/30/2009	402.50	0.00	16.7	395.3		48.3	373.8	
12/29/2009	399.90	2.80	17.3	394.7		48.3	373.8	
1/26/2010	401.10	6.75	15.7	396.3		48.3	373.8	
2/23/2010	402.50	2.66	14.6	397.4		48.2	373.9	
3/30/2010	400.00	1.25	16.5	395.5		48.0	374.1	
4/4/2010	399.60		16.9	395.1		48.0	374.1	
4/27/2010	403.80	1.32	15.7	396.3		48.0	374.1	
5/26/2010	403.60	0.03	15.4	396.6		47.8	374.3	
6/29/2010	397.70	0.00	17.7	394.3		47.6	374.5	
7/27/2010	396.30	0.00	18.9	393.1		47.5	374.6	
8/26/2010	390.70	0.00	20.8	391.2		47.5	374.6	
9/28/2010	390.30	0.00	24.8	387.2		47.8	374.3	
10/26/2010	403.20	1.56	19.8	392.2		47.9	374.2	
11/30/2010	397.10	1.34	19.5	392.5		47.7	374.4	
12/28/2010	401.40	9.03	12.0	400.0		47.7	374.4	
1/27/2011	393.80	1.10	17.2	394.8		47.7	374.4	
2/23/2011	391.70	1.17	22.0	390.0		47.8	374.3	
3/29/2011	403.00	3.10	17.6	394.4		47.8	374.3	
4/27/2011	401.20	0.33	17.2	394.8		47.7	374.4	
5/26/2011	399.50	0.48	18.2	393.8		47.7	374.4	
6/28/2011	391.00	0.02	22.6	389.4		47.7	374.4	
7/26/2011	384.00	0.00	26.2	385.8		47.8	374.3	
8/24/2011	382.80	0.00	30.6	381.4		48.1	374.0	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	32.0	380.0		48.6	373.5	
10/26/2011	383.90	0.98	31.9	380.1		48.6	373.5	
11/22/2011	389.80	1.46	29.9	382.1		48.9	373.2	
12/28/2011	382.30	0.35	31.5	380.5		49.0	373.1	
1/25/2012	387.50	1.17	34.0	378.0		49.4	372.7	
2/28/2012	381.10	0.79	34.6	377.4		49.6	372.5	
3/27/2012	387.70	1.61	34.2	377.8		49.8	372.3	
4/23/2012	392.30	1.51	31.1	380.9		50.0	372.1	
5/25/2012	388.30	0.06	28.9	383.1		50.2	371.9	
6/13/2012	385.10	0.06	30.7	381.3		50.2	371.9	
6/26/2012	386.90	0.00	30.9	381.1		50.3	371.8	
7/24/2012	378.00	0.10	33.6	378.4		50.4	371.7	
8/8/2012	382.90	0.10	30.6	381.4		50.6	371.5	
8/29/2012	382.70	0.00	33.8	378.2		50.8	371.3	
8/29/2012	382.70	0.00	33.8	378.2		50.8	371.3	
9/25/2012	381.90	0.00	33.8	378.2		50.9	371.2	
10/24/2012	384.40	0.08	33.0	379.0		51.2	370.9	
11/27/2012	389.60	0.86	30.8	381.2		51.4	370.7	
12/18/2012	394.70	1.96	28.6	383.4		51.4	370.7	
1/23/2013	393.00	1.53	25.0	387.0		51.5	370.6	
2/26/2013	391.50	0.49	25.7	386.3		51.4	370.7	
3/26/2013	394.40	1.00	27.0	385.0		51.6	370.5	
4/25/2013	391.00	0.01	26.4	385.6		51.6	370.5	
5/22/2013	392.00	0.00	25.0	387.0		51.6	370.5	
6/25/2013	380.60	0.00	28.4	383.6		51.8	370.3	
7/23/2013	380.20	0.00	30.5	381.5		51.9	370.2	
8/21/2013	379.60	0.00	30.8	381.2		52.1	370.0	
9/25/2013	382.20	0.00	30.9	381.1		52.4	369.7	
10/29/2013	382.00	0.00	32.4	379.6		52.6	369.5	
11/26/2013	390.10	0.44	31.6	380.4		52.7	369.4	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	28.0	384.0		52.8	369.3	
1/28/2014	392.30	0.00	24.5	387.5		52.8	369.3	
2/26/2014	389.90	0.72	25.5	386.5		52.8	369.3	
3/26/2014	387.20		26.8	385.2		52.9	369.2	
3/28/2014	387.20	1.78	27.0	385.0		52.9	369.2	
4/23/2014	393.00	0.34	26.8	385.2		52.9	369.2	
5/28/2014	387.50	0.00	24.9	387.1		53.0	369.1	
6/25/2014	388.70	0.00	25.8	386.2		53.0	369.1	
7/29/2014	382.80	0.00	28.6	383.4		53.2	368.9	
8/28/2014	386.80	0.04	28.6	383.4		53.3	368.8	
9/24/2014	387.90	0.00	27.2	384.8		53.3	368.8	
10/29/2014	383.90	0.00	28.4	383.6		53.5	368.6	
11/21/2014	388.30	0.35	26.7	385.3		53.6	368.5	
12/22/2014	399.80	4.75	22.2	389.8		53.5	368.6	
1/28/2015	396.90	1.28	21.6	390.4		53.7	368.4	
2/24/2015	392.70	0.34	22.8	389.2		53.5	368.6	
3/31/2015	388.90	0.67	23.1	388.9		53.4	368.7	
4/23/2015	390.30	0.20	24.2	387.8		53.4	368.7	
5/28/2015	400.30	1.87	19.9	392.1		53.5	368.6	
6/24/2015	400.70	0.00	19.5	392.5		53.3	368.8	
7/30/2015	400.20	0.00	19.0	393.0		53.2	368.9	
8/25/2015	384.00	0.00	23.8	388.2		52.9	369.2	
9/23/2015	388.60	2.17	28.1	383.9		53.2	368.9	
10/29/2015	387.60	0.16	29.1	382.9		53.2	368.9	
11/25/2015	386.90	0.15	29.6	382.4		53.3	368.8	
12/23/2015	395.90	1.55	27.8	384.3		53.2	368.9	
1/26/2016	401.20	2.86	21.4	390.7		53.2	368.9	
2/24/2016	393.60	0.39	23.3	388.7		53.1	369.0	
3/29/2016	397.10	1.55	22.5	389.5		53.1	369.0	
4/29/2016	391.60	0.04	24.4	387.7		52.9	369.2	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	22.5	389.5		52.9	369.2	
6/29/2016	392.50	0.00	22.9	389.1		52.8	369.3	
7/26/2016	377.70	0.00	30.0	382.0		52.9	369.2	
8/24/2016	388.10	0.00	32.9	379.1		52.9	369.2	
9/29/2016	388.20	0.00	31.9	380.1		52.9	369.2	
10/26/2016	392.10	0.96	32.5	379.5		53.0	369.1	
11/22/2016	395.70	1.42	28.3	383.7		53.1	369.0	
12/28/2016	400.70	4.11	24.2	387.8		53.1	369.0	
1/26/2017	402.40	6.70	19.3	392.7		52.8	369.3	
2/28/2017	389.60	4.01	24.5	387.5		52.8	369.3	
3/29/2017	391.80	0.14	27.6	384.4		52.8	369.3	
4/26/2017	387.00	0.04	28.7	383.3		52.8	369.3	
5/23/2017	399.40	0.30	24.9	387.1		52.9	369.2	
6/21/2017	392.60	0.00	25.0	387.0		52.7	369.4	
7/26/2017	384.60	0.00	29.6	382.4		52.7	369.4	
8/30/2017	383.00	0.00	32.9	379.1		52.7	369.4	
9/27/2017	382.00	0.00	35.6	376.4		52.9	369.2	
10/27/2017	375.00	0.00	37.5	374.5		53.2	368.9	
11/30/2017	382.80	0.14	37.7	374.3		53.2	368.9	
12/21/2017	380.50	0.00	37.7	374.3		53.3	368.8	
1/24/2018	397.80	1.43	33.2	378.8		53.5	368.6	
2/21/2018	382.40	0.17	32.0	380.0		70.6	351.5	
3/29/2018	392.10	0.00	30.7	381.3		70.2	351.9	
4/25/2018	388.00	0.05	34.0	378.0		69.8	352.3	
5/30/2018	399.50	0.21	29.5	382.5		69.4	352.7	
6/28/2018	398.90	0.00	24.1	387.9		68.9	353.2	
7/25/2018	388.60	0.00	26.3	385.7		68.5	353.6	
8/24/2018	378.60	0.00	33.4	378.6		68.1	354.0	
9/27/2018	381.40	0.00	36.0	376.0		67.8	354.3	
10/18/2018	385.20	1.45	35.7	376.3		67.7	354.4	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	38.1	373.9		67.4	354.7	
12/20/2018	394.20	2.12	33.3	378.7		67.3	354.8	
2/21/2019	396.00	8.26	23.50	388.5		66.50	355.6	
3/27/2019	376.00	1.88	54.70	357.3	Omitted	66.00	356.1	
4/25/2019	377.70	0.03	32.30	379.7				Blocked,NotRead
5/30/2019	395.30	0.92	30.20	381.8		65.10	357.0	
6/26/2019	388.40	0.01	28.80	383.2		64.80	357.3	
7/5/2019	385.50	0.00	29.80	382.2		64.70	357.4	
7/30/2019	385.20	0.00	33.50	378.5		64.20	357.9	
8/27/2019	387.90	0.00	31.40	380.6		64.40	357.7	
9/26/2019	380.00	0.00	35.30	376.7		64.10	358.0	
10/23/2019	378.90	0.00	36.90	375.1		64.00	358.1	
11/26/2019	383.80	2.60	38.20	373.8		71.20	350.9	Omitted
12/18/2019	389.20	4.63	35.20	376.8		63.80	358.3	
1/29/2020	388.20	0.15	32.10	379.9		63.60	358.5	
2/25/2020	384.70	0.33	33.30	378.7		63.40	358.7	
3/24/2020	391.70	3.91	32.40	379.6		63.30	358.8	
4/23/2020	399.40	4.05	26.30	385.7		63.00	359.1	
5/27/2020	388.50	0.40	28.10	383.9		70.50	351.6	Omitted
6/24/2020	388.00	0.01	29.60	382.4		62.50	359.6	
7/29/2020	358.70	0.00	30.30	381.7		62.00	360.1	
8/26/2020	379.30	0.00	33.80	378.2		62.10	360.0	
9/29/2020	381.30	0.00	36.00	376.0		61.90	360.2	
10/28/2020	376.50	0.00	38.20	373.8		62.20	359.9	
11/24/2020	380.70	0.25	38.50	373.5		62.00	360.1	
12/23/2020	384.10	1.40	37.50	374.5		61.80	360.3	
1/26/2021	386.2	2.42	34.7	377.33		61.7	360.38	
2/25/2021	385.4	0.07	32.6	379.43		61.6	360.48	
3/23/2021	394.8	1.35	30.7	381.33		61.5	360.58	
4/27/2021	384.1	0.04	32	380.03		61.2	360.88	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-62			P-63		
Top of Well Elevation -->			412.03			422.08		
Bottom of Well Elevation -->			365.50			335.00		
Depth of Well			46.5			87.1		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	33.3	378.73		61.1	360.98	
6/30/2021	385.4	0	34.7	377.33		61.1	360.98	
7/29/2021	381.7	0.03	37.4	374.63		61	361.08	
8/24/2021	383.4	0	37.9	374.13		60.9	361.18	
9/28/2021	381.3	0.06	36	376.03		60.9	361.18	
10/27/2021	382.7	0.71	38.8	373.23		60.8	361.28	
11/23/2021	381	0	38.9	373.13		60.8	361.28	
12/21/2021	386.3	6.1	37.8	374.23		60.8	361.28	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		46.7	341.3		31.6	343.1	
2/28/2007	380.90		48.5	339.5		33.2	341.5	
3/29/2007	397.00		43.9	344.1		32.1	342.6	
4/27/2007	405.60		40.0	348.0		29.0	345.7	
5/24/2007	404.40		39.7	348.3		27.4	347.3	
6/28/2007	396.90		41.6	346.4		27.0	347.7	
7/31/2007	392.60		34.5	353.5		27.1	347.6	
8/29/2007	388.60		45.0	343.0		28.6	346.1	
9/2/2007	387.40		45.3	342.7		28.8	345.9	
9/26/2007	387.90		45.6	342.4		29.6	345.1	
10/25/2007	382.00		47.4	340.6		30.8	343.9	
11/27/2007	380.30		48.7	339.3		32.5	342.2	
12/27/2007	381.40		48.5	339.5		33.5	341.2	
1/31/2008	381.20		49.2	338.8		34.5	340.2	
2/28/2008	393.10		44.9	343.1		32.8	341.9	
3/27/2008	387.90		45.8	342.2		32.3	342.4	
4/28/2008	404.70		40.1	347.9		29.1	345.6	
5/28/2008	404.00		39.9	348.1		27.1	347.6	
6/25/2008	400.20		40.5	347.5		26.3	348.4	
7/29/2008	398.70		41.3	346.7		26.2	348.5	
7/30/2008	398.70	0.00	41.3	346.7		26.1	348.6	
8/29/2008	395.00	0.00	43.0	345.0		26.9	347.8	
9/25/2008	391.70	0.00	44.0	344.0		28.1	346.6	
10/28/2008	384.05	0.00	47.2	340.8		29.9	344.8	
11/26/2008	391.10	1.94	46.0	342.0		31.0	343.7	
12/31/2008	397.90	3.20	42.7	345.3		29.2	345.5	
1/29/2009	393.40	0.34	43.8	344.2		29.4	345.3	
2/25/2009	398.60	3.91	42.3	345.7		28.8	345.9	
3/31/2009	393.40	0.16	43.4	344.6		28.4	346.3	
4/28/2009	400.70	0.10	41.4	346.6		27.8	346.9	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	41.1	346.9		27.3	347.4	
5/27/2009	400.10	0.00	41.2	346.8		27.3	347.4	
6/29/2009	403.00	0.15	40.1	347.9		26.2	348.5	
7/28/2009	396.53	0.00	42.1	345.9		26.9	347.8	
8/25/2009	396.60	0.00	42.4	345.6		27.5	347.2	
9/30/2009	393.10	0.00	44.0	344.0		28.6	346.1	
10/28/2009	401.60	0.42	41.2	346.8		27.6	347.1	
11/30/2009	402.50	0.00	40.5	347.5		26.2	348.5	
12/29/2009	399.90	2.80	41.3	346.7		26.3	348.4	
1/26/2010	401.10	6.75	41.0	347.0		26.7	348.0	
2/23/2010	402.50	2.66	40.5	347.5		25.5	349.2	
3/30/2010	400.00	1.25	41.1	346.9		24.9	349.8	
4/4/2010	399.60		41.4	346.6		25.1	349.6	
4/27/2010	403.80	1.32	40.2	347.8		25.0	349.7	
5/26/2010	403.60	0.03	40.1	347.9		24.8	349.9	
6/29/2010	397.70	0.00	41.9	346.1		25.7	349.0	
7/27/2010	396.30	0.00	42.7	345.3		26.5	348.2	
8/26/2010	390.70	0.00	44.7	343.3		27.6	347.1	
9/28/2010	390.30	0.00	45.5	342.5		29.1	345.6	
10/26/2010	403.20	1.56	41.6	346.4		28.1	346.6	
11/30/2010	397.10	1.34	42.5	345.5		27.6	347.1	
12/28/2010	401.40	9.03	41.4	346.6		27.1	347.6	
1/27/2011	393.80	1.10	43.2	344.8		25.7	349.0	
2/23/2011	391.70	1.17	44.5	343.5		27.0	347.7	
3/29/2011	403.00	3.10	41.0	347.0		26.2	348.5	
4/27/2011	401.20	0.33	41.3	346.7		25.9	348.8	
5/26/2011	399.50	0.48	41.9	346.1		26.5	348.3	
6/28/2011	391.00	0.02	43.6	344.4		27.8	346.9	
7/26/2011	384.00	0.00	47.3	340.7		30.0	344.7	
8/24/2011	382.80	0.00	47.9	340.1		31.5	343.2	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	48.6	339.4		32.8	341.9	
10/26/2011	383.90	0.98	47.9	340.1		33.0	341.7	
11/22/2011	389.80	1.46	46.1	341.9		32.7	342.0	
12/28/2011	382.30	0.35	47.9	340.1		33.2	341.5	
1/25/2012	387.50	1.17	47.8	340.2		34.1	340.6	
2/28/2012	381.10	0.79	49.2	338.8		34.6	340.1	
3/27/2012	387.70	1.61	47.4	340.6		34.7	340.0	
4/23/2012	392.30	1.51	45.4	342.6		33.4	341.4	
5/25/2012	388.30	0.06	46.3	341.7		32.9	341.8	
6/13/2012	385.10	0.06	47.1	340.9		33.3	341.4	
6/26/2012	386.90	0.00	46.7	341.3		33.4	341.3	
7/24/2012	378.00	0.10	49.4	338.6		34.6	340.1	
8/8/2012	382.90	0.10	48.3	339.7		34.6	340.1	
8/29/2012	382.70	0.00	48.8	339.2		34.8	339.9	
8/29/2012	382.70	0.00	48.7	339.3		34.8	339.9	
9/25/2012	381.90	0.00	49.4	338.6		35.0	339.7	
10/24/2012	384.40	0.08	48.4	339.6		35.0	339.7	
11/27/2012	389.60	0.86	46.3	341.7		33.7	341.0	
12/18/2012	394.70	1.96	44.4	343.6		32.7	342.0	
1/23/2013	393.00	1.53	44.0	344.0		31.3	343.4	
2/26/2013	391.50	0.49	44.6	343.4		31.2	343.5	
3/26/2013	394.40	1.00	44.7	343.3		31.7	343.0	
4/25/2013	391.00	0.01	44.9	343.1		31.3	343.4	
5/22/2013	392.00	0.00	44.5	343.5		30.9	343.8	
6/25/2013	380.60	0.00	47.9	340.1		32.4	342.3	
7/23/2013	380.20	0.00	49.0	339.0		33.6	341.1	
8/21/2013	379.60	0.00	49.1	338.9		34.2	340.5	
9/25/2013	382.20	0.00	48.8	339.2		34.5	340.2	
10/29/2013	382.00	0.00	49.4	338.6		35.4	339.3	
11/26/2013	390.10	0.44	46.9	341.1		34.6	340.1	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	44.5	343.5		32.9	341.8	
1/28/2014	392.30	0.00	44.4	343.6		31.8	342.9	
2/26/2014	389.90	0.72	45.2	342.8		31.5	343.2	
3/26/2014	387.20		46.0	342.0		31.7	343.0	
3/28/2014	387.20	1.78	46.2	341.8		31.9	342.8	
4/23/2014	393.00	0.34	44.8	343.2		32.3	342.4	
5/28/2014	387.50	0.00	46.2	341.8		31.8	342.9	
6/25/2014	388.70	0.00	46.0	342.0		32.2	342.5	
7/29/2014	382.80	0.00	47.9	340.1		33.1	341.6	
8/28/2014	386.80	0.04	47.3	340.7		33.5	341.2	
9/24/2014	387.90	0.00	46.4	341.6		32.8	341.9	
10/29/2014	383.90	0.00	47.8	340.2		33.6	341.1	
11/21/2014	388.30	0.35	46.5	341.5		33.0	341.7	
12/22/2014	399.80	4.75	42.6	345.4		31.1	343.6	
1/28/2015	396.90	1.28	43.0	345.0		30.0	344.7	
2/24/2015	392.70	0.34	44.2	343.8		29.9	344.8	
3/31/2015	388.90	0.67	44.8	343.2		29.3	345.4	
4/23/2015	390.30	0.20	45.2	342.8		29.9	344.8	
5/28/2015	400.30	1.87	41.9	346.1		28.5	346.2	
6/24/2015	400.70	0.00	41.5	346.5		27.9	346.8	
7/30/2015	400.20	0.00	41.6	346.4		27.4	347.3	
8/25/2015	384.00	0.00	45.9	342.1		28.5	346.2	
9/23/2015	388.60	2.17	45.8	342.2		30.4	344.3	
10/29/2015	387.60	0.16	46.3	341.7		31.3	343.4	
11/25/2015	386.90	0.15	46.5	341.5		31.7	343.0	
12/23/2015	395.90	1.55	44.8	343.2		31.7	343.0	
1/26/2016	401.20	2.86	41.8	346.2		29.4	345.4	
2/24/2016	393.60	0.39	44.0	344.0		29.5	345.2	
3/29/2016	397.10	1.55	42.7	345.3		28.9	345.8	
4/29/2016	391.60	0.04	44.3	343.7		26.2	348.5	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	42.0	346.0		28.7	346.0	
6/29/2016	392.50	0.00	44.1	343.9		28.7	346.0	
7/26/2016	377.70	0.00	48.5	339.5		31.1	343.6	
8/24/2016	388.10	0.00	46.7	341.3		32.4	342.3	
9/29/2016	388.20	0.00	46.3	341.7		32.5	342.2	
10/26/2016	392.10	0.96	46.4	341.6		32.7	342.0	
11/22/2016	395.70	1.42	43.9	344.1		31.5	343.2	
12/28/2016	400.70	4.11	40.9	347.1		30.0	344.7	
1/26/2017	402.40	6.70	41.0	347.0		28.3	346.4	
2/28/2017	389.60	4.01	44.9	343.1		29.3	345.4	
3/29/2017	391.80	0.14	44.9	343.1		30.2	344.5	
4/26/2017	387.00	0.04	46.1	341.9		30.7	344.0	
5/23/2017	399.40	0.30	42.7	345.3		29.8	344.9	
6/21/2017	392.60	0.00	44.2	343.8		29.6	345.1	
7/26/2017	384.60	0.00	46.9	341.1		31.1	343.6	
8/30/2017	383.00	0.00	47.9	340.1		32.6	342.1	
9/27/2017	382.00	0.00	48.7	339.3		33.9	340.8	
10/27/2017	375.00	0.00	50.0	338.0		34.8	339.9	
11/30/2017	382.80	0.14	48.6	339.4		35.0	339.7	
12/21/2017	380.50	0.00	49.2	338.8		35.1	339.6	
1/24/2018	397.80	1.43	44.0	344.0		33.4	341.3	
2/21/2018	382.40	0.17	47.3	340.7		33.2	341.5	
3/29/2018	392.10	0.00	45.2	342.8		32.8	341.9	
4/25/2018	388.00	0.05	46.8	341.2		34.0	340.7	
5/30/2018	399.50	0.21	43.1	344.9		32.3	342.4	
6/28/2018	398.90	0.00	42.3	345.7		30.6	344.1	
7/25/2018	388.60	0.00	45.2	342.8		30.9	343.8	
8/24/2018	378.60	0.00	49.0	339.0		33.4	341.3	
9/27/2018	381.40	0.00	48.8	339.2		34.6	340.1	
10/18/2018	385.20	1.45	47.9	340.1		34.6	340.1	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	49.4	338.6		35.2	339.5	
12/20/2018	394.20	2.12	45.1	342.9		33.8	340.9	
2/21/2019	396.00	8.26	44.20	343.8		31.80	342.9	
3/27/2019	376.00	1.88	46.50	341.5		31.80	342.9	
4/25/2019	377.70	0.03	48.60	339.4		33.00	341.7	
5/30/2019	395.30	0.92	44.30	343.7		32.30	342.4	
6/26/2019	388.40	0.01	45.60	342.4		31.90	342.8	
7/5/2019	385.50	0.00	46.50	341.5		32.10	342.6	
7/30/2019	385.20	0.00	47.70	340.3		33.60	341.1	
8/27/2019	387.90	0.00	46.20	341.8		34.10	340.6	
9/26/2019	380.00	0.00	48.60	339.4		34.40	340.3	
10/23/2019	378.90	0.00	49.70	338.3		34.90	339.8	
11/26/2019	383.80	2.60	48.80	339.2		35.40	339.3	
12/18/2019	389.20	4.63	49.70	338.3		42.50		Omitted
1/29/2020	388.20	0.15	46.20	341.8		33.30	341.4	
2/25/2020	384.70	0.33	47.30	340.7		33.90	340.8	
3/24/2020	391.70	3.91	45.60	342.4		33.30	341.4	
4/23/2020	399.40	4.05	76.50		Omitted	31.60	343.1	
5/27/2020	388.50	0.40	45.60	342.4		31.90	342.8	
6/24/2020	388.00	0.01	45.90	342.1		32.60	342.1	
7/29/2020	358.70	0.00	46.70	341.3		32.60	342.1	
8/26/2020	379.30	0.00	49.00	339.0		33.90	340.8	
9/29/2020	381.30	0.00	49.00	339.0		35.80	338.9	
10/28/2020	376.50	0.00	50.30	337.7		35.80	338.9	
11/24/2020	380.70	0.25	49.80	338.2		36.00	338.7	
12/23/2020	384.10	1.40	48.50	339.5		35.60	339.1	
1/26/2021	386.2	2.42	47.5	340.5		34.6	340.12	
2/25/2021	385.4	0.07	47.1	340.9		33.8	340.92	
3/23/2021	394.8	1.35	44.6	343.4		33.2	341.52	
4/27/2021	384.1	0.04	47.3	340.7		33.8	340.92	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-64			P-65		
Top of Well Elevation -->			388.00			374.72		
Bottom of Well Elevation -->			302.00			325.50		
Depth of Well			86.0			49.2		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	47.6	340.4		34.1	340.62	
6/30/2021	385.4	0	47.7	340.3		34.8	339.92	
7/29/2021	381.7	0.03	47.2	340.8		35.7	339.02	
8/24/2021	383.4	0	48.8	339.2		35.9	338.82	
9/28/2021	381.3	0.06	48.6	339.4		35.2	339.52	
10/27/2021	382.7	0.71	49.3	338.7		36.2	338.52	
11/23/2021	381	0	49.8	338.2		36.3	338.42	
12/21/2021	386.3	6.1	48	340		35.9	338.82	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		23.5	335.8		24.7	330.3	
2/28/2007	380.90		25.2	334.1		26.1	328.9	
3/29/2007	397.00		21.6	337.7		24.3	330.7	
4/27/2007	405.60		18.5	340.8		21.6	333.4	
5/24/2007	404.40		18.0	341.3		21.0	334.0	
6/28/2007	396.90		19.6	339.7		21.6	333.4	
7/31/2007	392.60		20.9	338.4		22.8	332.2	
8/29/2007	388.60		22.2	337.1		23.7	331.3	
9/2/2007	387.40		22.4	336.9		23.9	331.1	
9/26/2007	387.90		22.7	336.6		24.6	330.4	
10/25/2007	382.00		24.2	335.1		25.5	329.5	
11/27/2007	380.30		25.3	334.0		26.3	328.7	
12/27/2007	381.40		25.3	334.0		26.3	328.7	
1/31/2008	381.20		25.8	333.5		27.0	328.0	
2/28/2008	393.10		22.4	336.9		24.6	330.4	
3/27/2008	387.90		22.9	336.4		24.6	330.4	Dry
4/28/2008	404.70		18.4	340.9		21.5	333.5	Dry
5/28/2008	404.00		18.0	341.3		21.5	333.5	Dry
6/25/2008	400.20		18.6	340.7		20.8	334.2	Dry
7/29/2008	398.70		19.2	340.1		21.6	333.4	Dry
7/30/2008	398.70	0.00	19.5	339.9		21.6	333.4	Dry
8/29/2008	395.00	0.00	20.7	338.6		22.6	332.4	Dry
9/25/2008	391.70	0.00	21.7	337.6		23.4	331.6	
10/28/2008	384.05	0.00	24.2	335.1		24.6	330.4	Dry
11/26/2008	391.10	1.94	23.5	335.8		24.5	330.5	Dry
12/31/2008	397.90	3.20	20.7	338.6		23.2	331.8	Dry
1/29/2009	393.40	0.34	21.4	337.9		23.2	331.8	
2/25/2009	398.60	3.91	20.2	339.1		22.6	332.4	Dry
3/31/2009	393.40	0.16	20.9	338.4		22.6	332.4	
4/28/2009	400.70	0.10	19.6	339.7		22.2	332.8	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	19.3	340.0		21.8	333.2	
5/27/2009	400.10	0.00	19.5	339.8		21.6	333.4	
6/29/2009	403.00	0.15	18.6	340.7		21.6	333.4	
7/28/2009	396.53	0.00	20.1	339.2		21.8	333.2	
8/25/2009	396.60	0.00	20.4	338.9		22.6	332.4	
9/30/2009	393.10	0.00	21.7	337.6		23.7	331.3	
10/28/2009	401.60	0.42	19.5	339.8		22.3	332.7	
11/30/2009	402.50	0.00	18.9	340.4		21.4	333.6	
12/29/2009	399.90	2.80	19.3	340.0		21.5	333.5	
1/26/2010	401.10	6.75	19.3	340.0		21.8	333.2	
2/23/2010	402.50	2.66	18.7	340.6		21.4	333.6	
3/30/2010	400.00	1.25	19.2	340.1		21.5	333.5	Dry
4/4/2010	399.60		19.4	339.9		21.6	333.4	Dry
4/27/2010	403.80	1.32	18.6	340.7		20.5	334.5	
5/26/2010	403.60	0.03	18.5	340.8		21.3	333.7	
6/29/2010	397.70	0.00	19.9	339.4		22.0	333.0	
7/27/2010	396.30	0.00	20.6	338.7		22.6	332.4	
8/26/2010	390.70	0.00	22.0	337.3		23.6	331.4	
9/28/2010	390.30	0.00	22.7	336.6		24.6	330.4	Dry
10/26/2010	403.20	1.56	19.8	339.5		22.8	332.2	
11/30/2010	397.10	1.34	20.4	338.9		22.4	332.6	
12/28/2010	401.40	9.03	19.5	339.8		22.3	332.7	
1/27/2011	393.80	1.10	20.8	338.5		22.4	332.6	
2/23/2011	391.70	1.17	21.9	337.4		23.9	331.1	Dry
3/29/2011	403.00	3.10	19.4	339.9		22.0	333.0	
4/27/2011	401.20	0.33	19.5	339.9		22.1	332.9	
5/26/2011	399.50	0.48	19.9	339.4		22.4	332.7	
6/28/2011	391.00	0.02	22.0	337.3		23.8	331.2	
7/26/2011	384.00	0.00	24.3	335.0		25.8	329.2	
8/24/2011	382.80	0.00	24.9	334.4		26.5	328.5	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	25.4	333.9		26.6	328.4	
10/26/2011	383.90	0.98	24.8	334.5		26.2	328.8	
11/22/2011	389.80	1.46	23.5	335.8		25.5	329.5	
12/28/2011	382.30	0.35	24.8	334.5		25.9	329.1	
1/25/2012	387.50	1.17	25.0	334.3		26.8	328.2	
2/28/2012	381.10	0.79	25.9	333.4		26.9	328.1	
3/27/2012	387.70	1.61	24.9	334.4		26.2	328.8	
4/23/2012	392.30	1.51	23.0	336.3		25.3	329.8	
5/25/2012	388.30	0.06	23.2	336.1		25.3	329.7	
6/13/2012	385.10	0.06	24.1	335.2		25.3	329.7	
6/26/2012	386.90	0.00	25.4	333.9		23.9	331.1	
7/24/2012	378.00	0.10	25.9	333.4		26.8	328.2	
8/8/2012	382.90	0.10	25.5	333.8		26.7	328.3	
8/29/2012	382.70	0.00	25.7	333.6		27.1	327.9	
8/29/2012	382.70	0.00	25.7	333.6		27.1	327.9	
9/25/2012	381.90	0.00	26.1	333.2		27.2	327.8	
10/24/2012	384.40	0.08	25.5	333.8		27.0	328.0	
11/27/2012	389.60	0.86	23.7	335.6		25.6	329.4	
12/18/2012	394.70	1.96	22.2	337.1		24.4	330.6	
1/23/2013	393.00	1.53	21.5	337.8		23.6	331.4	
2/26/2013	391.50	0.49	21.9	337.4		23.9	331.1	
3/26/2013	394.40	1.00	22.2	337.1		24.6	330.4	
4/25/2013	391.00	0.01	22.3	337.0		24.2	330.8	
5/22/2013	392.00	0.00	22.0	337.3		24.0	331.0	
6/25/2013	380.60	0.00	24.5	334.8		25.6	329.4	
7/23/2013	380.20	0.00	25.7	333.6		26.6	328.4	
8/21/2013	379.60	0.00	25.7	333.6		26.7	328.3	
9/25/2013	382.20	0.00	25.7	333.6		26.7	328.3	
10/29/2013	382.00	0.00	26.2	333.1		27.4	327.6	
11/26/2013	390.10	0.44	24.4	334.9		26.4	328.6	

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RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	22.3	337.0		25.1	329.9	
1/28/2014	392.30	0.00	21.9	337.4		24.4	330.6	
2/26/2014	389.90	0.72	22.5	336.8		24.4	330.6	
3/26/2014	387.20		23.2	336.1		24.7	330.3	
3/28/2014	387.20	1.78	23.3	336.0		24.7	330.3	
4/23/2014	393.00	0.34	22.4	336.9		25.0	330.0	
5/28/2014	387.50	0.00	23.3	336.0		24.6	330.4	
6/25/2014	388.70	0.00	23.3	336.0		25.2	329.8	
7/29/2014	382.80	0.00	24.8	334.5		25.8	329.2	
8/28/2014	386.80	0.04	24.5	334.8		25.8	329.2	
9/24/2014	387.90	0.00	23.6	335.7		25.8	329.2	
10/29/2014	383.90	0.00	24.8	334.5		26.4	328.6	Dry
11/21/2014	388.30	0.35	23.7	335.6		25.5	329.5	
12/22/2014	399.80	4.75	20.7	338.6		23.4	331.6	
1/28/2015	396.90	1.28	20.8	338.5		23.2	331.8	Dry
2/24/2015	392.70	0.34	21.7	337.6		23.5	331.5	Dry
3/31/2015	388.90	0.67	22.1	337.2		23.9	331.1	Dry
4/23/2015	390.30	0.20	22.5	336.8		24.0	331.0	
5/28/2015	400.30	1.87	19.9	339.4		22.7	332.3	
6/24/2015	400.70	0.00	19.7	339.6		22.5	332.5	Wet
7/30/2015	400.20	0.00	19.8	339.5		22.4	332.6	Wet
8/25/2015	384.00	0.00	22.8	336.5		22.5	332.5	
9/23/2015	388.60	2.17	23.2	336.1		25.2	329.8	Wet
10/29/2015	387.60	0.16	23.6	335.7		25.2	329.8	
11/25/2015	386.90	0.15	23.8	335.5		25.3	329.7	
12/23/2015	395.90	1.55	22.4	336.9		24.7	330.3	
1/26/2016	401.20	2.86	20.8	338.5		22.8	332.2	
2/24/2016	393.60	0.39	21.6	337.7		22.8	332.2	Dry
3/29/2016	397.10	1.55	20.9	338.5		22.9	332.1	Wet
4/29/2016	391.60	0.04	22.1	337.2		23.5	331.5	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	20.3	339.0		23.1	331.9	
6/29/2016	392.50	0.00	21.6	337.7		23.5	331.5	
7/26/2016	377.70	0.00	25.1	334.2		25.5	329.5	
8/24/2016	388.10	0.00	24.0	335.3		26.0	329.0	
9/29/2016	388.20	0.00	23.6	335.7		25.5	329.5	
10/26/2016	392.10	0.96	23.2	336.1		25.3	329.7	
11/22/2016	395.70	1.42	21.7	337.6		24.2	330.8	
12/28/2016	400.70	4.11	20.0	339.3		23.0	332.0	
1/26/2017	402.40	6.70	19.5	339.8		22.0	333.0	
2/28/2017	389.60	4.01	22.2	337.1		22.8	332.2	
3/29/2017	391.80	0.14	22.4	336.9		24.4	330.6	
4/26/2017	387.00	0.04	23.2	336.1		24.8	330.2	
5/23/2017	399.40	0.30	20.8	338.5		23.5	331.5	
6/21/2017	392.60	0.00	21.8	337.5		23.3	331.7	
7/26/2017	384.60	0.00	23.9	335.4		23.7	331.3	Dry
8/30/2017	383.00	0.00	24.8	334.5		23.7	331.3	Dry
9/27/2017	382.00	0.00	25.6	333.7		23.4	331.6	
10/27/2017	375.00	0.00	26.5	332.8		23.5	331.5	
11/30/2017	382.80	0.14	25.7	333.6		23.2	331.8	
12/21/2017	380.50	0.00	26.0	333.3		23.6	331.4	
1/24/2018	397.80	1.43	22.2	337.1		23.5	331.5	
2/21/2018	382.40	0.17	24.2	335.1		24.5	330.5	
3/29/2018	392.10	0.00	22.7	336.6		28.1	326.9	
4/25/2018	388.00	0.05	24.1	335.2		24.6	330.4	
5/30/2018	399.50	0.21	21.3	338.0		23.8	331.2	
6/28/2018	398.90	0.00	20.4	338.9		23.0	332.0	
7/25/2018	388.60	0.00	22.4	336.9		22.9	332.1	
8/24/2018	378.60	0.00	25.5	333.8		22.9	332.1	
9/27/2018	381.40	0.00	25.7	333.6		26.9	328.1	
10/18/2018	385.20	1.45	25.0	334.3		26.8	328.2	

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RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	26.3	333.0		27.4	327.6	
12/20/2018	394.20	2.12	22.8	336.5		25.2	329.8	
2/21/2019	396.00	8.26	20.70	338.6		23.00	332.0	
3/27/2019	376.00	1.88	24.40	334.9		23.00	332.0	
4/25/2019	377.70	0.03	25.00	334.3		23.00	332.0	Dry
5/30/2019	395.30	0.92	22.10	337.2		23.00	332.0	Dry
6/26/2019	388.40	0.01	22.80	336.5		23.00	332.0	Dry
7/5/2019	385.50	0.00	23.40	335.9		23.30	331.7	
7/30/2019	385.20	0.00	24.60	334.7		23.40	331.6	
8/27/2019	387.90	0.00	23.40	335.9		23.40	331.6	
9/26/2019	380.00	0.00	25.50	333.8		23.30	331.7	
10/23/2019	378.90	0.00	26.20	333.1		24.20	330.8	
11/26/2019	383.80	2.60	25.70	333.6		24.30	330.7	
12/18/2019	389.20	4.63	23.90	335.4		24.30	330.7	
1/29/2020	388.20	0.15	23.40	335.9		25.30	329.7	
2/25/2020	384.70	0.33	24.30	335.0		26.00	329.0	
3/24/2020	391.70	3.91	50.70		Omitted	71.80		Omitted
4/23/2020	399.40	4.05	20.40	338.9		23.30	331.7	
5/27/2020	388.50	0.40	22.80	336.5		24.70	330.3	
6/24/2020	388.00	0.01	23.10	336.2		25.10	329.9	
7/29/2020	358.70	0.00	23.70	335.6		25.50	329.5	
8/26/2020	379.30	0.00	25.60	333.7		26.90	328.1	
9/29/2020	381.30	0.00	25.70	333.6		27.30	327.7	
10/28/2020	376.50	0.00	26.80	332.5		28.40	326.6	
11/24/2020	380.70	0.25	26.40	332.9		28.00	327.0	
12/23/2020	384.10	1.40	25.50	333.8		27.30	327.7	
1/26/2021	386.2	2.42	25.2	334.11		26.7	328.34	
2/25/2021	385.4	0.07	24.1	335.21		25.9	329.14	
3/23/2021	394.8	1.35	22.3	337.01		24.8	330.24	
4/27/2021	384.1	0.04	24.1	335.21		25.9	329.14	

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			P-66			P-67		
Top of Well Elevation -->			359.31			355.04		
Bottom of Well Elevation -->			301.00			282.50		
Depth of Well			58.3			72.5		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	24.4	334.91		26.1	328.94	
6/30/2021	385.4	0	24.7	334.61		25.8	329.24	
7/29/2021	381.7	0.03	25.8	333.51		27.4	327.64	
8/24/2021	383.4	0	25.8	333.51		27.5	327.54	
9/28/2021	381.3	0.06	25.4	333.91		27	328.04	
10/27/2021	382.7	0.71	26.2	333.11		27.3	327.74	
11/23/2021	381	0	26.6	332.71		28	327.04	
12/21/2021	386.3	6.1	25.2	334.11		27.1	327.94	

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		35.5	432.7		35.0	407.9	
2/28/2007	380.90		34.4	433.8		34.2	408.7	
3/29/2007	397.00		34.6	433.6		34.4	408.5	442.9
4/27/2007	405.60		34.6	433.6		34.4	408.5	
5/24/2007	404.40		35.2	433.0		34.5	408.4	
6/28/2007	396.90		34.6	433.6		34.5	408.4	
7/31/2007	392.60		35.4	432.8		34.5	408.4	
8/29/2007	388.60		34.5	433.7		34.4	408.5	
9/2/2007	387.40		34.5	433.7		34.4	408.5	
9/26/2007	387.90		34.6	433.6		34.4	408.5	
10/25/2007	382.00		35.4	432.8		35.4	407.5	
11/27/2007	380.30		34.5	433.7		34.4	408.5	
12/27/2007	381.40		34.8	433.4		34.4	408.5	
1/31/2008	381.20		34.4	433.8		34.3	408.6	Dry
2/28/2008	393.10		33.4	434.8		34.4	408.5	Dry
3/27/2008	387.90		33.2	435.0		34.4	408.5	Dry
4/28/2008	404.70		31.2	437.0		33.6	409.3	
5/28/2008	404.00		34.0	434.2		33.8	409.1	
6/25/2008	400.20		34.6	433.6	Dry	34.7	408.2	Dry
7/29/2008	398.70		34.5	433.7	Dry	34.4	408.5	Dry
7/30/2008	398.70	0.00	34.5	433.7	Dry	34.5	408.4	Dry
8/29/2008	395.00	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/25/2008	391.70	0.00	34.7	433.5	Dry	34.8	408.1	Dry
10/28/2008	384.05	0.00	34.5	433.7	Dry	34.4	408.5	Dry
11/26/2008	391.10	1.94	34.7	433.5	Dry	34.6	408.3	Dry
12/31/2008	397.90	3.20	34.5	433.7	Dry	34.4	408.5	Dry
1/29/2009	393.40	0.34	34.5	433.7	Dry	34.4	408.5	Dry
2/25/2009	398.60	3.91	34.8	433.4	Dry	34.4	408.5	Dry
3/31/2009	393.40	0.16	34.5	433.7	Dry	34.4	408.5	Dry
4/28/2009	400.70	0.10	34.6	433.6	Dry	34.5	408.4	Dry

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TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	34.5	433.7	Dry	34.4	408.5	Dry
5/27/2009	400.10	0.00	34.5	433.7		34.4	408.6	
6/29/2009	403.00	0.15	34.5	433.7	Dry	34.3	408.6	Dry
7/28/2009	396.53	0.00	34.5	433.7	Dry	34.4	408.5	Dry
8/25/2009	396.60	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/30/2009	393.10	0.00	34.5	433.7	Dry	34.3	408.6	Dry
10/28/2009	401.60	0.42	34.5	433.7	Dry	34.4	408.5	Dry
11/30/2009	402.50	0.00	34.5	433.7	Dry	34.4	408.5	Dry
12/29/2009	399.90	2.80	34.5	433.7	Dry	34.4	408.5	Dry
1/26/2010	401.10	6.75	33.1	435.1		34.3	408.6	Dry
2/23/2010	402.50	2.66	34.2	434.0		34.4	408.5	Dry
3/30/2010	400.00	1.25	34.5	433.7	Dry	34.4	408.5	Dry
4/4/2010	399.60		34.6	433.6	Dry	34.2	408.7	Dry
4/27/2010	403.80	1.32	34.6	433.6	Dry	34.4	408.5	Dry
5/26/2010	403.60	0.03	34.6	433.6	Dry	34.4	408.5	Dry
6/29/2010	397.70	0.00	34.5	433.7	Dry	34.2	408.7	Dry
7/27/2010	396.30	0.00	34.5	433.7	Dry	34.3	408.6	Dry
8/26/2010	390.70	0.00	34.6	433.6	Dry	34.5	408.4	Dry
9/28/2010	390.30	0.00	34.5	433.7	Dry	34.4	408.5	Dry
10/26/2010	403.20	1.56	34.6	433.6	Dry	34.3	408.6	Dry
11/30/2010	397.10	1.34	34.5	433.7		34.3	408.6	Dry
12/28/2010	401.40	9.03	23.3	444.9	Dry	34.4	408.5	Dry
1/27/2011	393.80	1.10	34.0	434.2	Dry	34.3	408.6	
2/23/2011	391.70	1.17	34.5	433.7	Dry	34.4	408.5	Dry
3/29/2011	403.00	3.10	34.4	433.8	Dry	34.3	408.6	Dry
4/27/2011	401.20	0.33	34.5	433.7	Dry	34.4	408.5	Dry
5/26/2011	399.50	0.48	34.5	433.7	Dry	34.4	408.5	Dry
6/28/2011	391.00	0.02	34.6	433.6	Dry	34.5	408.4	Dry
7/26/2011	384.00	0.00	34.6	433.6	Dry	34.4	408.5	Dry
8/24/2011	382.80	0.00	34.5	433.7	Dry	34.9	408.0	Dry

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	34.5	433.7	Dry	34.4	408.5	Dry
10/26/2011	383.90	0.98	34.5	433.7	Dry	34.4	408.5	Dry
11/22/2011	389.80	1.46	32.9	435.3		34.2	408.7	
12/28/2011	382.30	0.35	34.5	433.7		34.4	408.5	
1/25/2012	387.50	1.17	34.5	433.7		34.3	408.6	
2/28/2012	381.10	0.79	34.5	433.7		34.3	408.6	
3/27/2012	387.70	1.61	35.1	433.1		35.3	407.6	Erroneous
4/23/2012	392.30	1.51	34.8	433.4		34.4	408.5	
5/25/2012	388.30	0.06	35.5	432.7	Erroneous	35.8	407.1	Erroneous
6/13/2012	385.10	0.06	34.5	433.7		34.3	408.6	
6/26/2012	386.90	0.00	34.5	433.7		34.4	408.5	
7/24/2012	378.00	0.10	34.5	433.7		34.4	408.5	
8/8/2012	382.90	0.10	34.4	433.8		34.3	408.6	
8/29/2012	382.70	0.00	34.5	433.7		34.3	408.6	
8/29/2012	382.70	0.00	34.5	433.7		34.3	408.6	
9/25/2012	381.90	0.00	34.6	433.6		34.4	408.5	
10/24/2012	384.40	0.08	34.5	433.7		34.4	408.5	
11/27/2012	389.60	0.86	34.4	433.8		34.3	408.6	
12/18/2012	394.70	1.96	34.4	433.8		34.3	408.6	
1/23/2013	393.00	1.53	35.7	432.5	Erroneous	35.8	407.1	Erroneous
2/26/2013	391.50	0.49	34.5	433.7		34.2	408.7	
3/26/2013	394.40	1.00	34.4	433.8		35.3	407.6	
4/25/2013	391.00	0.01	34.8	433.4		34.3	408.6	
5/22/2013	392.00	0.00	34.5	433.7		34.4	408.5	
6/25/2013	380.60	0.00	34.5	433.7		34.4	408.5	
7/23/2013	380.20	0.00	34.5	433.7		34.4	408.5	
8/21/2013	379.60	0.00	34.5	433.7	Dry	34.4	408.5	Dry
9/25/2013	382.20	0.00	34.5	433.7	Dry	34.6	408.3	Dry
10/29/2013	382.00	0.00	34.5	433.7	Dry	34.6	408.3	Dry
11/26/2013	390.10	0.44	34.5	433.7	Dry	34.3	408.6	Dry

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	34.6	433.6	Dry	34.3	408.6	Dry
1/28/2014	392.30	0.00	34.4	433.8	Dry	34.3	408.6	Dry
2/26/2014	389.90	0.72	34.5	433.7	Dry	34.3	408.6	Dry
3/26/2014	387.20		34.5	433.7	Dry	34.4	408.5	Dry
3/28/2014	387.20	1.78	34.5	433.7	Dry	34.4	408.5	Dry
4/23/2014	393.00	0.34	34.5	433.7	Dry	34.3	408.6	Dry
5/28/2014	387.50	0.00	34.5	433.7	Dry	34.4	408.5	Dry
6/25/2014	388.70	0.00	34.5	433.7	Dry	34.3	408.6	Dry
7/29/2014	382.80	0.00	34.5	433.7	Dry	34.3	408.6	Dry
8/28/2014	386.80	0.04	34.4	433.8		34.3	408.6	Dry
9/24/2014	387.90	0.00	34.5	433.7	Dry	34.3	408.6	Dry
10/29/2014	383.90	0.00	34.8	433.4	Dry	34.4	408.5	Dry
11/21/2014	388.30	0.35	34.5	433.7	Dry	34.3	408.6	Dry
12/22/2014	399.80	4.75	34.5	433.7	Dry	34.3	408.6	Dry
1/28/2015	396.90	1.28	34.5	433.7	Dry	34.3	408.6	Dry
2/24/2015	392.70	0.34	34.4	433.8	Dry	34.2	408.7	Dry
3/31/2015	388.90	0.67	34.5	433.7	Dry	34.3	408.6	Dry
4/23/2015	390.30	0.20	34.5	433.7	Dry	34.3	408.6	Dry
5/28/2015	400.30	1.87	34.5	433.7	Dry	34.4	408.5	Dry
6/24/2015	400.70	0.00	35.0	433.2	Dry	34.8	408.1	Dry
7/30/2015	400.20	0.00	34.4	433.8	Dry	35.3	407.6	Dry
8/25/2015	384.00	0.00	34.4	433.8	Dry	34.6	408.3	Dry
9/23/2015	388.60	2.17	34.5	433.7	Dry	34.4	408.5	Dry
10/29/2015	387.60	0.16	34.5	433.7	Dry	34.4	408.5	Dry
11/25/2015	386.90	0.15	34.6	433.6	Dry	34.4	408.5	Dry
12/23/2015	395.90	1.55	33.8	434.4	Dry	33.4	409.5	Dry
1/26/2016	401.20	2.86	33.8	434.4	Dry	33.4	409.5	Dry
2/24/2016	393.60	0.39	33.8	434.4	Dry	33.4	409.5	Dry
3/29/2016	397.10	1.55	34.5	433.7		34.5	408.4	
4/29/2016	391.60	0.04	34.5	433.7		34.5	408.4	

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	34.5	433.7		34.5	408.4	
6/29/2016	392.50	0.00	34.5	433.7		34.5	408.4	
7/26/2016	377.70	0.00	34.5	433.7		34.5	408.4	
8/24/2016	388.10	0.00			Abandoned			Abandoned
9/29/2016	388.20	0.00			Abandoned			Abandoned
10/26/2016	392.10	0.96			Abandoned			Abandoned
11/22/2016	395.70	1.42			Abandoned			Abandoned
12/28/2016	400.70	4.11			Abandoned			Abandoned
1/26/2017	402.40	6.70			Abandoned			Abandoned
2/28/2017	389.60	4.01			Abandoned			Abandoned
3/29/2017	391.80	0.14			Abandoned			Abandoned
4/26/2017	387.00	0.04			Abandoned			Abandoned
5/23/2017	399.40	0.30			Abandoned			Abandoned
6/21/2017	392.60	0.00			Abandoned			Abandoned
7/26/2017	384.60	0.00			Abandoned			Abandoned
8/30/2017	383.00	0.00			Abandoned			Abandoned
9/27/2017	382.00	0.00			Abandoned			Abandoned
10/27/2017	375.00	0.00			Abandoned			Abandoned
11/30/2017	382.80	0.14			Abandoned			Abandoned
12/21/2017	380.50	0.00			Abandoned			Abandoned
1/24/2018	397.80	1.43			Abandoned			Abandoned
2/21/2018	382.40	0.17			Abandoned			Abandoned
3/29/2018	392.10	0.00			Abandoned			Abandoned
4/25/2018	388.00	0.05			Abandoned			Abandoned
5/30/2018	399.50	0.21			Abandoned			Abandoned
6/28/2018	398.90	0.00			Abandoned			Abandoned
7/25/2018	388.60	0.00			Abandoned			Abandoned
8/24/2018	378.60	0.00			Abandoned			Abandoned
9/27/2018	381.40	0.00			Abandoned			Abandoned
10/18/2018	385.20	1.45			Abandoned			Abandoned

Note:

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**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32			Abandoned			Abandoned
12/20/2018	394.20	2.12			Abandoned			Abandoned
2/21/2019	396.00	8.26			Abandoned			Abandoned
3/27/2019	376.00	1.88			Abandoned			Abandoned
4/25/2019	377.70	0.03			Abandoned			Abandoned
5/30/2019	395.30	0.92			Abandoned			Abandoned
6/26/2019	388.40	0.01			Abandoned			Abandoned
7/5/2019	385.50	0.00			Abandoned			Abandoned
7/30/2019	385.20	0.00			Abandoned			Abandoned
8/27/2019	387.90	0.00			Abandoned			Abandoned
9/26/2019	380.00	0.00			Abandoned			Abandoned
10/23/2019	378.90	0.00			Abandoned			Abandoned
11/26/2019	383.80	2.60			Abandoned			Abandoned
12/18/2019	389.20	4.63			Abandoned			Abandoned
1/29/2020	388.20	0.15			Abandoned			Abandoned
2/25/2020	384.70	0.33			Abandoned			Abandoned
3/24/2020	391.70	3.91			Abandoned			Abandoned
4/23/2020	399.40	4.05			Abandoned			Abandoned
5/27/2020	388.50	0.40			Abandoned			Abandoned
6/24/2020	388.00	0.01			Abandoned			Abandoned
7/29/2020	358.70	0.00			Abandoned			Abandoned
8/26/2020	379.30	0.00			Abandoned			Abandoned
9/29/2020	381.30	0.00			Abandoned			Abandoned
10/28/2020	376.50	0.00			Abandoned			Abandoned
11/24/2020	380.70	0.25			Abandoned			Abandoned
12/23/2020	384.10	1.40			Abandoned			Abandoned
1/26/2021	386.2	2.42			Abandoned			Abandoned
2/25/2021	385.4	0.07			Abandoned			Abandoned
3/23/2021	394.8	1.35			Abandoned			Abandoned
4/27/2021	384.1	0.04			Abandoned			Abandoned

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-1			VBW/OW-2		
Top of Well Elevation -->			468.16			442.91		
Bottom of Well Elevation -->			433.46			407.91		
Depth of Well			34.7			35.0		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04			Abandoned			Abandoned
6/30/2021	385.4	0			Abandoned			Abandoned
7/29/2021	381.7	0.03			Abandoned			Abandoned
8/24/2021	383.4	0			Abandoned			Abandoned
9/28/2021	381.3	0.06			Abandoned			Abandoned
10/27/2021	382.7	0.71			Abandoned			Abandoned
11/23/2021	381	0			Abandoned			Abandoned
12/21/2021	386.3	6.1			Abandoned			Abandoned

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
1/31/2007	376.90		25.3	393.6	
2/28/2007	380.90		27.3	391.6	
3/29/2007	397.00		26.3	392.6	
4/27/2007	405.60		21.0	397.9	
5/24/2007	404.40		18.5	400.4	
6/28/2007	396.90		19.5	399.4	
7/31/2007	392.60		21.9	397.0	
8/29/2007	388.60		23.3	395.6	
9/2/2007	387.40		21.9	397.0	
9/26/2007	387.90		23.1	395.8	
10/25/2007	382.00		26.1	392.8	
11/27/2007	380.30		26.6	392.3	
12/27/2007	381.40		29.1	389.8	
1/31/2008	381.20		25.2	393.7	
2/28/2008	393.10		22.3	396.6	
3/27/2008	387.90		19.1	399.8	
4/28/2008	404.70		17.6	401.3	
5/28/2008	404.00		17.1	401.8	
6/25/2008	400.20		17.6	401.3	
7/29/2008	398.70		19.1	399.8	
7/30/2008	398.70	0.00	19.1	399.8	
8/29/2008	395.00	0.00	21.3	397.6	
9/25/2008	391.70	0.00	23.5	395.4	
10/28/2008	384.05	0.00	27.0	391.9	Dry
11/26/2008	391.10	1.94	26.8	392.1	
12/31/2008	397.90	3.20	24.6	394.3	
1/29/2009	393.40	0.34	25.6	393.3	
2/25/2009	398.60	3.91	25.1	393.8	
3/31/2009	393.40	0.16	24.6	394.3	
4/28/2009	400.70	0.10	24.2	394.7	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/18/2009	400.80	0.00	22.3	396.6	
5/27/2009	400.10	0.00	22.4	396.5	
6/29/2009	403.00	0.15	19.6	399.3	
7/28/2009	396.53	0.00	22.3	396.6	
8/25/2009	396.60	0.00	23.8	395.1	
9/30/2009	393.10	0.00	25.5	393.4	
10/28/2009	401.60	0.42	23.5	395.4	
11/30/2009	402.50	0.00	19.8	399.1	
12/29/2009	399.90	2.80	20.5	398.4	
1/26/2010	401.10	6.75	19.7	399.2	
2/23/2010	402.50	2.66	18.7	400.2	
3/30/2010	400.00	1.25	19.4	399.5	
4/4/2010	399.60		19.6	399.3	
4/27/2010	403.80	1.32	19.2	399.7	
5/26/2010	403.60	0.03	19.0	399.9	
6/29/2010	397.70	0.00	20.6	398.3	
7/27/2010	396.30	0.00	21.6	397.3	
8/26/2010	390.70	0.00	22.8	396.1	
9/28/2010	390.30	0.00	22.4	396.5	
10/26/2010	403.20	1.56	22.9	396.0	
11/30/2010	397.10	1.34	21.7	397.2	
12/28/2010	401.40	9.03	18.2	400.7	
1/27/2011	393.80	1.10	19.4	399.5	
2/23/2011	391.70	1.17	22.9	396.0	
3/29/2011	403.00	3.10	20.2	398.7	
4/27/2011	401.20	0.33	20.2	398.7	
5/26/2011	399.50	0.48	20.8	398.1	
6/28/2011	391.00	0.02	23.0	395.9	
7/26/2011	384.00	0.00	27.1	391.8	
8/24/2011	382.80	0.00	28.5	390.4	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
9/27/2011	381.80	0.08	29.7	389.2	
10/26/2011	383.90	0.98	29.8	389.1	
11/22/2011	389.80	1.46	34.1	384.8	Erroneous
12/28/2011	382.30	0.35	29.2	389.7	
1/25/2012	387.50	1.17	32.0	386.9	
2/28/2012	381.10	0.79	32.3	386.6	
3/27/2012	387.70	1.61	32.2	386.7	
4/23/2012	392.30	1.51	31.4	387.5	
5/25/2012	388.30	0.06	27.4	391.5	
6/13/2012	385.10	0.06	28.9	390.0	
6/26/2012	386.90	0.00	28.7	390.2	
7/24/2012	378.00	0.10	29.4	389.5	
8/8/2012	382.90	0.10	30.7	388.2	
8/29/2012	382.70	0.00	28.4	390.5	
8/29/2012	382.70	0.00	28.4	390.5	
9/25/2012	381.90	0.00	26.6	392.3	
10/24/2012	384.40	0.08	30.3	388.6	
11/27/2012	389.60	0.86	29.0	389.9	
12/18/2012	394.70	1.96	29.0	389.9	
1/23/2013	393.00	1.53	25.8	393.1	
2/26/2013	391.50	0.49	26.9	392.0	
3/26/2013	394.40	1.00	27.7	391.2	
4/25/2013	391.00	0.01	26.9	392.0	
5/22/2013	392.00	0.00	26.1	392.8	
6/25/2013	380.60	0.00	27.2	391.7	
7/23/2013	380.20	0.00	27.6	391.3	
8/21/2013	379.60	0.00	28.3	390.6	
9/25/2013	382.20	0.00	27.9	391.0	
10/29/2013	382.00	0.00	29.9	389.0	
11/26/2013	390.10	0.44	30.0	388.9	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
12/17/2013	394.70	1.10	29.4	389.5	
1/28/2014	392.30	0.00	25.6	393.3	
2/26/2014	389.90	0.72	26.3	392.6	
3/26/2014	387.20		26.8	392.1	Dry
3/28/2014	387.20	1.78	26.8	392.1	Dry
4/23/2014	393.00	0.34	27.0	391.9	
5/28/2014	387.50	0.00	25.8	393.1	
6/25/2014	388.70	0.00	26.2	392.7	
7/29/2014	382.80	0.00	26.5	392.4	
8/28/2014	386.80	0.04	27.6	391.3	
9/24/2014	387.90	0.00	27.3	391.6	
10/29/2014	383.90	0.00	28.3	390.6	
11/21/2014	388.30	0.35	26.3	392.6	
12/22/2014	399.80	4.75	26.7	392.2	
1/28/2015	396.90	1.28	24.4	394.5	
2/24/2015	392.70	0.34	24.7	394.2	
3/31/2015	388.90	0.67	22.0	396.9	
4/23/2015	390.30	0.20	26.4	392.5	
5/28/2015	400.30	1.87	24.4	394.5	
6/24/2015	400.70	0.00	23.3	395.6	
7/30/2015	400.20	0.00	21.5	397.4	
8/25/2015	384.00	0.00	25.0	393.9	
9/23/2015	388.60	2.17	29.7	389.2	
10/29/2015	387.60	0.16	32.4	386.5	Dry
11/25/2015	386.90	0.15	31.9	387.0	
12/23/2015	395.90	1.55	31.7	387.2	OW-1,2 and 3 are read by VB wire
1/26/2016	401.20	2.86	24.1	394.7	
2/24/2016	393.60	0.39	23.9	395.0	
3/29/2016	397.10	1.55	24.7	394.2	
4/29/2016	391.60	0.04	24.7	394.2	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/24/2016	401.60	0.13	25.2	393.7	
6/29/2016	392.50	0.00	24.0	394.9	
7/26/2016	377.70	0.00	29.0	389.9	
8/24/2016	388.10	0.00			Not Read, Construction
9/29/2016	388.20	0.00			Not Read, Construction
10/26/2016	392.10	0.96			Not Read, Construction
11/22/2016	395.70	1.42			Not Read, Construction
12/28/2016	400.70	4.11			Not Read, Construction
1/26/2017	402.40	6.70			Not Read, Construction
2/28/2017	389.60	4.01			Not Read, Construction
3/29/2017	391.80	0.14			Not Read, Construction
4/26/2017	387.00	0.04			Not Read, Construction
5/23/2017	399.40	0.30			Not Read, Construction
6/21/2017	392.60	0.00			Not Read, Construction
7/26/2017	384.60	0.00			Not Read, Construction
8/30/2017	383.00	0.00			Not Read, Construction
9/27/2017	382.00	0.00			Not Read, Construction
10/27/2017	375.00	0.00			Not Read, Construction
11/30/2017	382.80	0.14			Not Read, Construction
12/21/2017	380.50	0.00			Not Read, Construction
1/24/2018	397.80	1.43			Not Read, Construction
2/21/2018	382.40	0.17			Not Read, Construction
3/29/2018	392.10	0.00			Not Read, Construction
4/25/2018	388.00	0.05			Not Read, Construction
5/30/2018	399.50	0.21			Not Read, Construction
6/28/2018	398.90	0.00	28.5	390.4	
7/25/2018	388.60	0.00	28.5	390.4	
8/24/2018	378.60	0.00	28.5	390.4	
9/27/2018	381.40	0.00	28.5	390.4	
10/18/2018	385.20	1.45	28.5	390.4	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
11/28/2018	389.10	1.32	28.5	390.4	
12/20/2018	394.20	2.12	28.5	390.4	
2/21/2019	396.00	8.26	21.30	397.6	
3/27/2019	376.00	1.88	26.01	392.9	
4/25/2019	377.70	0.03	29.20	389.7	
5/30/2019	395.30	0.92	29.50	389.4	
6/26/2019	388.40	0.01	29.40	389.5	
7/5/2019	385.50	0.00	29.50	389.4	
7/30/2019	385.20	0.00	29.50	389.4	
8/27/2019	387.90	0.00	29.50	389.4	
9/26/2019	380.00	0.00	29.50	389.4	
10/23/2019	378.90	0.00	29.50	389.4	
11/26/2019	383.80	2.60	29.50	389.4	
12/18/2019	389.20	4.63	29.50	389.4	
1/29/2020	388.20	0.15	29.50	389.4	
2/25/2020	384.70	0.33	29.50	389.4	
3/24/2020	391.70	3.91	29.50	389.4	
4/23/2020	399.40	4.05	26.70	392.2	
5/27/2020	388.50	0.40	27.80	391.1	
6/24/2020	388.00	0.01	29.50	389.4	
7/29/2020	358.70	0.00	29.50	389.4	
8/26/2020	379.30	0.00	29.50	389.4	
9/29/2020	381.30	0.00	29.50	389.4	
10/28/2020	376.50	0.00	29.50	389.4	
11/24/2020	380.70	0.25	29.50	389.4	
12/23/2020	384.10	1.40	29.50	389.4	
1/26/2021	386.2	2.42	29.5	389.37	
2/25/2021	385.4	0.07	29.5	389.37	
3/23/2021	394.8	1.35	29.5	389.37	
4/27/2021	384.1	0.04	29.5	389.37	

Note:

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2. Piezometer data based on NGVD 29 datum

**TABLE 3
RATTLESNAKE CANYON DAM
PIEZOMETER WATER LEVEL MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Monitoring Well -->			VBW/OW-3		
Top of Well Elevation -->			418.87		
Bottom of Well Elevation -->			386.27		
Depth of Well			32.6		
Date	Reservoir Elevation (ft)	monthly Rainfall (in.)	Reading (ft)	Elevation (ft)	Comment
5/27/2021	383.5	0.04	29.5	389.37	
6/30/2021	385.4	0	29.5	389.37	
7/29/2021	381.7	0.03	29.5	389.37	
8/24/2021	383.4	0	29.5	389.37	
9/28/2021	381.3	0.06	29.5	389.37	
10/27/2021	382.7	0.71	29.5	389.37	
11/23/2021	381	0	29.5	389.37	
12/21/2021	386.3	6.1	29.9	388.97	

Note:

1. Readings in red are classified as erroneous
2. Piezometer data based on NGVD 29 datum

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
1/31/2007	376.90						0.05		0.79	
2/28/2007	380.90						0.06		0.85	
3/29/2007	397.00						0.06		0.51	
4/27/2007	405.60						0.08		0.89	
5/24/2007	404.40						0.08		1.11	
6/28/2007	396.90		21.13				0.11		1.06	
7/31/2007	392.60		19.02				0.11		0.10	
8/29/2007	388.60		17.96				0.08		0.97	
9/2/2007	387.40		17.17				0.12		0.97	
9/26/2007	387.90		4.36				0.08		0.97	
10/25/2007	382.00		4.70				0.08		0.99	
11/27/2007	380.30		4.20				0.06		0.74	
12/27/2007	381.40		4.16				0.05		0.71	
1/31/2008	381.20		0.75				0.06		0.67	
2/28/2008	393.10		2.39				0.06		0.66	
3/27/2008	387.90		4.24				0.06		0.74	
4/28/2008	404.70		6.66			11.73	0.09		0.86	
5/28/2008	404.00		17.12			8.01	0.10		1.14	
6/25/2008	400.20		15.85			12.10	0.10		0.99	
7/29/2008	398.70			Not Read		Not Read		Not Read		Not Read
7/30/2008	398.70	0.00	19.02			8.45	0.14		1.30	
8/29/2008	395.00	0.00	3.49			13.08	0.09		1.13	
9/25/2008	391.70	0.00	0.61			4.06	0.00		0.30	
10/28/2008	384.05	0.00	2.00			5.00	0.09		1.00	
11/26/2008	391.10	1.94	6.45			1.59	0.07		0.98	
12/31/2008	397.90	3.20	4.68			14.13	0.10		1.01	
1/29/2009	393.40	0.34	2.59			9.03	0.08		1.08	
2/25/2009	398.60	3.91	4.50			11.42	0.30		0.94	
3/31/2009	393.40	0.16	3.17			7.93	0.11		1.20	
4/28/2009	400.70	0.10	7.19			10.09	0.09		0.05	
5/18/2009	400.80	0.00	8.24			11.10	0.10		1.11	
5/27/2009	400.10	0.00	7.50			11.31	0.10		0.32	
6/29/2009	403.00	0.15	10.65			12.47	0.10		1.20	
7/28/2009	396.53	0.00	7.93			13.20	0.09		1.10	

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
8/25/2009	396.60	0.00	5.39		10.46		0.08		1.19	
9/30/2009	393.10	0.00	3.60		9.60		0.07		1.00	
10/28/2009	401.60	0.42	6.00		9.20		0.10		1.06	
11/30/2009	402.50	0.00	13.63		8.69		0.16		1.30	
12/29/2009	399.90	2.80	11.10		15.37		0.10		1.06	
1/26/2010	401.10	6.75	12.68		12.68		0.09		1.22	
2/23/2010	402.50	2.66	15.85		12.68		0.09		1.16	
3/30/2010	400.00	1.25	12.68		12.92		0.10		1.27	
4/4/2010	399.60		14.47		11.32		0.11		1.19	
4/27/2010	403.80	1.32	5.28		12.94		0.13		1.35	
5/26/2010	403.60	0.03	17.70		11.78		0.11		1.29	
6/29/2010	397.70	0.00	14.27		11.10		0.11		1.06	
7/27/2010	396.30	0.00	8.72		15.85		0.08		1.16	
8/26/2010	390.70	0.00	5.86		7.13		0.08		1.16	
9/28/2010	390.30	0.00	2.64		5.28		0.08		0.99	
10/26/2010	403.20	1.56	3.57		7.50		0.09		1.06	
11/30/2010	397.10	1.34	11.10		3.96		0.09		1.16	
12/28/2010	401.40	9.03	15.32		2.64		0.10		0.99	
1/27/2011	393.80	1.10	11.60		4.02		0.16		1.36	
2/23/2011	391.70	1.17	6.74		2.48		0.31		1.06	
3/29/2011	403.00	3.10	17.44		2.11		0.10		1.15	
4/27/2011	401.20	0.33	13.00		1.66		0.13		1.16	
5/26/2011	399.50	0.48	12.13		1.66		0.11		1.26	
6/28/2011	391.00	0.02	6.18		1.39		0.07		1.08	
7/26/2011	384.00	0.00	6.34		0.12		0.05		0.93	
8/24/2011	382.80	0.00	1.32		0.08		0.04		0.44	
9/27/2011	381.80	0.08	1.30		0.00		0.06		0.74	
10/26/2011	383.90	0.98	1.06		0.00		0.02		0.79	
11/22/2011	389.80	1.46	1.55		0.00		0.02		0.81	
12/28/2011	382.30	0.35	1.24		0.10		0.03		0.79	
1/25/2012	387.50	1.17	1.11		0.00		0.02		0.74	
2/28/2012	381.10	0.79	0.95		0.00		0.02		0.69	
3/27/2012	387.70	1.61	0.94		0.00		0.02		0.71	
4/23/2012	392.30	1.51	1.18		0.00		0.02		0.76	

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
5/25/2012	388.30	0.06	1.84		0.74		0.03		0.89	
6/13/2012	385.10	0.06	0.74		0.74		0.03		0.85	
6/26/2012	386.90	0.00	1.45		1.56		0.01		0.86	
7/24/2012	378.00	0.10	0.97		0.16		0.02		0.65	
8/8/2012	382.90	0.10	0.88		0.01		0.03		0.66	
8/29/2012	382.70	0.00	0.96		0.00		0.02		0.73	
8/29.5/2012	382.70	0.00	0.96		0.00		0.02		0.73	
9/25/2012	381.90	0.00	0.91		0.00		0.02		0.94	
10/24/2012	384.40	0.08	0.82		0.00		0.02		0.64	
11/27/2012	389.60	0.86	0.73		1.29		0.07		0.71	
12/18/2012	394.70	1.96	1.27		1.74		0.03		0.82	
1/23/2013	393.00	1.53	1.27		1.77		0.05		1.03	
2/26/2013	391.50	0.49	2.77		4.91		0.04		0.98	
3/26/2013	394.40	1.00	2.25		3.41		0.08		0.87	
4/25/2013	391.00	0.01	2.50		3.53		0.06		0.95	
5/22/2013	392.00	0.00	2.38		4.07		0.06		0.86	
6/25/2013	380.60	0.00	1.33		1.90		0.07		0.86	
7/23/2013	380.20	0.00	1.17		0.45		0.05		0.51	
8/21/2013	379.60	0.00	0.77		0.06		0.34		0.77	
9/25/2013	382.20	0.00	0.91		0.00		0.03		0.73	
10/29/2013	382.00	0.00	0.83		0.00		0.03		0.35	
11/26/2013	390.10	0.44	0.85		0.00		0.03		0.69	
12/17/2013	394.70	1.10	1.24		1.00		0.04		0.85	
1/28/2014	392.30	0.00	2.36		3.41		0.05		0.90	
2/26/2014	389.90	0.72	2.27		2.69		0.04		0.92	
3/26/2014	387.20		1.98		2.93		0.04		0.94	
3/28/2014	387.20	1.78	1.98		2.93		0.04		0.74	
4/23/2014	393.00	0.34	1.66		2.67		0.23		0.87	
5/28/2014	387.50	0.00	1.98		2.73		0.02		0.90	
6/25/2014	388.70	0.00	1.29		2.69		0.01		0.92	
7/29/2014	382.80	0.00	1.20		0.85		0.03		0.89	
8/28/2014	386.80	0.04	1.12		0.62		0.04		0.82	
9/24/2014	387.90	0.00	1.22		1.27		0.02		0.85	
10/29/2014	383.90	0.00	0.79		0.32		0.04		0.78	

**TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
11/21/2014	388.30	0.35	1.19		1.19		0.02		0.82	
12/22/2014	399.80	4.75	1.48		1.31		0.04		0.81	
1/28/2015	396.90	1.28	2.71		5.31		0.05		1.06	
2/24/2015	392.70	0.34	3.33		4.36		0.06		1.10	
3/31/2015	388.90	0.67	2.79		5.55		0.04		1.10	
4/23/2015	390.30	0.20	2.54		3.80		0.03		1.11	
5/28/2015	400.30	1.87	3.28		4.62		0.04		1.09	
6/24/2015	400.70	0.00	3.09		4.31		0.16		1.06	
7/30/2015	400.20	0.00	3.78		4.95		0.09		1.19	
8/25/2015	384.00	0.00	3.50		7.77		0.02		0.90	
9/23/2015	388.60	2.17	1.95		3.67		0.04		1.00	
10/29/2015	387.60	0.16	1.60		2.22		0.04		0.95	
11/25/2015	386.90	0.15	1.43		1.78		0.03		0.97	
12/23/2015	395.90	1.55	1.80		2.54		0.08		0.95	
1/26/2016	401.20	2.86	3.87		9.27		0.04		1.06	
2/24/2016	393.60	0.39	3.01		6.58		0.05		1.16	
3/29/2016	397.10	1.55	3.60		6.34		0.05		1.15	
4/29/2016	391.60	0.04	3.17		5.26		0.06		1.08	
5/24/2016	401.60	0.13	4.04		5.47		0.10		1.22	
6/29/2016	392.50	0.00	3.61		5.61		0.07		1.13	
7/26/2016	377.70	0.00	1.69		1.51		0.06		1.10	
8/24/2016	388.10	0.00	0.72		0.00		0.06		1.22	
9/29/2016	388.20	0.00	0.58		0.00		0.03		0.89	
10/26/2016	392.10	0.96	1.53		0.00		0.05		1.03	
11/22/2016	395.70	1.42	2.12		0.00		0.17		0.97	
12/28/2016	400.70	4.11	6.18		0.32		0.06		1.66	
1/26/2017	402.40	6.70	5.23		7.29		0.08		1.24	
2/28/2017	389.60	4.01	2.38		3.01		0.10		1.16	
3/29/2017	391.80	0.14	4.28		3.17		0.04		0.95	
4/26/2017	387.00	0.04	1.74		3.72		0.04		0.98	
5/23/2017	399.40	0.30	2.36		4.47		0.06		0.98	
6/21/2017	392.60	0.00	2.85		5.39		0.04		1.18	
7/26/2017	384.60	0.00	1.64		2.85		0.08		1.00	
8/30/2017	383.00	0.00	1.05		0.63		0.06		0.94	

**TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
9/27/2017	382.00	0.00	0.84		0.00		0.04		0.65	
10/27/2017	375.00	0.00	0.73		0.00		0.05		0.78	
11/30/2017	382.80	0.14	0.69		0.00		0.05		0.79	
12/21/2017	380.50	0.00	0.69		0.00		0.02		0.77	
1/24/2018	397.80	1.43	0.84		0.00		0.06		0.71	
2/21/2018	382.40	0.17	1.53		0.00		0.09		0.92	
3/29/2018	392.10	0.00	1.59		0.50		0.03		0.83	
4/25/2018	388.00	0.05	0.97		0.00		0.07		0.86	
5/30/2018	399.50	0.21	1.02		1.52		0.04		0.89	
6/28/2018	398.90	0.00	1.74		3.49		0.12		1.19	
7/25/2018	388.60	0.00	0.82		3.82		0.06		1.16	
8/24/2018	378.60	0.00	0.17		0.21		0.07		0.79	
9/27/2018	381.40	0.00	0.05		0.00		0.06		0.85	
10/18/2018	385.20	1.45	0.05		0.00		0.03		0.87	
11/28/2018	389.10	1.32	0.04		0.00		0.03		0.71	
12/20/2018	394.20	2.12	0.07		0.00		0.05		0.68	
1/30/2019	394.90	4.31	0.04		4.83		0.06		0.82	
2/21/2019	396.00	8.26	2.22		6.34		0.08		1.90	
3/27/2019	376.00	1.88	1.00		4.12		0.11		0.95	
4/25/2019	377.70	0.03	0.74		1.06		0.07		0.85	
5/30/2019	395.30	0.92	0.10		2.46		0.07		0.82	
6/26/2019	388.40	0.01	0.06		3.06		0.04		1.00	
7/5/2019	385.50	0.00	0.10		2.80		0.04		1.00	
7/30/2019	385.20	0.00	0.03		0.32		0.02		0.74	
8/27/2019	387.90	0.00	0.08		0.92		0.04		0.87	
9/26/2019	380.00	0.00	0.06		0.00		0.03		0.88	
10/23/2019	378.90	0.00	0.04		0.00		0.03		0.89	
11/26/2019	383.80	2.60	0.04		0.00		0.03		0.77	
12/18/2019	389.20	4.63	0.04		0.00		0.03		0.59	
1/29/2020	388.20	0.15	1.90		1.66		0.00		0.42	
2/25/2020	384.70	0.33	1.43		1.22		0.00		1.19	
3/24/2020	391.70	3.91	1.90		2.85		0.04		0.85	
4/23/2020	399.40	4.05	2.27		3.59		0.09		1.32	
5/27/2020	388.50	0.40	1.90		4.18		0.00		1.27	

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-1 South		FP-1 North		FP-2		FP-3	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
6/24/2020	388.00	0.01	1.90		2.85		0.00		0.79	
7/29/2020	358.70	0.00	1.77		1.98		0.00		1.16	
8/26/2020	379.30	0.00	1.90		0.30		0.00		1.27	
9/29/2020	381.30	0.00	0.99		0.11		0.02		0.95	
10/28/2020	376.50	0.00	1.15		0.00		0.00		0.87	
11/24/2020	380.70	0.25	0.90		0.00		0.01		0.90	
12/23/2020	384.10	1.40	0.93		0.00		0.00		0.68	
1/26/2021	386.20	2.42	1.03		0.24		0.00		0.76	
2/25/2021	385.40	0.07	0.99		0.32		0.00		0.78	
3/23/2021	394.80	1.35	1.30		1.90		0.00		1.01	
4/27/2021	384.10	0.04	1.14		0.76		0.00		0.68	
5/27/2021	383.50	0.04	1.15		0.52		0.00		0.77	
6/30/2021	385.40	0.00	1.35		0.34		0.00		1.08	
7/29/2021	381.70	0.03	1.32		0.00		0.00		1.05	
8/24/2021	383.40	0.00	1.11		0.00		0.00		0.85	
9/28/2021	381.30	0.06	1.03		0.05		0.00		0.82	
10/27/2021	382.70	0.71	1.43		0.00		0.00		0.63	
11/23/2021	381.00	0.00	1.19		0.00		0.00		0.95	
12/21/2021	386.30	6.10	1.12		0.00		0.00		0.97	

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
1/31/2007	376.90		0.48		0.00	dry	0.00	dry	0.00	dry
2/28/2007	380.90		0.42		0.00	dry	0.00	dry	0.00	dry
3/29/2007	397.00		0.69		0.00	dry	0.00	dry	0.00	dry
4/27/2007	405.60		0.48		0.25		0.00	dry	0.00	dry
5/24/2007	404.40		0.62		1.35		0.26		0.00	dry
6/28/2007	396.90		0.66		0.74		0.00	dry	0.00	dry
7/31/2007	392.60		0.61		0.25		0.00	dry	0.00	dry
8/29/2007	388.60		0.55		0.00	dry	0.00	dry	0.00	dry
9/2/2007	387.40		0.53		0.00	dry	0.00	dry	0.00	dry
9/26/2007	387.90		0.50		0.00	dry	0.00	dry	0.00	dry
10/25/2007	382.00		0.53		0.00	dry	0.00	dry	0.00	dry
11/27/2007	380.30		0.45		0.00	dry	0.00	dry	0.00	dry
12/27/2007	381.40		0.37		0.00	dry	0.00	dry	0.00	dry
1/31/2008	381.20		0.35		0.00	dry	0.00	dry	0.00	dry
2/28/2008	393.10		0.33		0.00	dry	0.00	dry	0.00	dry
3/27/2008	387.90		0.38		0.00	dry	0.00	dry	0.00	dry
4/28/2008	404.70		0.48		0.95		0.00	dry	0.00	dry
5/28/2008	404.00		0.63		1.35		0.13		0.00	dry
6/25/2008	400.20		0.66		1.06		0.00	dry	0.00	dry
7/29/2008	398.70			Not Read		Not Read				
7/30/2008	398.70	0.00	0.98		1.09		0.00	dry	0.00	dry
8/29/2008	395.00	0.00	0.63		0.61		0.00	dry	0.00	dry
9/25/2008	391.70	0.00	0.19		0.10		0.00	dry	0.00	dry
10/28/2008	384.05	0.00	0.53		0.00		0.00	dry	0.00	dry
11/26/2008	391.10	1.94	0.51		0.00		0.00	dry	0.00	dry
12/31/2008	397.90	3.20	0.59		0.26		0.00	dry	0.00	dry
1/29/2009	393.40	0.34	0.63		0.29		0.00	dry	0.00	dry
2/25/2009	398.60	3.91	0.59		0.46		0.00	dry	0.00	dry
3/31/2009	393.40	0.16	0.67		0.37		0.00	dry	0.00	dry
4/28/2009	400.70	0.10	0.32		0.36		0.00	dry	0.00	dry
5/18/2009	400.80	0.00	0.69		0.95		0.00	dry	0.00	dry
5/27/2009	400.10	0.00	0.73		0.97		0.00	dry	0.00	dry
6/29/2009	403.00	0.15	0.80		1.59		0.00	dry	0.00	dry
7/28/2009	396.53	0.00	0.79		1.05		0.00	dry	0.00	dry

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
8/25/2009	396.60	0.00	0.69		0.62		0.00	dry	0.00	dry
9/30/2009	393.10	0.00	0.75		0.25		0.00	dry	0.00	dry
10/28/2009	401.60	0.42	0.71		0.85		0.00	dry	0.00	dry
11/30/2009	402.50	0.00	0.87		1.45		0.00	dry	0.00	dry
12/29/2009	399.90	2.80	0.85		1.19		0.00	dry	0.00	dry
1/26/2010	401.10	6.75	0.84		1.33		0.00	dry	0.00	dry
2/23/2010	402.50	2.66	0.85		1.59		0.00	dry	0.00	dry
3/30/2010	400.00	1.25	0.88		1.32		0.00	dry	0.00	dry
4/4/2010	399.60		0.79		1.29		0.00	dry	0.00	dry
4/27/2010	403.80	1.32	0.92		1.72		0.00	dry	0.00	dry
5/26/2010	403.60	0.03	0.90		1.80		0.00	dry	0.00	dry
6/29/2010	397.70	0.00	0.90		1.37		0.00	dry	0.00	dry
7/27/2010	396.30	0.00	0.79		0.79		0.00	dry	0.00	dry
8/26/2010	390.70	0.00	0.74		0.42		0.00	dry	0.00	dry
9/28/2010	390.30	0.00	0.66		0.06		0.00	dry	0.00	dry
10/26/2010	403.20	1.56	0.71		0.79		0.00	dry	0.00	dry
11/30/2010	397.10	1.34	0.79		0.92		0.00	dry	0.00	dry
12/28/2010	401.40	9.03	0.79		1.71		0.00	dry	0.00	dry
1/27/2011	393.80	1.10	0.83		1.00		0.00	dry	0.00	dry
2/23/2011	391.70	1.17	0.74		0.36		0.00	dry	0.00	dry
3/29/2011	403.00	3.10	0.79		1.32		0.00	dry	0.00	dry
4/27/2011	401.20	0.33	0.79		1.14		0.00	dry	0.00	dry
5/26/2011	399.50	0.48	0.86		1.06		0.00	dry	0.00	dry
6/28/2011	391.00	0.02	0.76		0.30		0.00	dry	0.00	dry
7/26/2011	384.00	0.00	0.97		0.00	dry	0.00	dry	0.00	dry
8/24/2011	382.80	0.00	0.27		0.00	dry	0.00	dry	0.00	dry
9/27/2011	381.80	0.08	0.46		0.00	dry	0.00	dry	0.00	dry
10/26/2011	383.90	0.98	0.52		0.00	dry	0.00	dry	0.00	dry
11/22/2011	389.80	1.46	0.50		0.00	dry	0.00	dry	0.00	dry
12/28/2011	382.30	0.35	0.45		0.00	dry	0.00	dry	0.00	dry
1/25/2012	387.50	1.17	0.45		0.00	dry	0.00	dry	0.00	dry
2/28/2012	381.10	0.79	0.37		0.00	dry	0.00	dry	0.00	dry
3/27/2012	387.70	1.61	0.37		0.00	dry	0.00	dry	0.00	dry
4/23/2012	392.30	1.51	0.39		0.00	dry	0.00	dry	0.00	dry

**TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021**

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
5/25/2012	388.30	0.06	0.46		0.00	dry	0.00	dry	0.00	dry
6/13/2012	385.10	0.06	0.48		0.00	dry	0.00	dry	0.00	dry
6/26/2012	386.90	0.00	0.61		0.00	dry	0.00	dry	0.00	dry
7/24/2012	378.00	0.10	0.40		0.00	dry	0.00	dry	0.00	dry
8/8/2012	382.90	0.10	0.34		0.00	dry	0.00	dry	0.00	dry
8/29/2012	382.70	0.00	0.40		0.00	dry	0.00	dry	0.00	dry
8/29.5/2012	382.70	0.00	0.40		0.00	dry	0.00	dry	0.00	dry
9/25/2012	381.90	0.00	0.35		0.00	dry	0.00	dry	0.00	dry
10/24/2012	384.40	0.08	0.32		0.00	dry	0.00	dry	0.00	dry
11/27/2012	389.60	0.86	0.38		0.00	dry	0.00	dry	0.00	dry
12/18/2012	394.70	1.96	0.40		0.00	dry	0.00	dry	0.00	dry
1/23/2013	393.00	1.53	0.55		0.02		0.00	dry	0.00	dry
2/26/2013	391.50	0.49	0.55		0.00		0.00	dry	0.00	dry
3/26/2013	394.40	1.00	0.49		0.00		0.00	dry	0.00	dry
4/25/2013	391.00	0.01	0.50		0.00	dry	0.00	dry	0.00	dry
5/22/2013	392.00	0.00	0.55		0.00	dry	0.00	dry	0.00	dry
6/25/2013	380.60	0.00	0.46		0.00	dry	0.00	dry	0.00	dry
7/23/2013	380.20	0.00	0.43		0.00	dry	0.00	dry	0.00	dry
8/21/2013	379.60	0.00	0.45		0.00	dry	0.00	dry	0.00	dry
9/25/2013	382.20	0.00	0.37		0.00	dry	0.00	dry	0.00	dry
10/29/2013	382.00	0.00	0.33		0.00	dry	0.00	dry	0.00	dry
11/26/2013	390.10	0.44	0.33		0.00	dry	0.00	dry	0.00	dry
12/17/2013	394.70	1.10	0.41		0.00	dry	0.00	dry	0.00	dry
1/28/2014	392.30	0.00	0.48		0.00	dry	0.00	dry	0.00	dry
2/26/2014	389.90	0.72	0.48		0.00	dry	0.00	dry	0.00	dry
3/26/2014	387.20		0.48		0.00	dry	0.00	dry	0.00	dry
3/28/2014	387.20	1.78	0.42		0.00	dry	0.00	dry	0.00	dry
4/23/2014	393.00	0.34	0.45		0.00	dry	0.00	dry	0.00	dry
5/28/2014	387.50	0.00	0.49		0.00	dry	0.00	dry	0.00	dry
6/25/2014	388.70	0.00	0.48		0.00	dry	0.00	dry	0.00	dry
7/29/2014	382.80	0.00	0.45		0.00	dry	0.00	dry	0.00	dry
8/28/2014	386.80	0.04	0.40		0.00	dry	0.00	dry	0.00	dry
9/24/2014	387.90	0.00	0.41		0.00	dry	0.00	dry	0.00	dry
10/29/2014	383.90	0.00	0.36		0.00	dry	0.00	dry	0.00	dry

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
11/21/2014	388.30	0.35	0.43		0.00	dry	0.00	dry	0.00	dry
12/22/2014	399.80	4.75	0.41		0.00	dry	0.00	dry	0.00	dry
1/28/2015	396.90	1.28	0.55		0.30		0.00	dry	0.00	dry
2/24/2015	392.70	0.34	0.50		0.10		0.00	dry	0.00	dry
3/31/2015	388.90	0.67	0.58		0.04		0.00	dry	0.00	dry
4/23/2015	390.30	0.20	0.61		0.00	dry	0.00	dry	0.00	dry
5/28/2015	400.30	1.87	0.60		0.55		0.00	dry	0.00	dry
6/24/2015	400.70	0.00	0.69		0.63		0.00	dry	0.00	dry
7/30/2015	400.20	0.00	0.69		0.87		0.00	dry	0.00	dry
8/25/2015	384.00	0.00	0.71		0.01		0.00	dry	0.00	dry
9/23/2015	388.60	2.17	0.55		0.00		0.00	dry	0.00	dry
10/29/2015	387.60	0.16	0.58		0.00		0.00	dry	0.00	dry
11/25/2015	386.90	0.15	0.52		0.00		0.00		0.00	dry
12/23/2015	395.90	1.55	0.50		0.04		0.01		0.00	dry
1/26/2016	401.20	2.86	0.62		0.63		0.00	dry	0.00	dry
2/24/2016	393.60	0.39	0.62		0.24		0.00	dry	0.00	dry
3/29/2016	397.10	1.55	0.71		0.36		0.08		0.00	dry
4/29/2016	391.60	0.04	0.81		0.16		0.00		0.00	dry
5/24/2016	401.60	0.13	0.55		0.46		0.00		0.00	dry
6/29/2016	392.50	0.00	0.69		0.25		0.00		0.00	dry
7/26/2016	377.70	0.00	0.64		0.00		0.00		0.00	dry
8/24/2016	388.10	0.00	0.59		0.00		0.00		0.00	dry
9/29/2016	388.20	0.00	0.55		0.00		0.00		0.00	dry
10/26/2016	392.10	0.96	0.53		0.00		0.00		0.00	dry
11/22/2016	395.70	1.42	0.78		0.09		0.00		0.00	dry
12/28/2016	400.70	4.11	0.63		0.55		0.00		0.00	dry
1/26/2017	402.40	6.70	0.56		1.25		0.00		0.00	dry
2/28/2017	389.60	4.01	0.66		0.13		0.00		0.00	dry
3/29/2017	391.80	0.14	0.55		0.00		0.00		0.00	dry
4/26/2017	387.00	0.04	0.53		0.00		0.00		0.00	dry
5/23/2017	399.40	0.30	0.59		0.60		0.00		0.00	dry
6/21/2017	392.60	0.00	0.62		0.12		0.00		0.00	dry
7/26/2017	384.60	0.00	0.58		0.00		0.00		0.00	dry
8/30/2017	383.00	0.00	0.48		0.00		0.00		0.00	dry

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
9/27/2017	382.00	0.00	0.44		0.00		0.00		0.00	dry
10/27/2017	375.00	0.00	0.40		0.00		0.00		0.00	dry
11/30/2017	382.80	0.14	0.37		0.01		0.00		0.00	dry
12/21/2017	380.50	0.00	0.36		0.00		0.00		0.00	dry
1/24/2018	397.80	1.43	0.34		0.00		0.00		0.00	dry
2/21/2018	382.40	0.17	0.51		0.00		0.00		0.00	dry
3/29/2018	392.10	0.00	0.42		0.00		0.00		0.00	dry
4/25/2018	388.00	0.05	0.44		0.00		0.00		0.00	dry
5/30/2018	399.50	0.21	0.48		0.00		0.00		0.00	dry
6/28/2018	398.90	0.00	0.48		0.40		0.00		0.00	dry
7/25/2018	388.60	0.00	0.60		0.00		0.00		0.00	dry
8/24/2018	378.60	0.00	0.44		0.00		0.00		0.00	dry
9/27/2018	381.40	0.00	0.48		0.00		0.00		0.00	dry
10/18/2018	385.20	1.45	0.37		0.00		0.00		0.00	dry
11/28/2018	389.10	1.32	0.37		0.00		0.00		0.00	dry
12/20/2018	394.20	2.12	0.35		0.00		0.00		0.00	dry
1/30/2019	394.90	4.31	0.45		0.00		0.00		0.00	dry
2/21/2019	396.00	8.26	0.87		0.26		0.00		0.00	dry
3/27/2019	376.00	1.88	0.55		0.00		0.00		0.00	dry
4/25/2019	377.70	0.03	0.45		0.00		0.00		0.00	dry
5/30/2019	395.30	0.92	0.54		0.00		0.00		0.00	dry
6/26/2019	388.40	0.01	0.57		0.00		0.00		0.00	dry
7/5/2019	385.50	0.00	0.48		0.00		0.00		0.00	dry
7/30/2019	385.20	0.00	0.55		0.00		0.00		0.00	dry
8/27/2019	387.90	0.00	0.47		0.00		0.00		0.00	dry
9/26/2019	380.00	0.00	0.36		0.00		0.00		0.00	dry
10/23/2019	378.90	0.00	0.39		0.00		0.00		0.00	dry
11/26/2019	383.80	2.60	0.34		0.00		0.00		0.00	dry
12/18/2019	389.20	4.63	0.33		0.00		0.00		0.00	dry
1/29/2020	388.20	0.15	1.27		0.00		0.00		0.00	dry
2/25/2020	384.70	0.33	0.55		0.00		0.00		0.00	
3/24/2020	391.70	3.91	0.42		0.00		0.00		0.00	
4/23/2020	399.40	4.05	0.58		0.17		0.00		0.00	
5/27/2020	388.50	0.40	0.63		0.00		0.00		0.00	

TABLE 4
RATTLESNAKE CANYON DAM
SEEPAGE FLOW RATE MEASUREMENTS
JANUARY 2007 THROUGH DECEMBER 2021

Flow Point ID -->			FP-4		FP-5		FP-8		FP-11	
Date	Reservoir Elevation (ft)	Monthly Rainfall (in.)	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment	Reading (gpm)	Comment
6/24/2020	388.00	0.01	0.61		0.00		0.00		0.00	
7/29/2020	358.70	0.00	0.67		0.00		0.00		0.00	
8/26/2020	379.30	0.00	0.75		0.00		0.00		0.00	
9/29/2020	381.30	0.00	0.43		0.00		0.00		0.00	
10/28/2020	376.50	0.00	0.40		0.00		0.00		0.00	
11/24/2020	380.70	0.25	0.40		0.00		0.00		0.00	
12/23/2020	384.10	1.40	0.28		0.00		0.00		0.00	
1/26/2021	386.20	2.42	0.35		0.00		0.00			
2/25/2021	385.40	0.07	0.39		0.00		0.00			
3/23/2021	394.80	1.35	0.48		0.00		0.00			
4/27/2021	384.10	0.04	0.35		0.00		0.00			
5/27/2021	383.50	0.04	0.40		0.00		0.00			
6/30/2021	385.40	0.00	0.24		0.00		0.00			
7/29/2021	381.70	0.03	0.23		0.00		0.00			
8/24/2021	383.40	0.00	0.40		0.00		0.00			
9/28/2021	381.30	0.06	0.38		0.00		0.00			
10/27/2021	382.70	0.71	0.51		0.00		0.00			
11/23/2021	381.00	0.00	0.44		0.00		0.00			
12/21/2021	386.30	6.10	0.40		0.00		0.00			

**TABLE 5
RATTLESNAKE CANYON DAM
HORIZONTAL MOVEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

HORIZONTAL MOVEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022																
Monument ID		A		B		B-1		C		D		E		E-1		Comment
Approx. Station		2+14.8		2+74.7		2+77.7		5+74.6		8+74.6		11+74.7		11+75.1		
Year	Date	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	
1985	10/19/1985	-0.090	-1.080					0.010	0.120	0.000	0.000	-0.010	-0.100			Initial Reading for A,C,D & E
1986																Data was not found
1987	8/19/1987	-0.100	-1.200					0.020	0.240	0.000	0.000	-0.010	-0.120			
1990	10/5/1990	-0.050	-0.600			0.000	0.000	0.060	0.720	0.020	0.240	0.000	0.000			Initial Reading for B-1
1991	6/12/1991	-0.020	-0.240			0.000	0.000	0.080	0.960	0.050	0.600	0.010	0.120			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	-0.040	-0.480			0.020	0.240	0.080	0.960	0.060	0.720	0.020	0.240			BM-2 was destroyed
1995																Data was not found
1996	5/2/1996	-0.050	-0.600			0.000	0.000	0.040	0.480	0.050	0.600	0.020	0.240			
1997	5/28/1997	-0.050	-0.600			0.000	0.000	0.050	0.600	0.050	0.600	0.020	0.240			
1998	5/1/1998	-0.060	-0.720			-0.020	-0.240	0.050	0.600	0.050	0.600	0.020	0.240			
1999	4/28/1999	-0.065	-0.780			0.010	0.120	0.070	0.840	0.050	0.600					Monument E was caved over
2000	6/28/2000	-0.065	-0.780			0.005	0.060	0.065	0.780	0.050	0.600	0.080	0.960			Monument E was reestablished
2001	5/3/2001	-0.070	-0.840	0.060	0.720	0.020	0.240	0.080	0.960	0.050	0.600	0.085	1.020	0.000	0.000	Initial Reading for Band E-1
2002	5/20/2002	-0.075	-0.900	0.070	0.840	0.020	0.240	0.085	1.020	0.060	0.720	0.090	1.080	-0.005	-0.060	
2003	5/22/2003	-0.070	-0.840	0.085	1.020	0.030	0.360	0.090	1.080	0.055	0.660	0.100	1.200	0.000	0.000	
2004	5/18/2004	-0.070	-0.840	0.085	1.020	0.030	0.360	0.095	1.140	0.060	0.720	0.100	1.200	0.000	0.000	
2005	5/31/2005	-0.070	-0.840	0.080	0.960	0.030	0.360	0.095	1.140	0.060	0.720	0.105	1.260	0.000	0.000	
2006	5/31/2006	-0.065	-0.780	0.085	1.020	0.040	0.480	0.095	1.140	0.060	0.720	0.100	1.200	0.000	0.000	
2007	5/16/2007	-0.065	-0.780	0.090	1.080	0.040	0.480	0.090	1.080	0.065	0.780	0.100	1.200	0.000	0.000	
2008	5/23/2008	-0.065	-0.780	0.095	1.140	0.045	0.540	0.100	1.200	0.065	0.780	0.115	1.380	0.000	0.000	
2009	6/10/2009	-0.075	-0.900	0.115	1.380	0.060	0.720	0.110	1.320	0.070	0.840	0.120	1.440	0.000	0.000	
2010	5/19/2010	-0.065	-0.780	0.105	1.260	0.055	0.660	0.100	1.200	0.075	0.900	0.105	1.260	0.000	0.000	
2011	5/18/2011	-0.065	-0.780	0.115	1.380	0.065	0.780	0.100	1.200	0.075	0.900	0.110	1.320	0.015	0.180	
2012	5/18/2012	-0.070	-0.840	0.115	1.380	0.065	0.780	0.095	1.140	0.075	0.900	0.095	1.140	0.010	0.120	
2013	6/6/2013	-0.075	-0.900	0.120	1.440	0.070	0.840	0.095	1.140	0.075	0.900	0.115	1.380	0.005	0.060	
2014	4/21/2014	-0.075	-0.900	0.120	1.440	0.080	0.960	0.110	1.320	0.090	1.080	0.125	1.500	0.010	0.120	
2015	6/4/2015	-0.080	-0.960	0.120	1.440	0.080	0.960	0.110	1.320	0.085	1.020	0.115	1.380	0.010	0.120	
2016	7/25/2016	-0.085	-1.020	0.125	1.500	0.080	0.960	0.110	1.320	0.085	1.020	0.115	1.380	0.010	0.120	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	-0.087	-1.044	0.125	1.500	0.075	0.900	0.105	1.260	0.075	0.900	0.100	1.200	0.000	0.000	
2019	5/31/2019	-0.085	-1.020	0.125	1.500	0.080	0.960	0.105	1.260	0.075	0.900	0.095	1.140	0.000	0.000	
2020	7/18/2020	-0.080	-0.960	0.120	1.440	0.080	0.960	0.110	1.320	0.080	0.960	0.090	1.080	0.000	0.000	
2022	4/26/2022	-0.075	-0.900	0.140	1.680	0.080	0.960	0.130	1.560	0.070	0.840	0.110	1.320	0.000	0.000	Survey for 2021 Review Period

**TABLE 6
RATTLESNAKE CANYON DAM
CUMULATIVE HORIZONTAL DISPLACEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

Monument ID		CUMULATIVE HORIZONTAL DISPLACEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022														Comment
Approx . Station		A		B		B-1		C		D		E		E-1		
Year	Date	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	(feet)	(inches)	
1985	10/19/1985	0.000	0.000					0.000	0.000	0.000	0.000	0.000	0.000			Initial Reading for A, C, D & E
1986																Data was not found
1987	8/19/1987	-0.010	-0.120					0.010	0.120	0.000	0.000	0.000	0.000			
1988																Data was not found
1989																Data was not found
1990	10/5/1990	0.040	0.480			0.000	0.000	0.050	0.600	0.020	0.240	0.010	0.120			Initial Reading for 8-1
1991	6/12/1991	0.070	0.840			0.000	0.000	0.070	0.840	0.050	0.600	0.020	0.240			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	0.050	0.600			0.020	0.240	0.070	0.840	0.060	0.720	0.030	0.360			BM-2 was destroyed
1995												0.000	0.000			Data was not found
1996	5/2/1996	0.040	0.480			0.000	0.000	0.030	0.360	0.050	0.600	0.030	0.360			
1997	5/28/1997	0.040	0.480			0.000	0.000	0.040	0.480	0.050	0.600	0.030	0.360			
1998	5/1/1998	0.030	0.360			-0.020	-0.240	0.040	0.480	0.050	0.600	0.030	0.360			
1999	4/28/1999	0.025	0.300			0.010	0.120	0.060	0.720	0.050	0.600					Monument E was paved over
2000	6/28/2000	0.025	0.300			0.005	0.060	0.055	0.660	0.050	0.600	0.030	0.360			Monument E was reestablished
2001	5/3/2001	0.020	0.240	0.000	0.000	0.020	0.240	0.070	0.840	0.050	0.600	0.035	0.420	0.000	0.000	Initial Reading for Band E-1
2002	5/20/2002	0.015	0.180	0.010	0.120	0.020	0.240	0.075	0.900	0.060	0.720	0.040	0.480	-0.005	-0.060	
2003	5/22/2003	0.020	0.240	0.025	0.300	0.030	0.360	0.080	0.960	0.055	0.660	0.050	0.600	0.000	0.000	
2004	5/18/2004	0.020	0.240	0.025	0.300	0.030	0.360	0.085	1.020	0.060	0.720	0.050	0.600	0.000	0.000	
2005	5/31/2005	0.020	0.240	0.020	0.240	0.030	0.360	0.085	1.020	0.060	0.720	0.055	0.660	0.000	0.000	
2006	5/31/2006	0.025	0.300	0.025	0.300	0.040	0.480	0.085	1.020	0.060	0.720	0.050	0.600	0.000	0.000	
2007	5/16/2007	0.025	0.300	0.030	0.360	0.040	0.480	0.080	0.960	0.065	0.780	0.050	0.600	0.000	0.000	
2008	5/23/2008	0.025	0.300	0.035	0.420	0.045	0.540	0.090	1.080	0.065	0.780	0.065	0.780	0.000	0.000	
2009	6/10/2009	0.015	0.180	0.055	0.660	0.060	0.720	0.100	1.200	0.070	0.840	0.070	0.840	0.000	0.000	
2010	5/19/2010	0.025	0.300	0.045	0.540	0.055	0.660	0.090	1.080	0.075	0.900	0.055	0.660	0.000	0.000	
2011	5/18/2011	0.025	0.300	0.055	0.660	0.065	0.780	0.090	1.080	0.075	0.900	0.060	0.720	0.015	0.180	
2012	5/18/2012	0.020	0.240	0.055	0.660	0.065	0.780	0.085	1.020	0.075	0.900	0.045	0.540	0.010	0.120	
2013	6/6/2013	0.015	0.180	0.060	0.720	0.070	0.840	0.085	1.020	0.075	0.900	0.065	0.780	0.005	0.060	
2014	4/21/2014	0.015	0.180	0.060	0.720	0.080	0.960	0.100	1.200	0.090	0.800	0.075	0.900	0.010	0.120	
2015	6/4/2015	0.010	0.120	0.060	0.720	0.080	0.960	0.100	1.200	0.085	0.800	0.065	0.780	0.010	0.120	
2016	7/25/2016	0.005	0.060	0.065	0.780	0.080	0.960	0.100	1.200	0.085	0.800	0.065	0.780	0.010	0.120	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	0.003	0.036	0.065	0.780	0.075	0.900	0.095	1.140	0.075	0.900	0.110	1.320	0.000	0.000	
2019	5/31/2019	0.005	0.060	0.065	0.780	0.080	0.960	0.095	1.140	0.075	0.900	0.105	1.260	0.000	0.000	
2020	7/18/2020	0.010	0.120	0.060	0.720	0.080	0.960	0.100	1.200	0.080	0.960	0.100	1.200	0.000	0.000	
2022	4/26/2022	0.015	0.180	0.080	0.960	0.080	0.960	0.120	1.440	0.070	0.840	0.120	1.440	0.000	0.000	Survey for 2021 Review Period

**TABLE 7
RATTLESNAKE CANYON DAM
ELEVATIONS OF SURVEY MONUMENTS
1985 THROUGH 2022**

ELEVATIONS OF SURVEY MONUMENTS 1985 THROUGH 2022								
Monument ID	A	B	B-1	C	D	E	E-1	Comment
Approx. Station	2+14.8	2+74.7	2+77.7	5+74.6	8+74.6	11+74.7	11+75.1	
Year	Date	(feet)	(feet)	(feet)	{feet}	{feet}	(feet)	
1985	10/19/1985	419.320			417.980	418.280	418.530	Initial Reading for AC,D & E
1986								Data were not found
1987	8/19/1987	419.280			417.970	418.260	418.560	
1988								Data was not found
1989								Data was not found
1990	10/5/1990	419.200		417.980	417.930	418.250	418.530	Initial Reading for B-1
1991	6/12/1991	419.190		417.980	417.910	418.210	418.530	
1992								Data was not found
1993								Data was not found
1994	5/11/1994	419.180		417.950	417.910	418.220	418.530	BM-2 was destroyed
1995								Data was not found
1996	5/2/1996	419.180		417.940	417.900	418.220	418.530	
1997	5/28/1997	419.180		417.940	417.910	418.230	418.530	
1998	5/1/1998	419.180		417.930	417.900	418.220	418.530	
1999	4/28/1999	419.180		417.925	417.905	418.230		Monument E was paved over
2000	6/28/2000	419.180		417.920	417.900	418.225	418.065	Monument E was reestablished
2001	5/3/2001	419.185	418.015	417.925	417.915	418.250	418.090	418.745
2002	5/21/2002	419.185	418.005	417.915	417.915	418.245	418.090	418.745
2003	5/22/2003	419.105	418.000	417.915	417.910	418.245	418.090	418.750
2004	5/18/2004	419.185	418.000	417.915	417.910	418.250	418.100	418.750
2005	5/31/2005	419.180	417.995	417.905	417.915	418.245	418.095	418.750
2006	5/31/2006	419.185	417.990	417.900	417.920	418.250	418.095	418.755
2007	5/16/2007	419.182	417.987	417.898	417.921	418.254	418.106	418.759
2008	5/23/2008	419.185	417.985	417.900	417.925	418.260	418.115	418.770
2009	6/10/2009	419.180	417.980	417.895	417.925	418.260	418.100	418.760
2010	5/19/2010	419.180	417.980	417.890	417.920	418.255	418.100	418.755
2011	5/18/2011	419.180	417.975	417.885	417.925	418.260	418.110	418.760
2012	5/24/2012	419.175	417.970	417.880	417.930	418.265	418.115	418.765
2013	6/6/2013	419.170	417.970	417.880	417.935	418.270	418.120	418.775
2014	4/21/2014	419.170	417.970	417.885	417.940	418.275	418.125	418.780
2015	6/4/2015	419.165	417.975	417.890	417.945	418.280	418.135	418.790
2016	7/25/2016	419.160	417.975	417.890	417.950	418.290	418.145	418.800
2017								BM-4 was destroyed No survey was done in 2017
2018	5/31/2018	419.160	417.980	417.890	417.950	418.290	418.160	418.815
2019	5/31/2019	419.160	417.970	417.885	417.950	418.295	418.165	418.815
2020	7/18/2020	419.159	417.966	417.878	417.940	418.277	418.152	418.810
2022	4/26/2022	419.158	417.959	417.871	417.93	418.273	418.151	418.806
								Survey for 2021 Review Period

Note:

1. Vertical data is referenced in NGVD 29 datum.

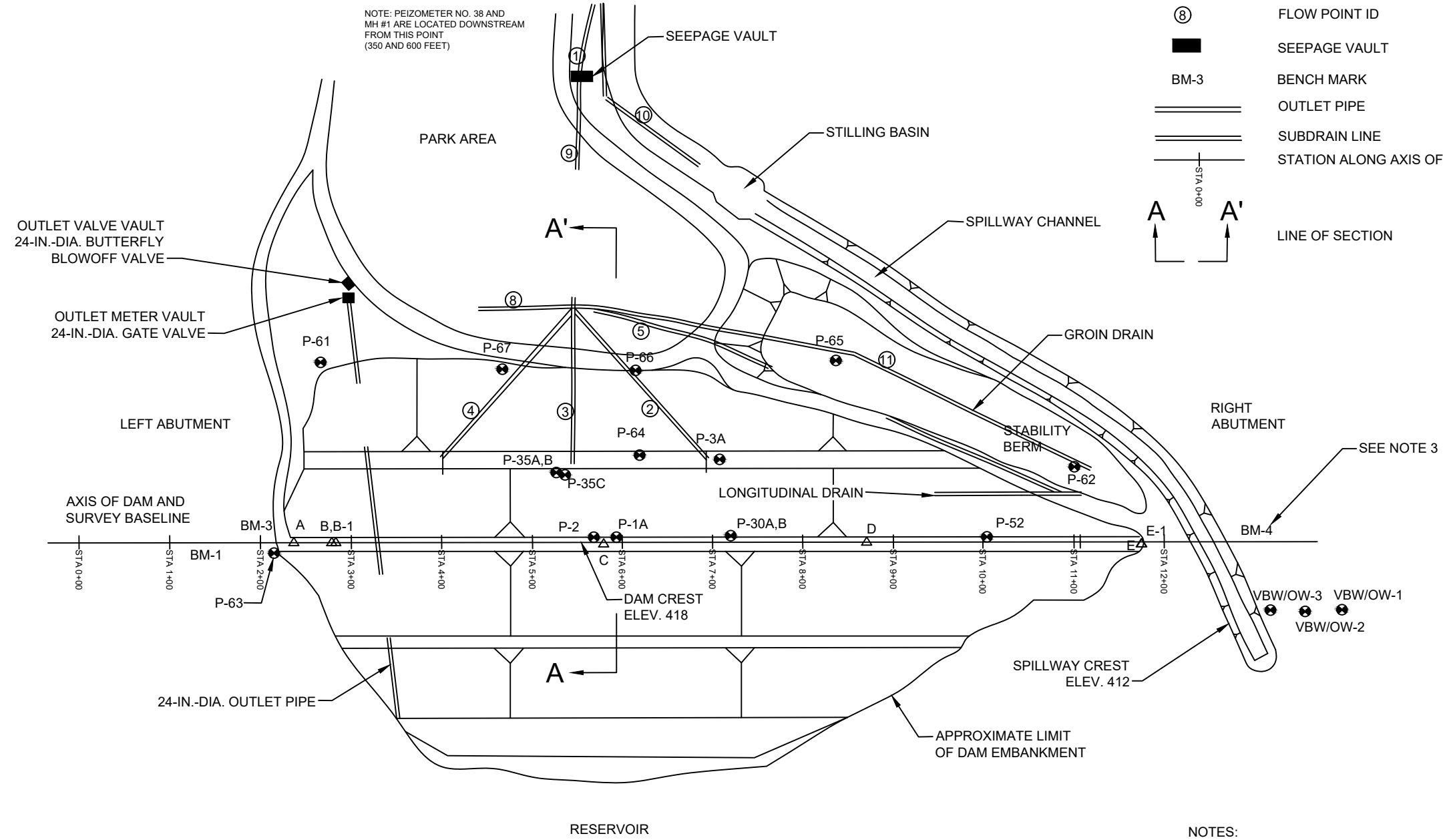
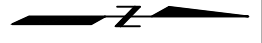
**TABLE 8
RATTLESNAKE CANYON DAM
CUMULATIVE VERTICAL MOVEMENT OF SURVEY MONUMENTS
1985 THROUGH 2022**

CUMULATIVE VERTICAL MOVEMENT OF SURVEY MONUMENTS 1985 THROUGH 2022																
Monument ID		A		B		B-1		C		D		E		E-1		Comment
Approx. Station		2+14.8		2+74.7		2+77.7		5+74.6		8+74.6		11+74.7		11+75.1		
Year	Date	(feet)	(inches)	(feet)	(inches)	(feet)	(Inches)	(feet)	(inches)	(feet)	(Inches)	(feet)	(inches)	(feet)	(Inches)	
1985	10/19/1985	0.000	0.000					0.000	0.000	0.000	0.000	0.000	0.000			Initial Reading for A,C,D & E
1986																Data was not found
1987	8/19/1987	0.040	0.480					0.010	0.120	0.020	0.240	-0.030	-0.360			
1988																Data was not found
1989																Data was not found
1990	10/5/1990	0.120	1.440			0.000	0.000	0.050	0.600	0.030	0.360	0.000	0.000			Initial Reading for B-1
1991	6/12/1991	0.130	1.560			0.000	0.000	0.070	0.840	0.070	0.840	0.000	0.000			
1992																Data was not found
1993																Data was not found
1994	5/11/1994	0.140	1.680			0.030	0.360	0.070	0.840	0.060	0.720	0.000	0.000			BM-2 was destroyed
1995																Data was not found
1996	5/2/1996	0.140	1.680			0.040	0.480	0.080	0.960	0.060	0.720	0.000	0.000			
1997	5/28/1997	0.140	1.680			0.040	0.480	0.070	0.840	0.050	0.600	0.000	0.000			
1998	5/1/1998	0.140	1.680			0.050	0.600	0.080	0.960	0.060	0.720	0.000	0.000			
1999	4/28/1999	0.140	1.680			0.055	0.660	0.075	0.900	0.050	0.600					Monument E was paved over
2000	6/28/2000	0.140	1.680			0.060	0.720	0.080	0.960	0.055	0.660	0.000	0.000			Monument E was reestablished
2001	5/3/2001	0.135	1.620	0.000	0.000	0.055	0.660	0.065	0.780	0.030	0.360	-0.025	-0.300	0.000	0.000	Initial Reading for Band E-1
2002	5/21/2002	0.135	1.620	0.010	0.120	0.065	0.780	0.065	0.780	0.035	0.420	-0.025	-0.300	0.000	0.000	
2003	5/22/2003	0.215	2.580	0.015	0.180	0.065	0.780	0.070	0.840	0.035	0.420	-0.025	-0.300	-0.005	-0.060	
2004	5/18/2004	0.135	1.620	0.015	0.180	0.065	0.780	0.070	0.840	0.030	0.360	-0.035	-0.420	-0.005	-0.060	
2005	5/31/2005	0.140	1.680	0.020	0.240	0.075	0.900	0.065	0.780	0.035	0.420	-0.030	-0.360	-0.005	-0.060	
2006	5/31/2006	0.135	1.620	0.025	0.300	0.080	0.960	0.060	0.720	0.030	0.360	-0.030	-0.360	-0.010	-0.120	
2007	5/16/2007	0.138	1.656	0.028	0.336	0.082	0.984	0.059	0.708	0.026	0.312	-0.041	-0.492	-0.014	-0.168	
2008	5/23/2008	0.135	1.620	0.030	0.360	0.080	0.960	0.055	0.660	0.020	0.240	-0.050	-0.600	-0.025	-0.300	
2009	6/10/2009	0.140	1.680	0.035	0.420	0.085	1.020	0.055	0.660	0.020	0.240	-0.035	-0.420	-0.015	-0.180	
2010	5/19/2010	0.140	1.680	0.035	0.420	0.090	1.080	0.060	0.720	0.025	0.300	-0.035	-0.420	-0.010	-0.120	
2011	5/18/2011	0.140	1.680	0.040	0.480	0.095	1.140	0.055	0.660	0.020	0.240	-0.045	-0.540	-0.015	-0.180	
2012	5/24/2012	0.145	1.740	0.045	0.540	0.100	1.200	0.050	0.600	0.015	0.180	-0.050	-0.600	-0.020	-0.240	
2013	6/6/2013	0.150	1.800	0.045	0.540	0.100	1.200	0.045	0.540	0.010	0.120	-0.055	-0.660	-0.030	-0.360	
2014	4/21/2014	0.150	1.800	0.045	0.540	0.095	1.140	0.040	0.480	0.005	0.060	-0.060	-0.720	-0.035	-0.420	
2015	6/4/2015	0.155	1.860	0.040	0.480	0.093	1.116	0.038	0.456	0.000	0.000	-0.070	-0.840	-0.045	-0.540	
2016	7/25/2016	0.160	1.920	0.040	0.480	0.090	1.080	0.030	0.360	-0.010	-0.120	-0.080	-0.960	-0.055	-0.660	BM-4 was destroyed
2017																No survey was done in 2017
2018	5/31/2018	0.160	1.920	0.035	0.420	0.090	1.080	0.030	0.360	-0.010	-0.120	-0.095	-1.140	-0.070	-0.840	
2019	5/31/2019	0.160	1.920	0.045	0.540	0.095	1.140	0.030	0.360	-0.015	-0.180	-0.100	-1.200	-0.070	-0.840	
2020	7/18/2020	0.161	1.932	0.049	0.588	0.102	1.224	0.040	0.480	0.003	0.036	-0.087	-1.044	-0.065	-0.780	
2022	4/26/2022	0.162	1.944	0.056	0.672	0.109	1.308	0.050	0.600	0.007	0.084	-0.086	-1.032	-0.061	-0.732	Survey for 2021 Review Period

Figures

LEGEND

- P-67 PIEZOMETER OR OBSERVATION WELL
- △ D SUBSURFACE SURVEY MONUMENT
- ⑧ FLOW POINT ID
- SEEPAGE VAULT
- BM-3 BENCH MARK
- ==== OUTLET PIPE
- ==== SUBDRAIN LINE
- +— STATION ALONG AXIS OF DAM
- A A' LINE OF SECTION

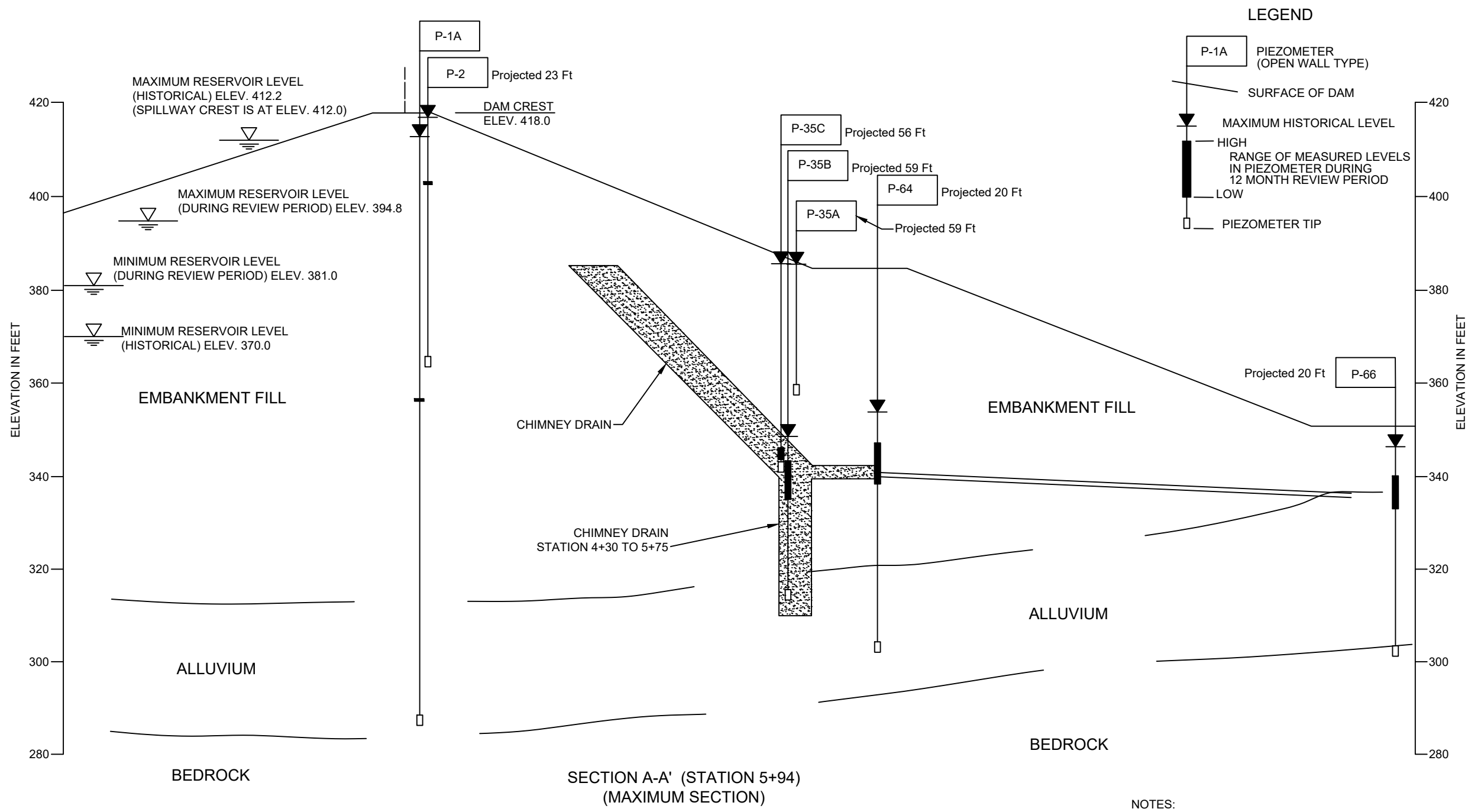


- NOTES:
1. SECTION A-A' SHOWN ON FIGURE 2
 2. ELEVATIONS ARE IN FEET RELATIVE TO NGVD29
 3. BM-4 WAS DESTROYED BETWEEN 2015 AND 2016. BM-4 WAS RE-ESTABLISHED BY 2018

NOT TO SCALE

<p>Annual Surveillance Report from Jan. 2021 to Dec. 2021 Rattlesnake Canyon Dam and Reservoir Irvine, CA</p>		<p>SITE AND INSTRUMENTATION PLAN</p>
<p>Irvine Ranch Water District Irvine, CA</p>	<p>Project 1901888</p>	<p>September 2022 Fig. 1</p>

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NOTES:
 (1) LOCATION OF SECTION A-A' IS SHOWN ON FIGURE 1
 (2) ELEVATIONS ARE IN FEET RELATIVE TO NGVD29

9

NOT TO SCALE


Annual Surveillance Report from Jan. 2021 to Dec. 2021 Rattlesnake Canyon Dam and Reservoir Irvine, CA		SECTION A-A'
Irvine Ranch Water District Irvine, CA	Project 1901888	September 2022 Fig. 2

Figure 3
 RATTLESNAKE CANYON DAM
 2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
 OPEN WELL PIEZOMETERS P-35A, P-35B, P-35C, AND P-67
 JANUARY 2020 THROUGH DECEMBER 2021

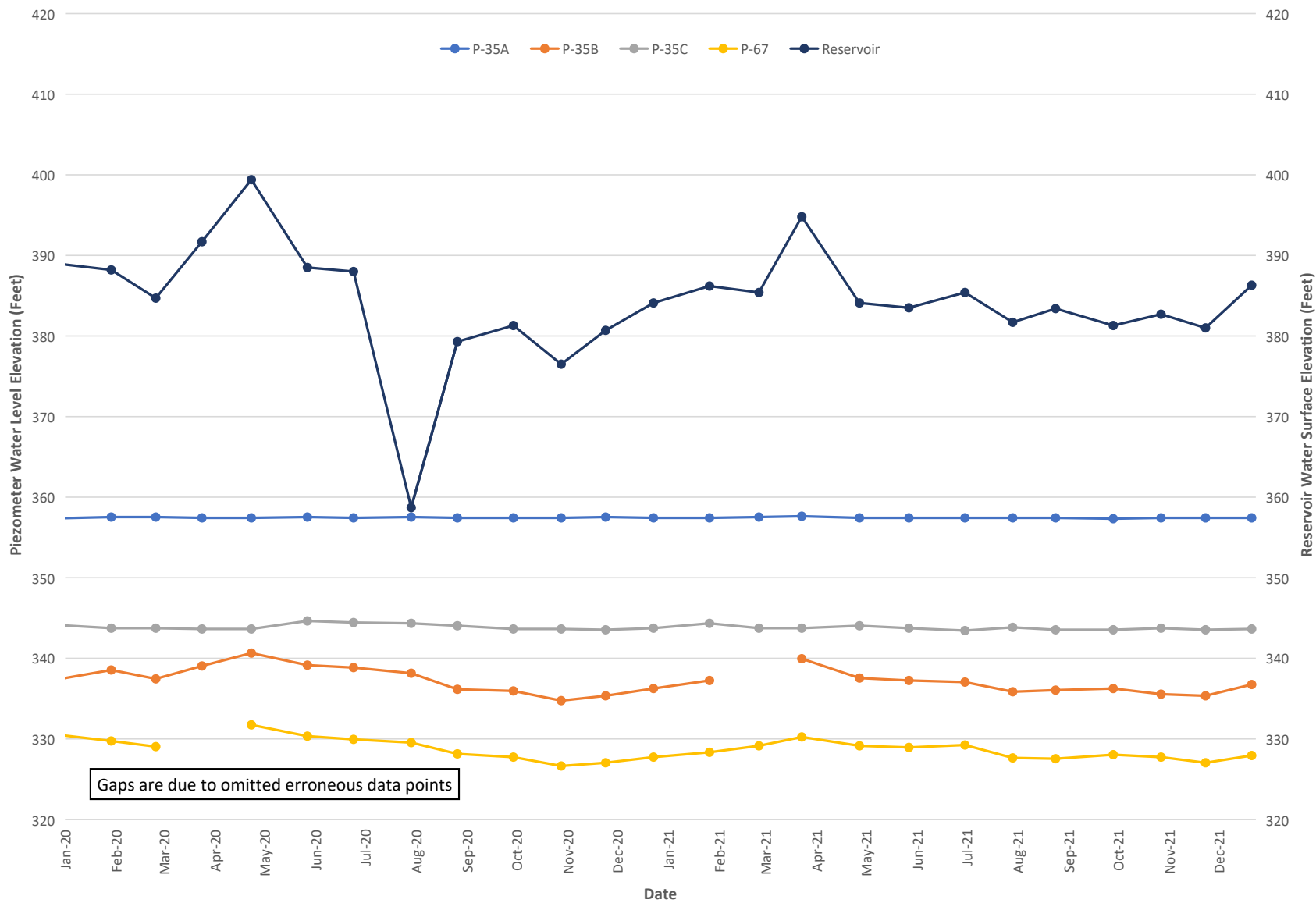


Figure 4
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-1A, P-2, P-64, AND P-66
JANUARY 2020 THROUGH DECEMBER 2021

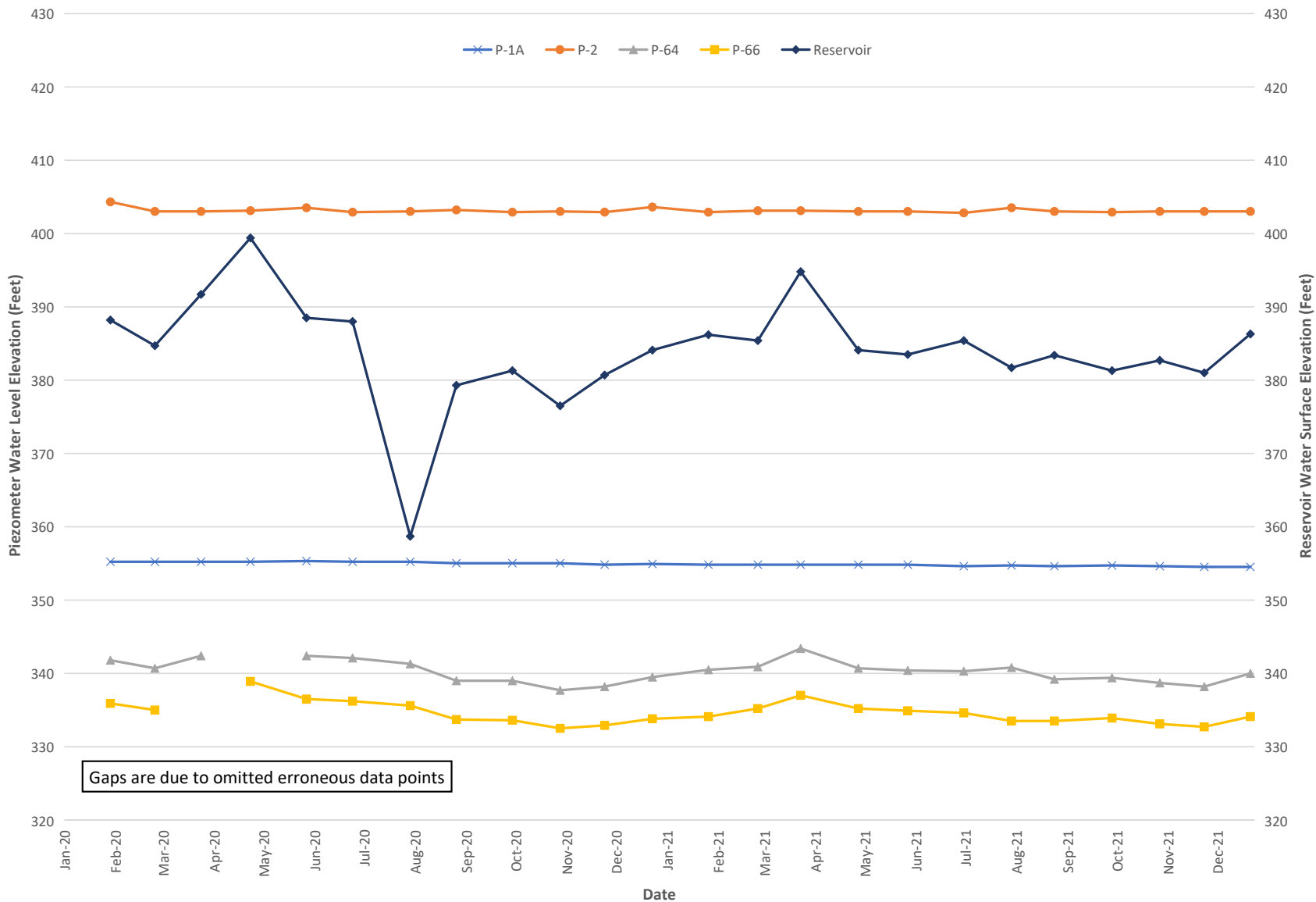


Figure 5
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-3A, AND P-30B
JANUARY 2020 THROUGH DECEMBER 2021

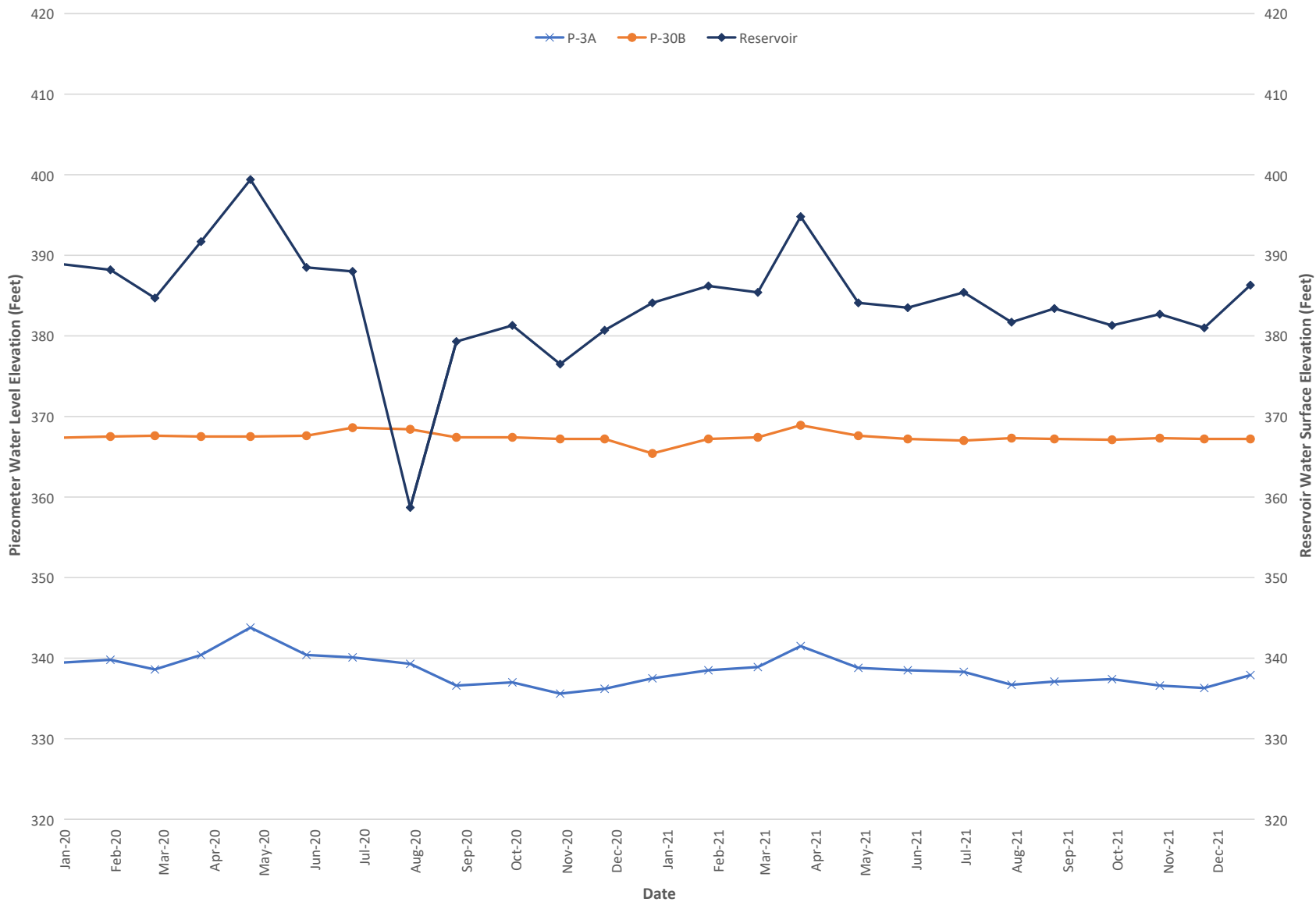


Figure 6
RATTLESNAKE CANYON DAM
2-YR OBSERVATION WELL AND RESERVOIR WATER SURFACE ELEVATIONS
OBSERVATION WELLS VBW/OW-1, VBW/OW-2, AND VBW/OW-3
JANUARY 2020 THROUGH DECEMBER 2021

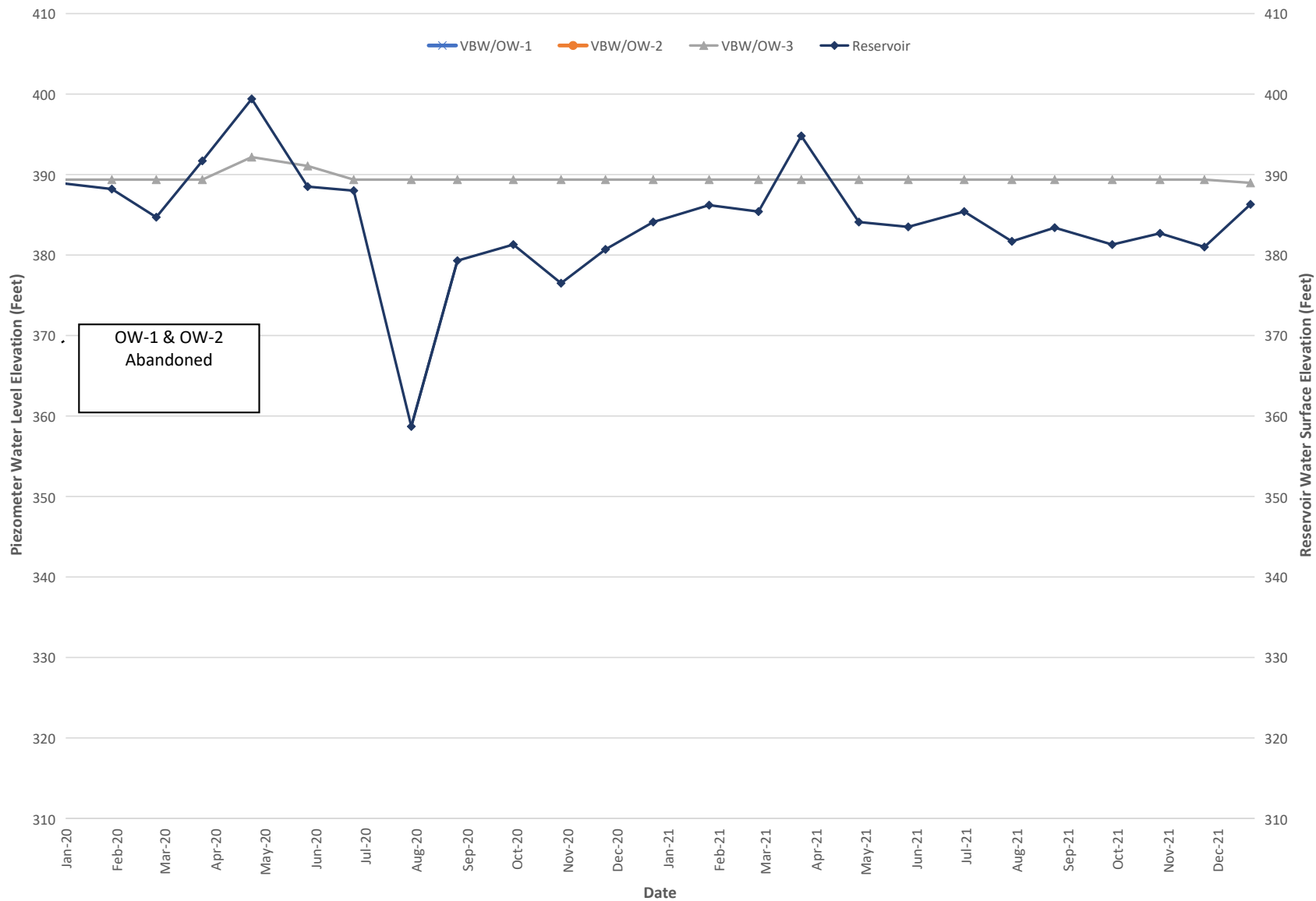


Figure 7
RATTLESNAKE CANYON DAM
2-YR OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-52, P-61, P-62, P-63, AND P-65
JANUARY 2020 THROUGH DECEMBER 2021

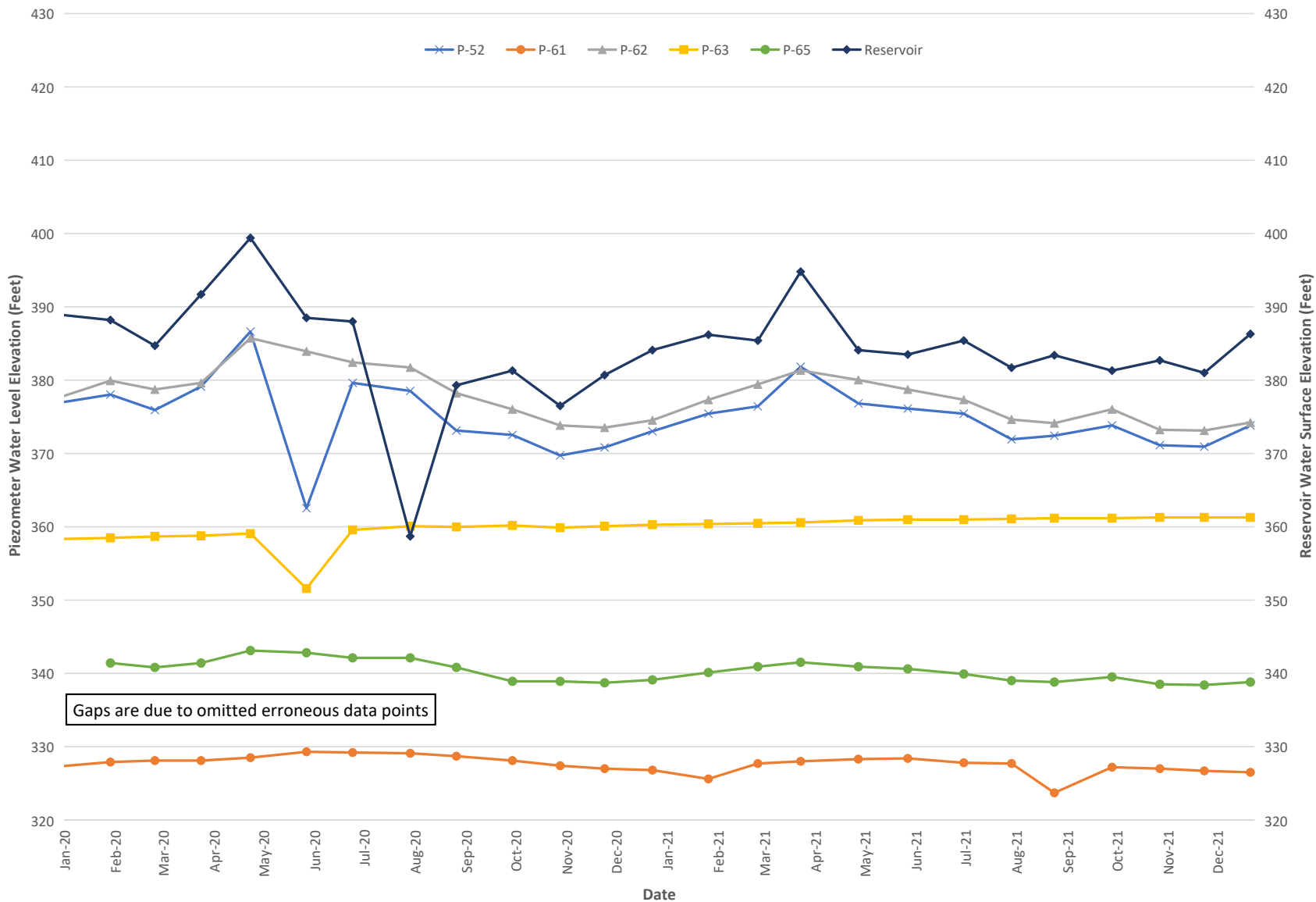


Figure 8
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-35A, P-35B, P-35C, AND P-67
JANUARY 2011 THROUGH DECEMBER 2021

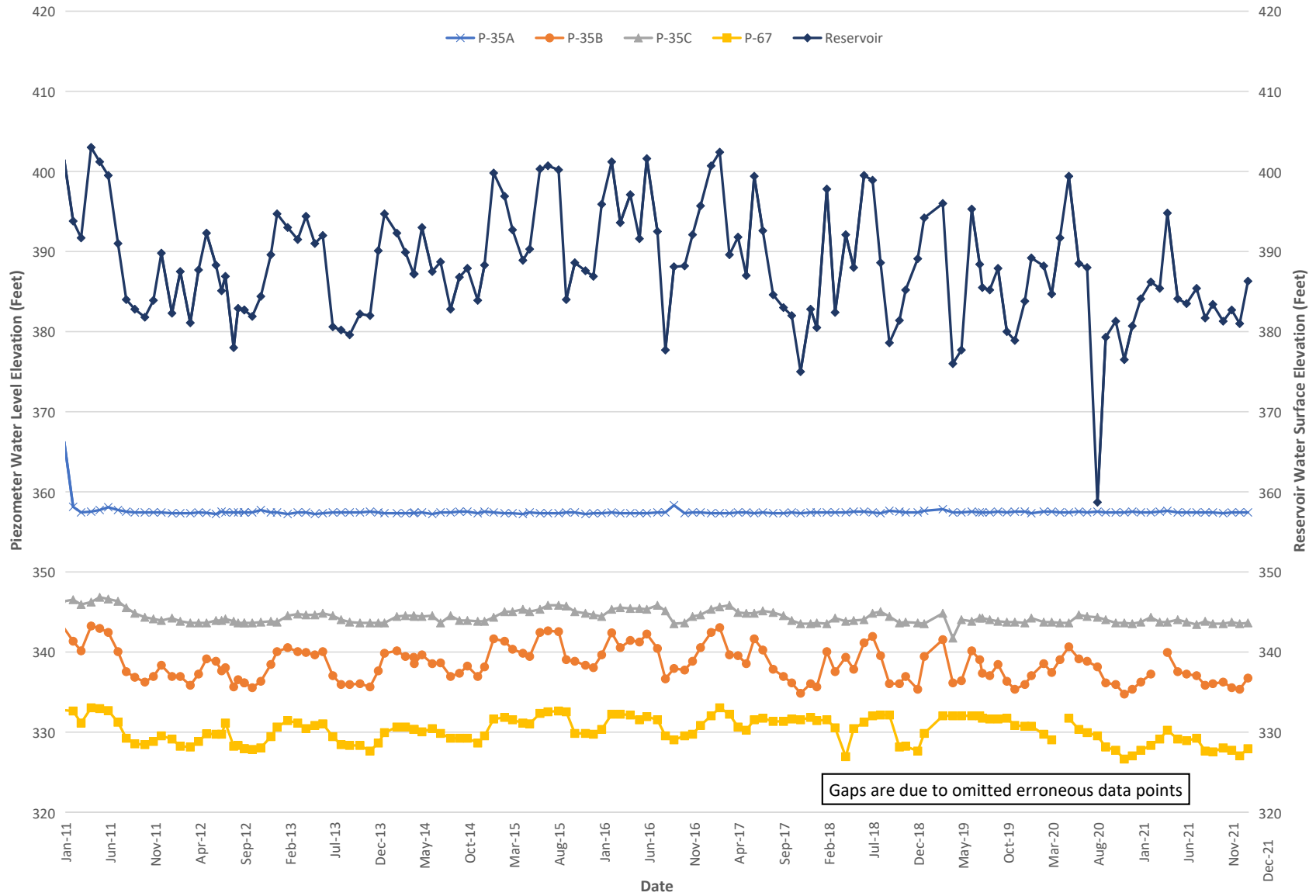


Figure 9
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-1A, P-2, P-64, AND P-66
JANUARY 2011 THROUGH DECEMBER 2021

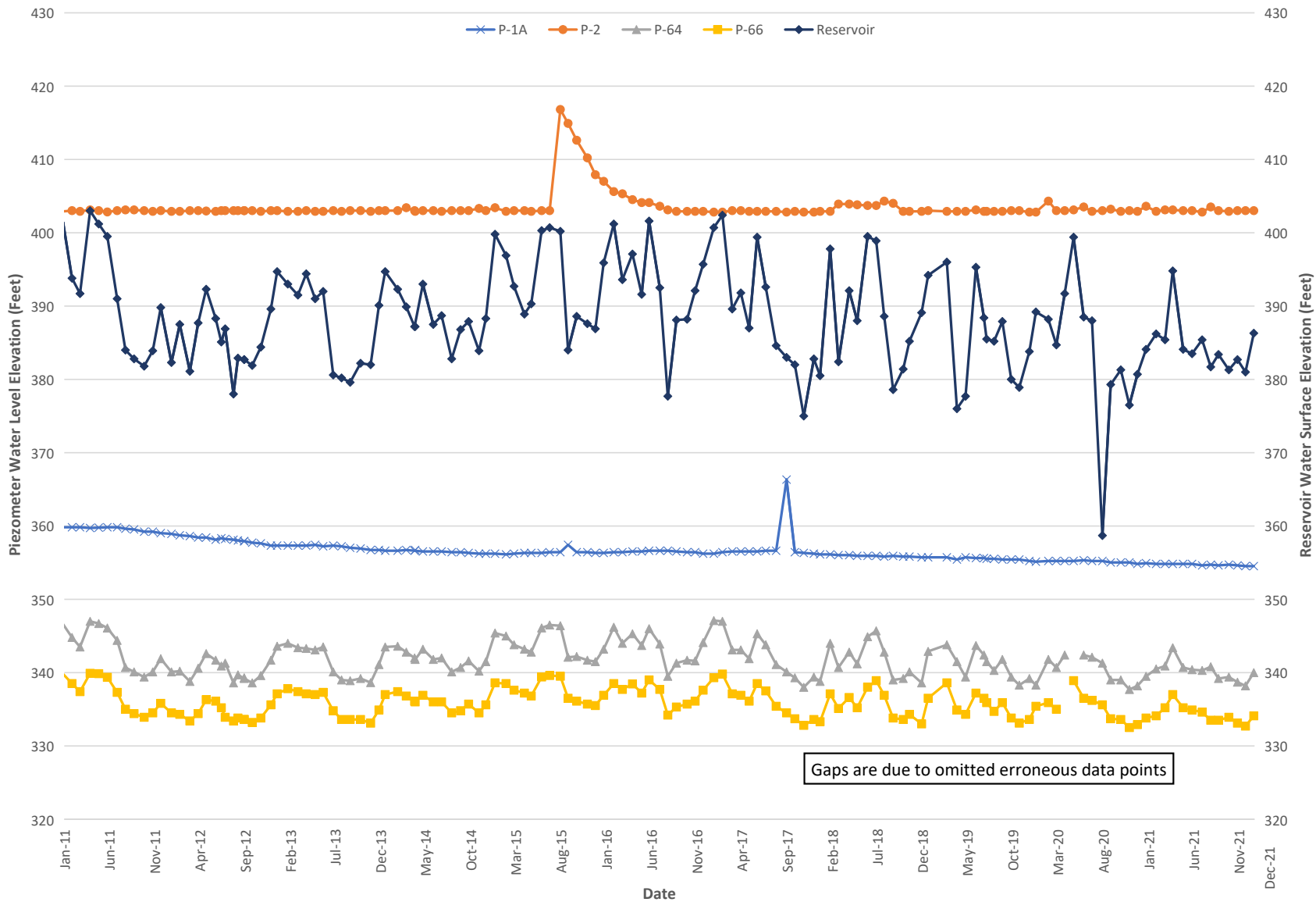


Figure 10
 RATTLESNAKE CANYON DAM
 HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
 OPEN WELL PIEZOMETERS P-3A, AND P-30B
 JANUARY 2011 THROUGH DECEMBER 2021

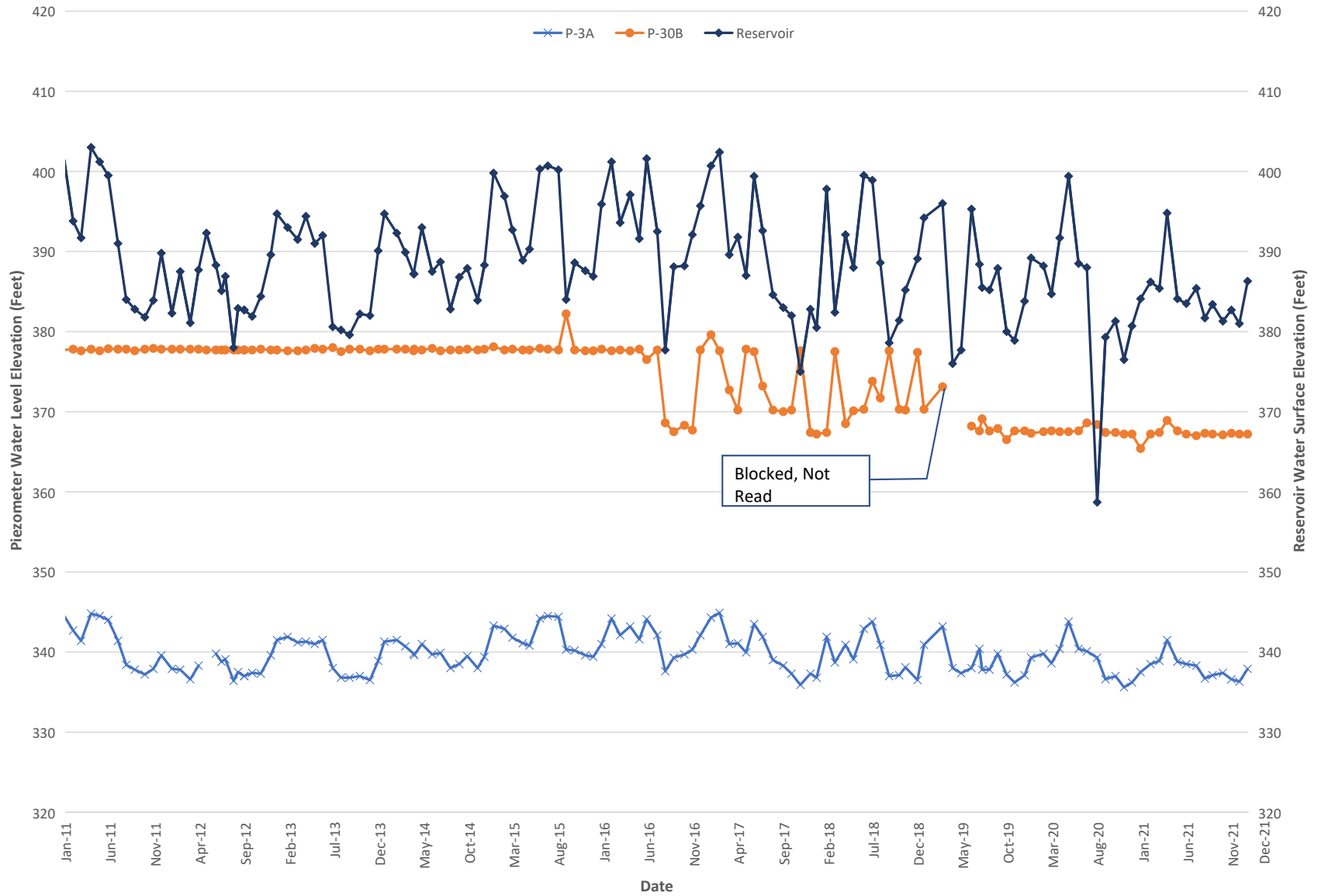


Figure 11
RATTLESNAKE CANYON DAM
HISTORICAL OBSERVATION WELL AND RESERVOIR WATER SURFACE ELEVATIONS
OBSERVATION WELLS VBW/OW-1, VBW/OW-2, AND VBW/OW-3
JANUARY 2011 THROUGH DECEMBER 2021

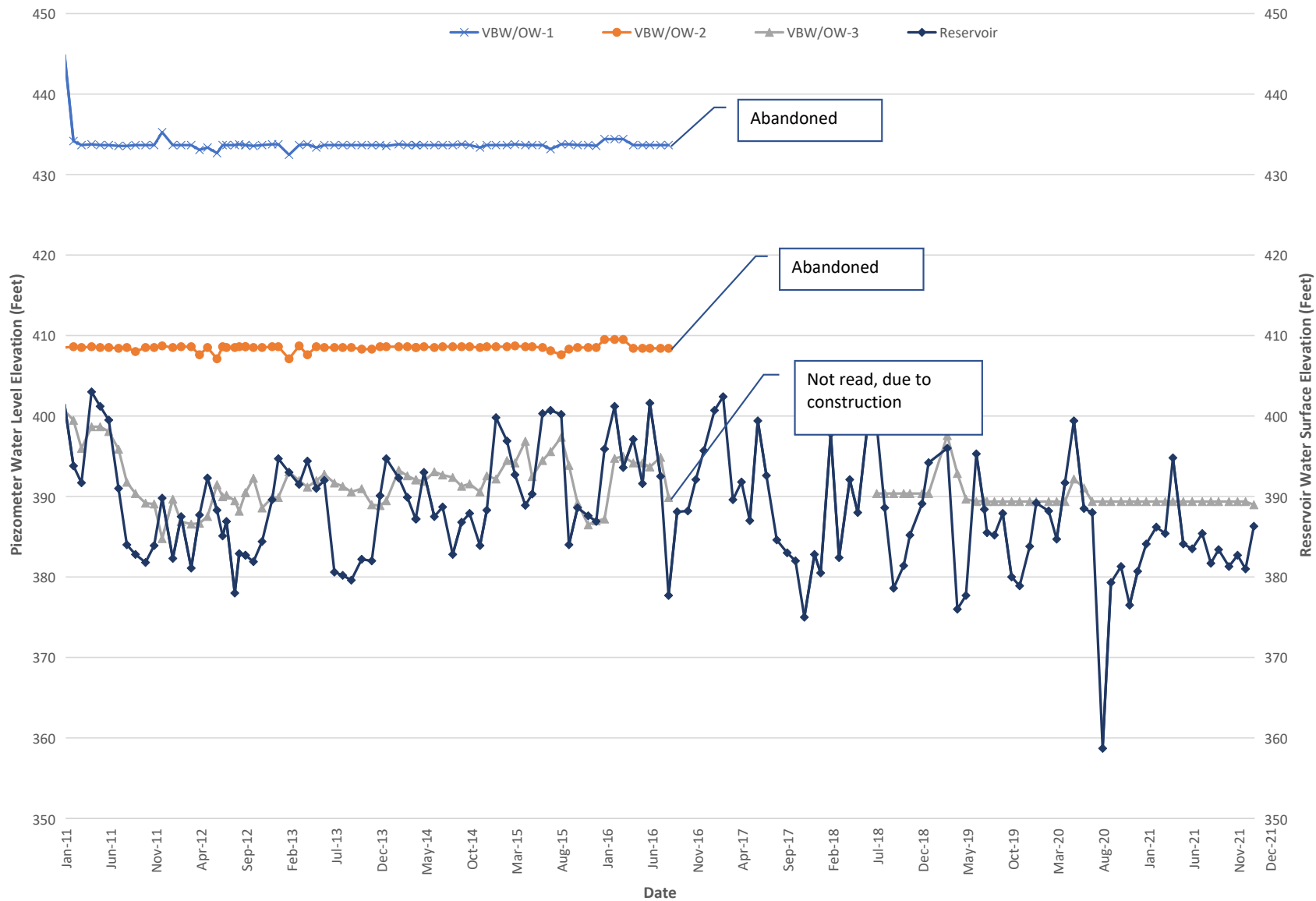


Figure 12
RATTLESNAKE CANYON DAM
HISTORICAL OPEN WELL PIEZOMETER AND RESERVOIR WATER SURFACE ELEVATIONS
OPEN WELL PIEZOMETERS P-52, P-61, P-62, P-63, AND P-65
JANUARY 2011 THROUGH DECEMBER 2021

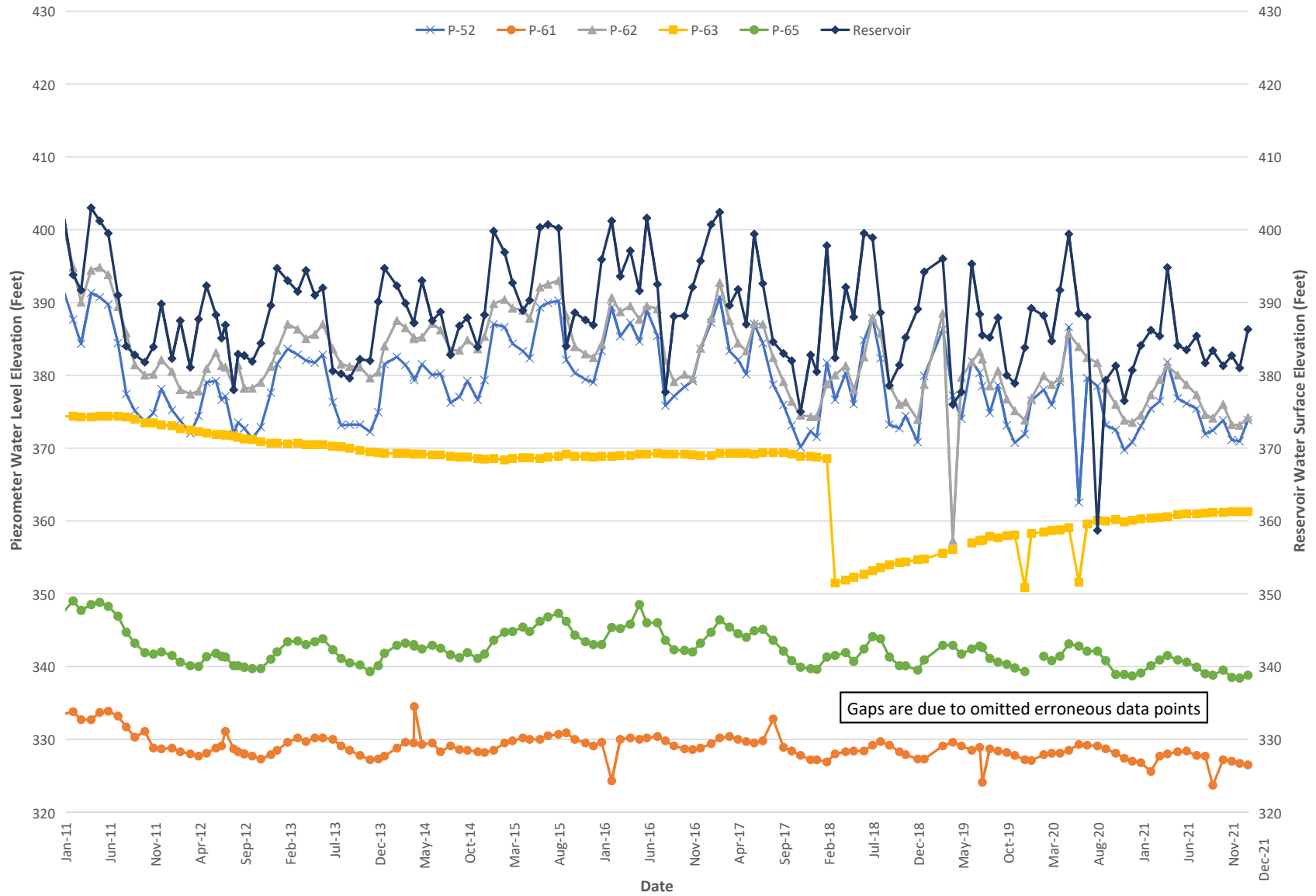


Figure 13
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-11, FP-1 NORTH, FP-1 SOUTH
JANUARY 2020 THROUGH DECEMBER 2021

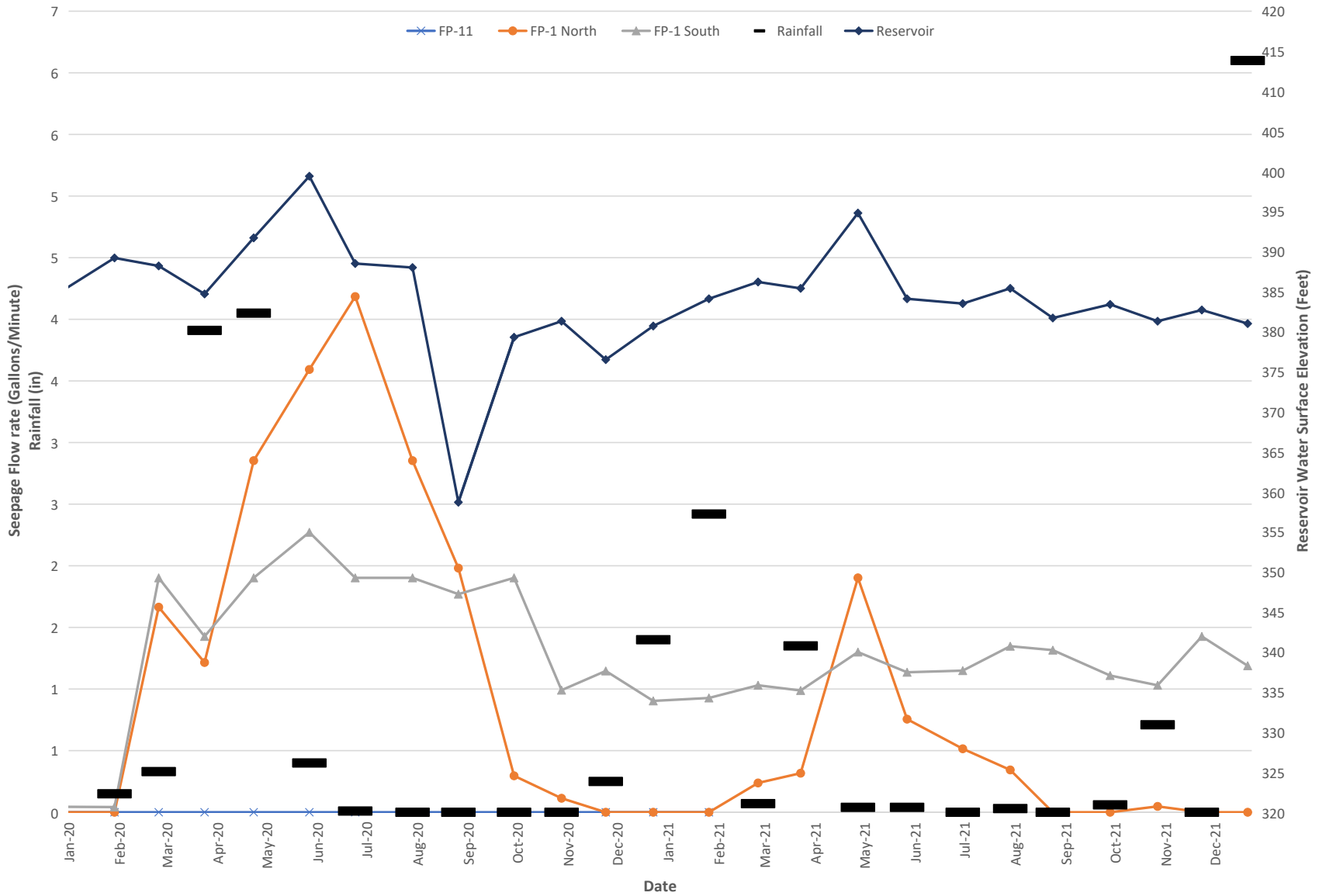


Figure 14
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-2, FP-3, FP-4
JANUARY 2020 THROUGH DECEMBER 2021

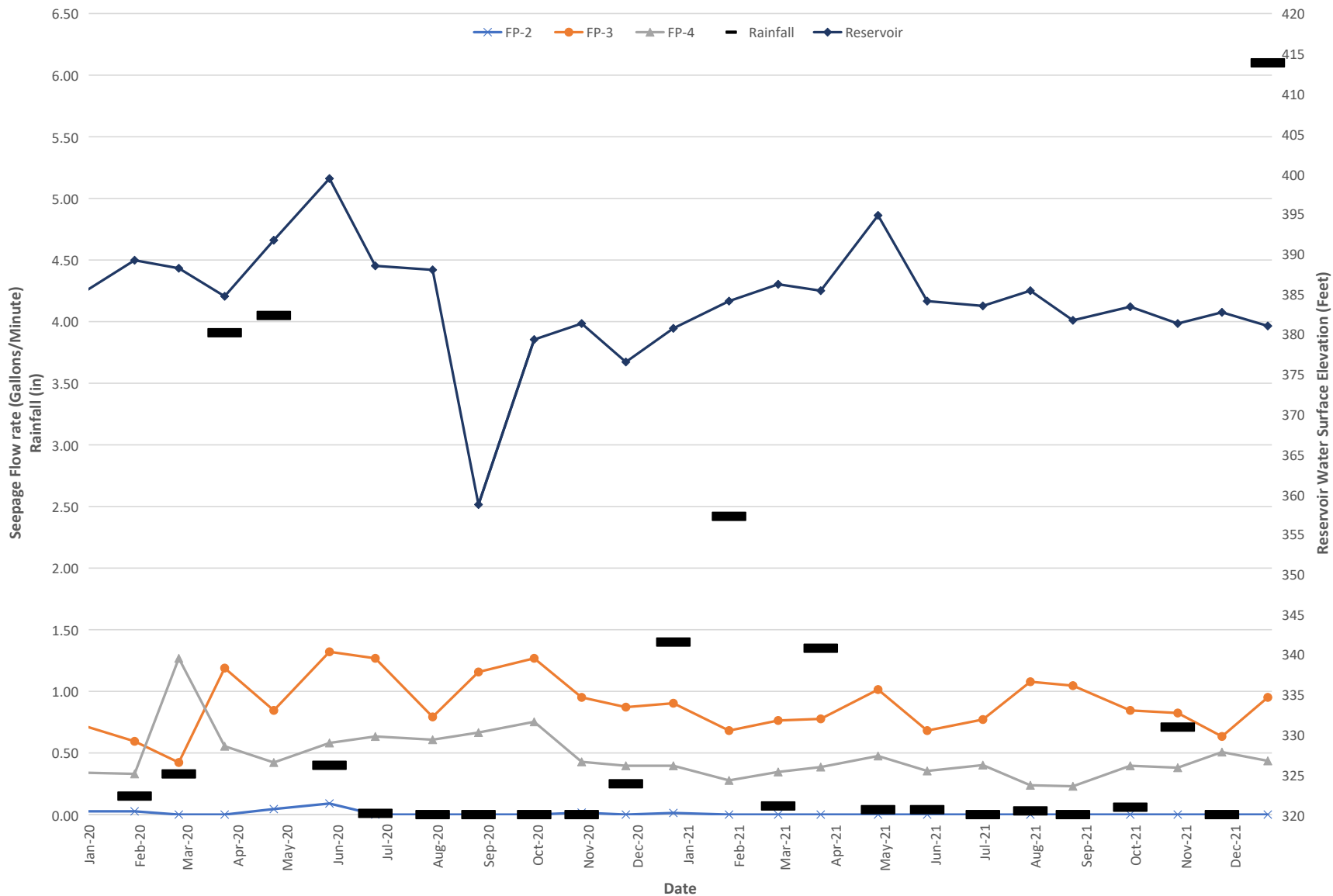


Figure 15
RATTLESNAKE CANYON DAM
2-YR SEEPAGE, RESERVOIR WATER SURFACE ELEVATIONS, AND RAINFALL
FLOW POINTS FP-5, FP-8
JANUARY 2020 THROUGH DECEMBER 2021

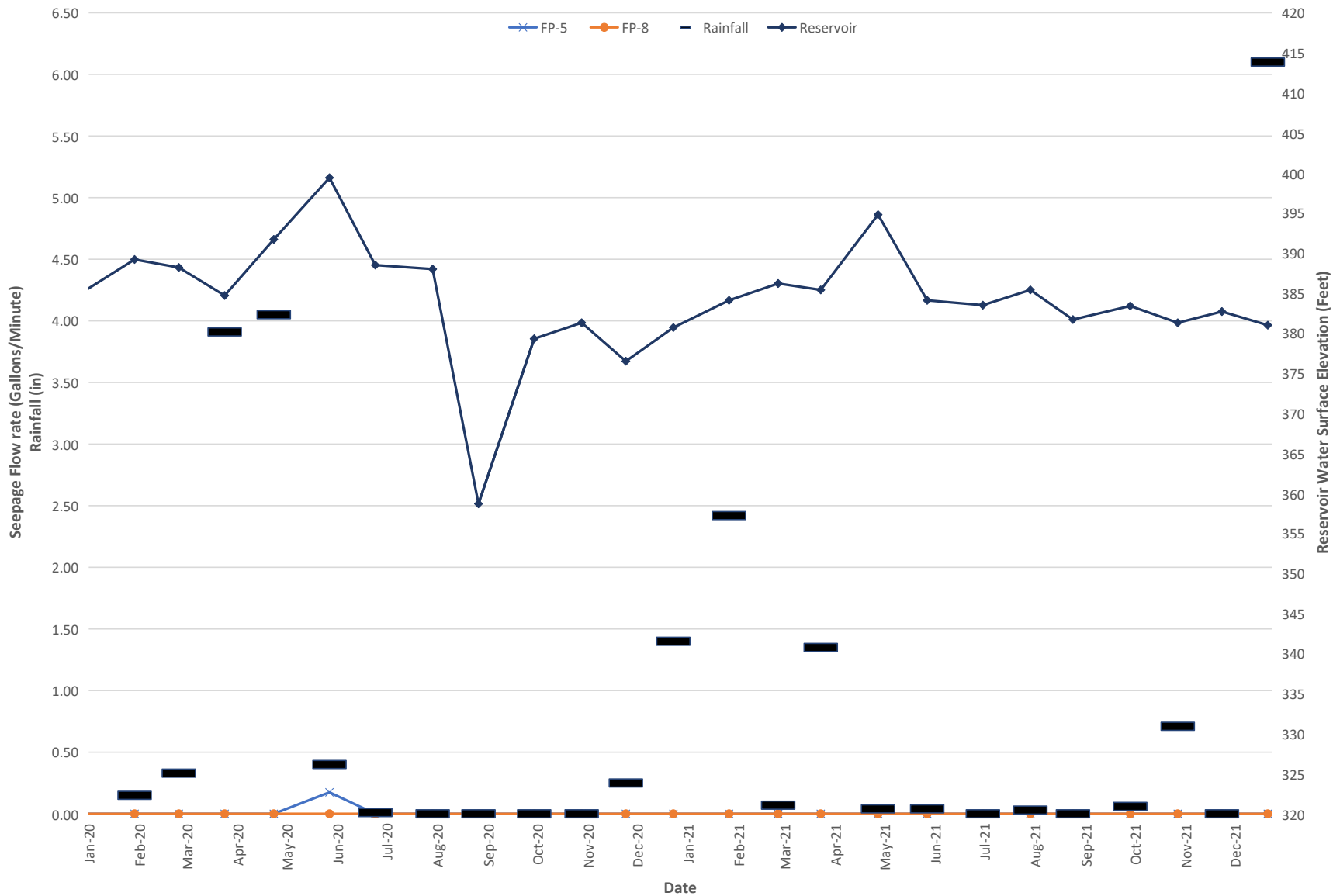


Figure 16
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-11, FP-1 NORTH, AND FP-1 SOUTH
JANUARY 2011 THROUGH DECEMBER 2021

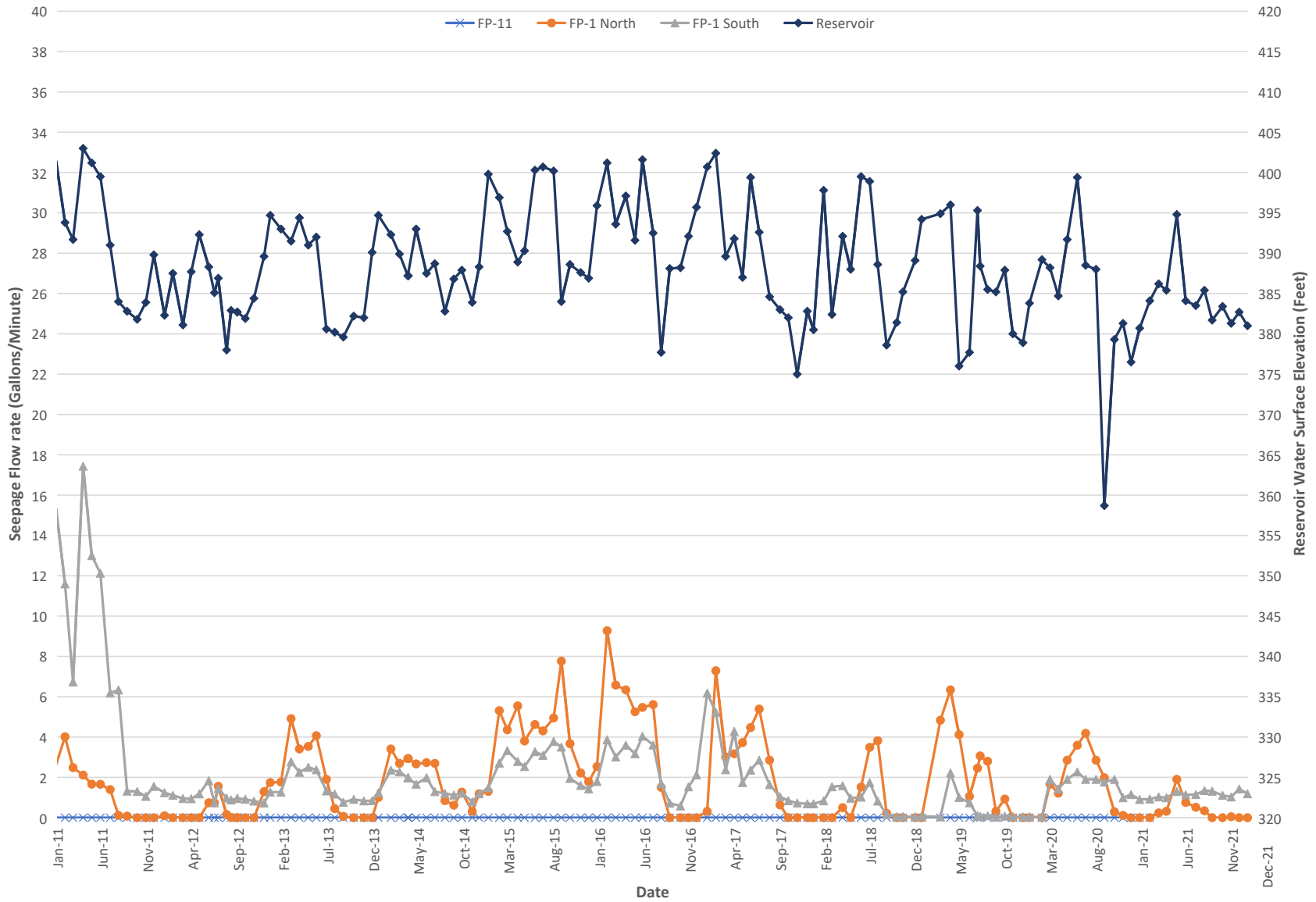


Figure 17
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-2, FP-3, AND FP-4
JANUARY 2011 THROUGH DECEMBER 2021

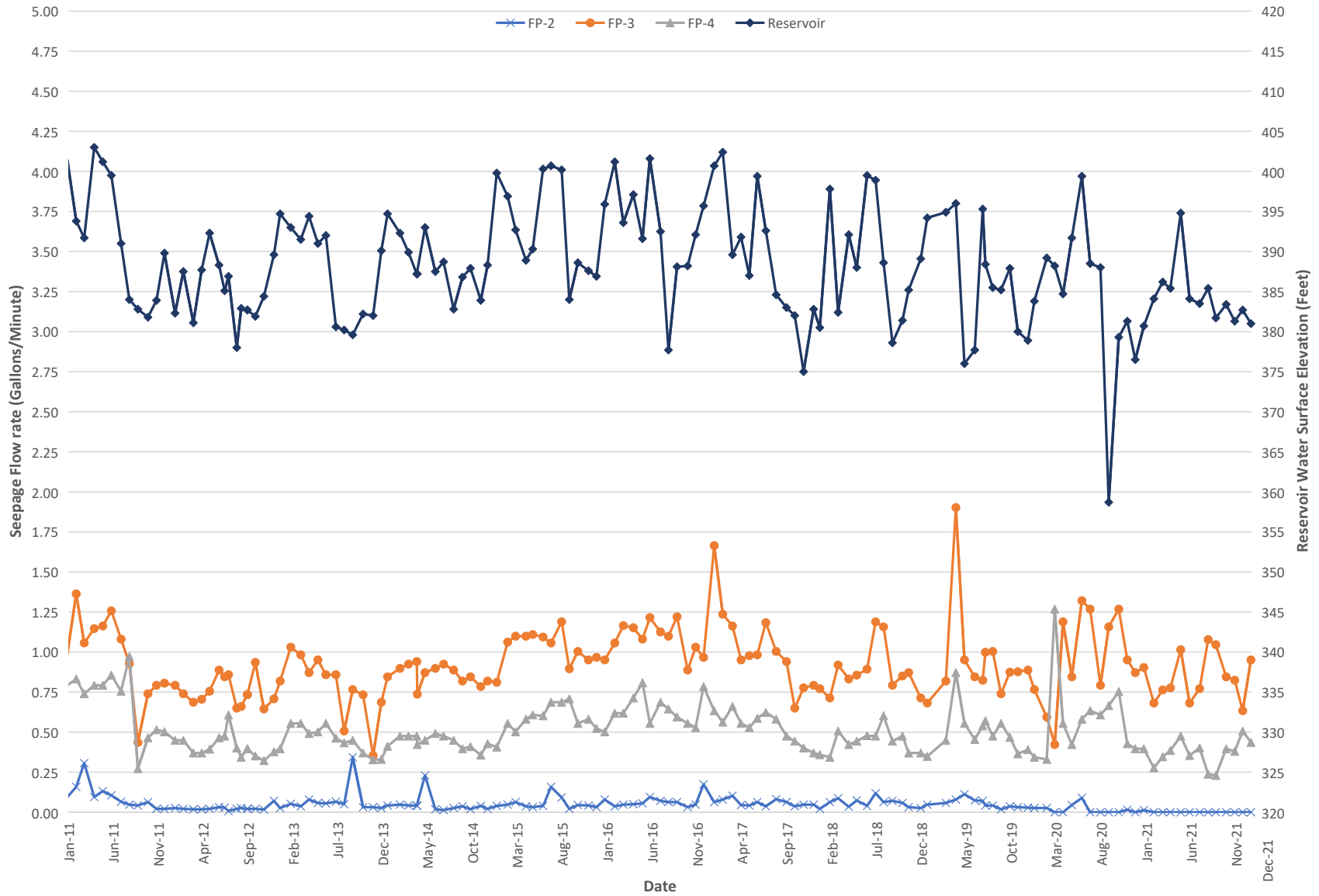


Figure 18
RATTLESNAKE CANYON DAM
HISTORICAL SEEPAGE AND RESERVOIR WATER SURFACE ELEVATIONS
FLOW POINTS FP-5, AND FP-8
JANUARY 2011 THROUGH DECEMBER 2021

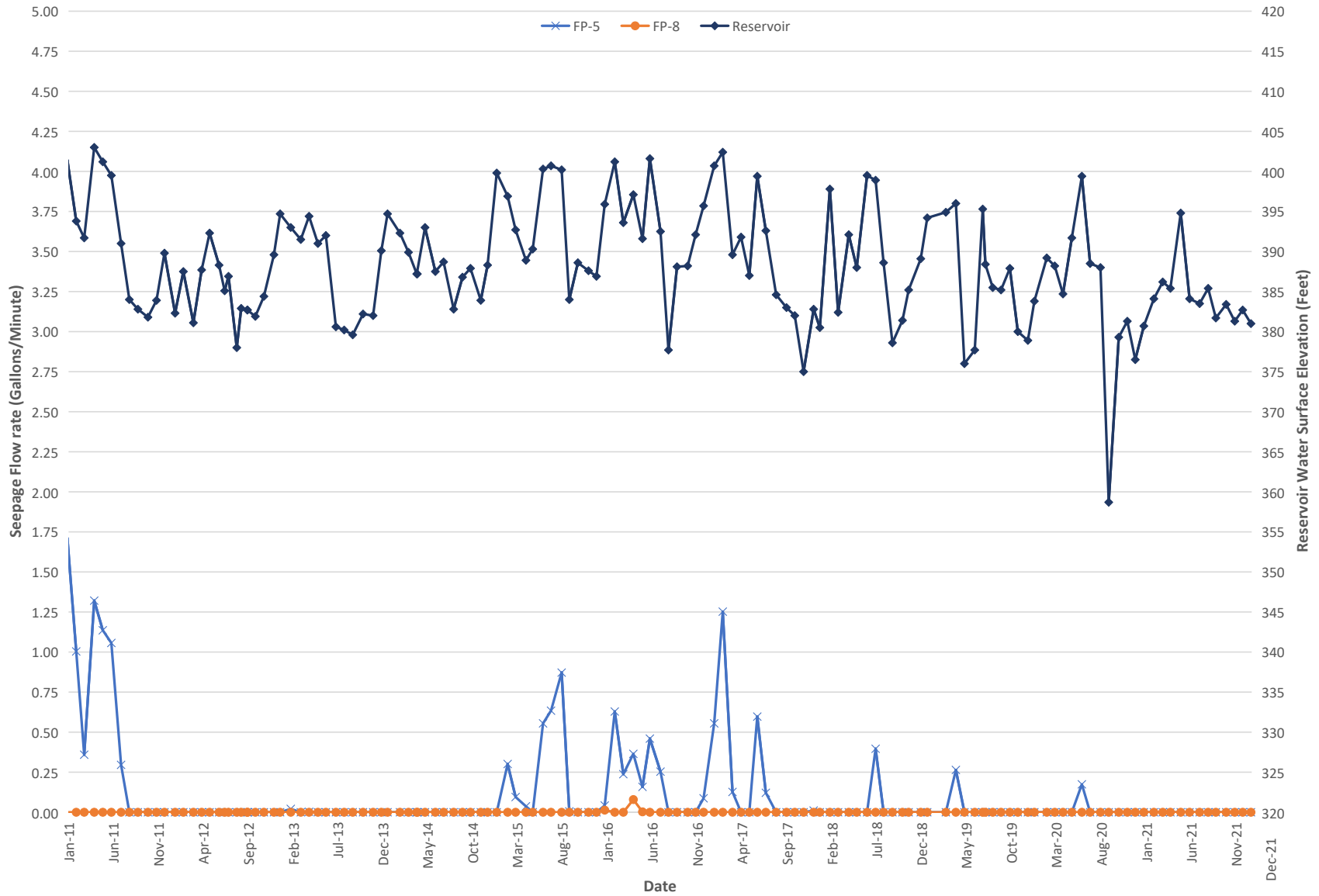


Figure 19
 RATTLESNAKE CANYON DAM
 HISTORICAL CUMULATIVE HORIZONTAL DISPLACEMENT
 SURVEY MONUMENTS A, B, B-1, C, D, E AND E-1
 1985 THROUGH 2022

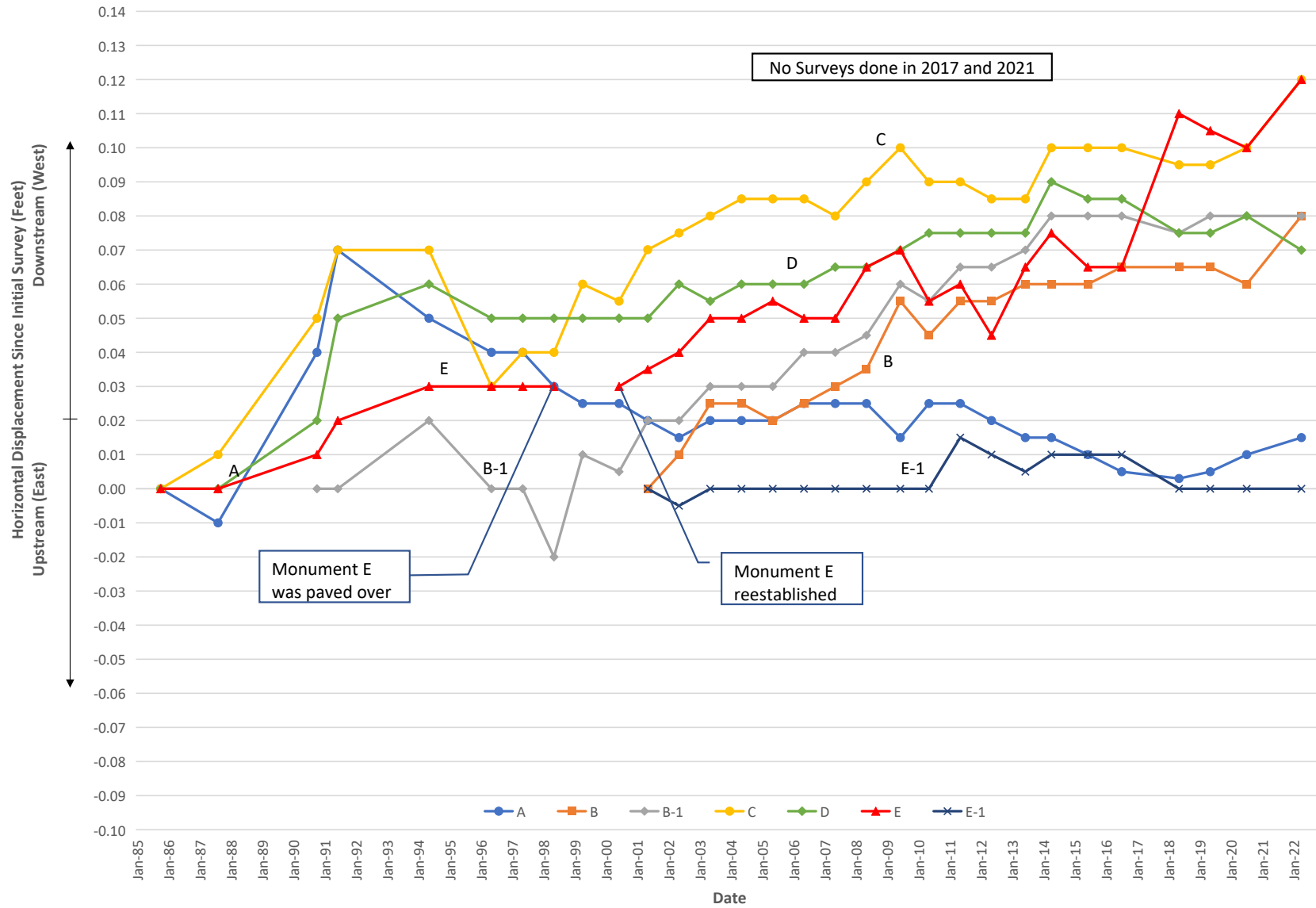
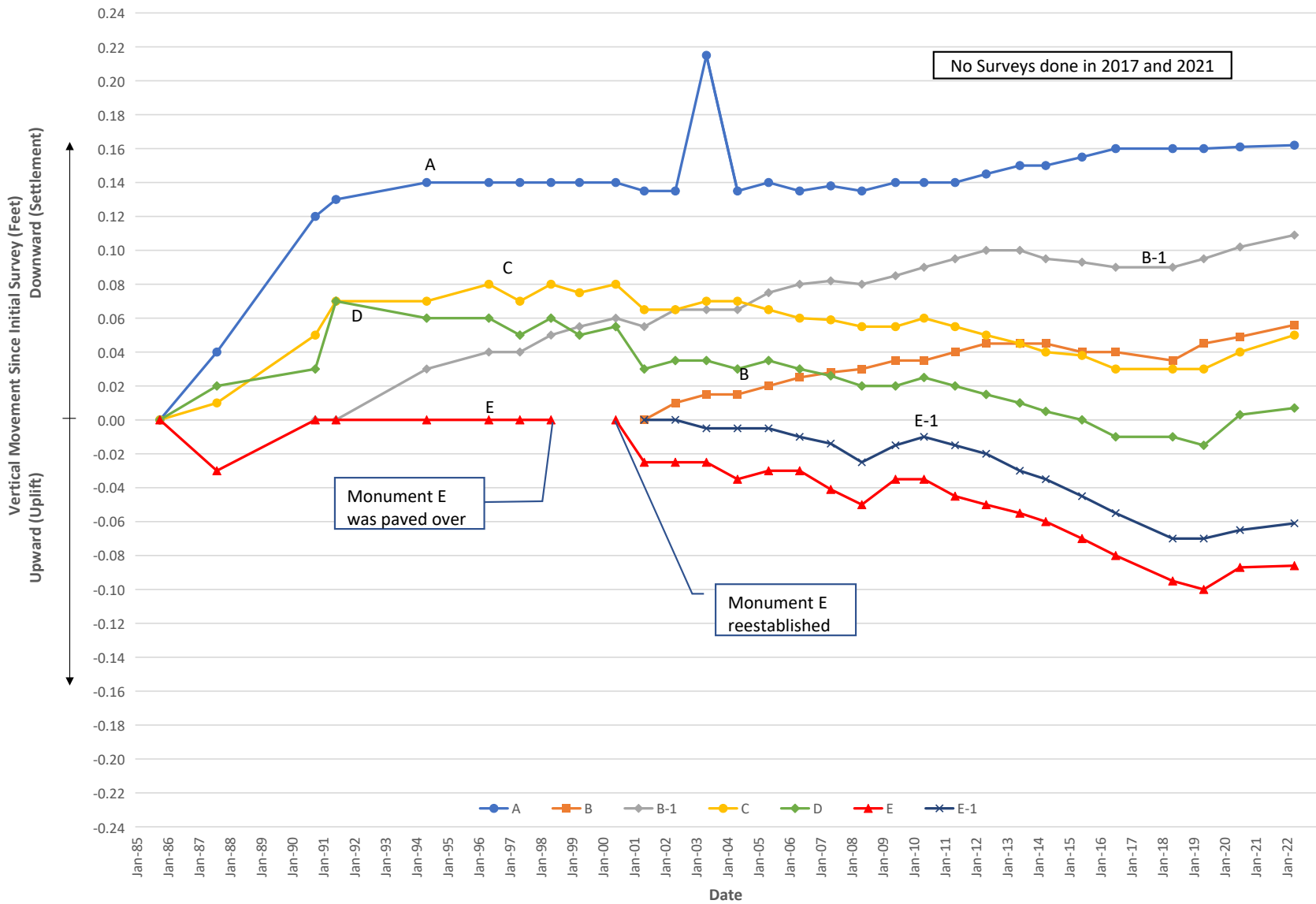


Figure 20
 RATTLESNAKE CANYON DAM
 HISTORICAL CUMULATIVE VERTICAL DISPLACEMENT
 SURVEY MONUMENTS A, B, B-1, C, D, E AND E-1
 1985 THROUGH 2022



Appendix

Inspection Photographs of

Rattlesnake Dam

April 19, 2022

Reservoir Dam Valve

Exercising Table

CNC Survey Report

Inspection Photographs of Rattlesnake Canyon Dam

April 19, 2022



Photo 1) Left end of AC-lined upstream face and the reservoir. Note the screened outlet intake and encroaching vegetation on groin area.



Photo 2) AC-lined crest and upstream face. Note cracks.



Photo 3) AC-paved crest with cracking and low grass cover on downstream face looking towards left abutment.

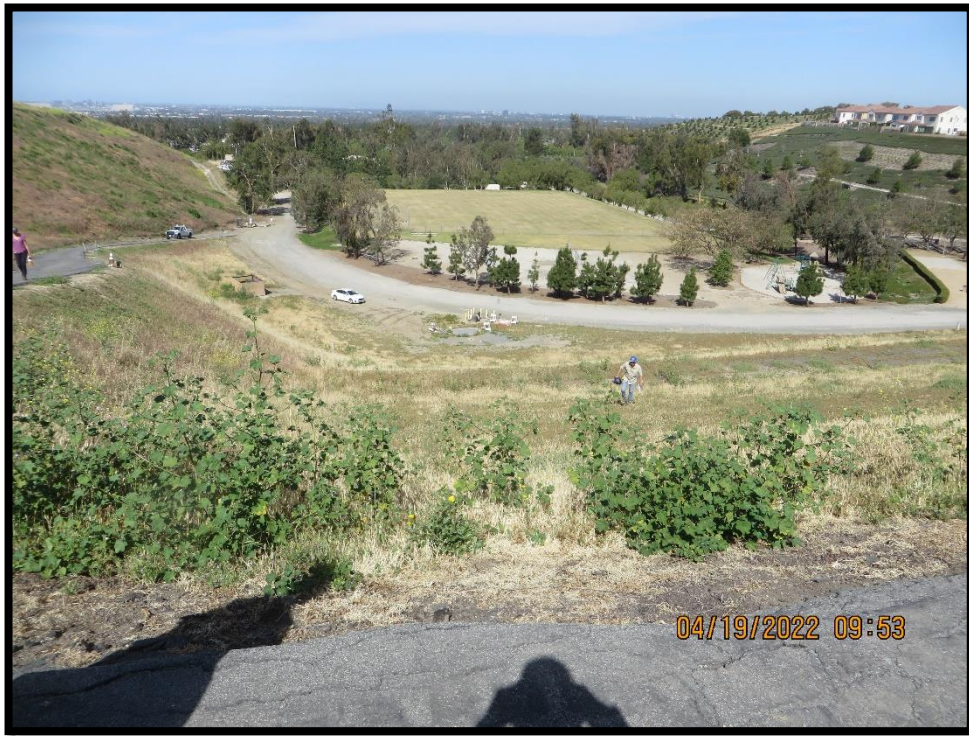


Photo 4) Downstream face and left groin abutment area, photo taken from crest.



Photo 5) Downstream bench looking towards right abutment.



Photo 6) Downstream face looking towards left abutment. Note rill erosion on access road.



Photo 7) Piezometer location along downstream face at bench looking towards left abutment.



Photo 8) Spillway control section and channel upstream.



Photo 9) Spillway channel looking downstream from end of dam crest. Note separation between AC pavement and spillway concrete liner joint.



Photo 10) Recent spillway channel repairs. Note vegetation growing at top of wall.



Photo 11) Spillway channel looking upstream. Note white areas that were recently repaired.



Photo 12) Spillway stilling basin looking downstream. Note minor vegetation.



Photo 13) 24-in-diameter butterfly blowoff valve looking downstream.



Photo 14) Seepage drain-pipe outfalls at the bottom of the seepage vault downstream of dam.

Reservoir Dam Valve Exercising Table

Reservoir Dam Valve Exercising

Rattlesnake Canyon Dam

Date	Top # of turns	Middle # of turns	Bottom # of turns	Main # of turns	Blow Off Valve# 2	Blow Off Valve# 1
5/7/2013	135	53	55	270	N/A	Not Turned
4/22/2014	135	53	55	270	N/A	Not Turned
4/20/2015 DSOD	135	53	55/10%	270	N/A	Exercised 100%
4/15/2016	135	53	55	270	N/A	Not Turned
6/12/2016	135	53	55	270	N/A	Exercised 100%
4/18/2017	135	53	55	270	N/A	Exercised 100%
5/2/2018 DSOD	135	53	55	270	N/A	Not Exercised
8/14/2018	135	53	55	270	Installed and exercised 100%	Exercised 100%
3/28/2019 DSOD	135	53	55	270	36	36
1/14/2020 DSOD	Not Turned	Not Turned	Not Turned	Not Turned	Not Turned	Not Turned
4/23/2020	135	53	55	270	36	36
4/27/2021	135	53	55	270	36	36

CNC Survey Report

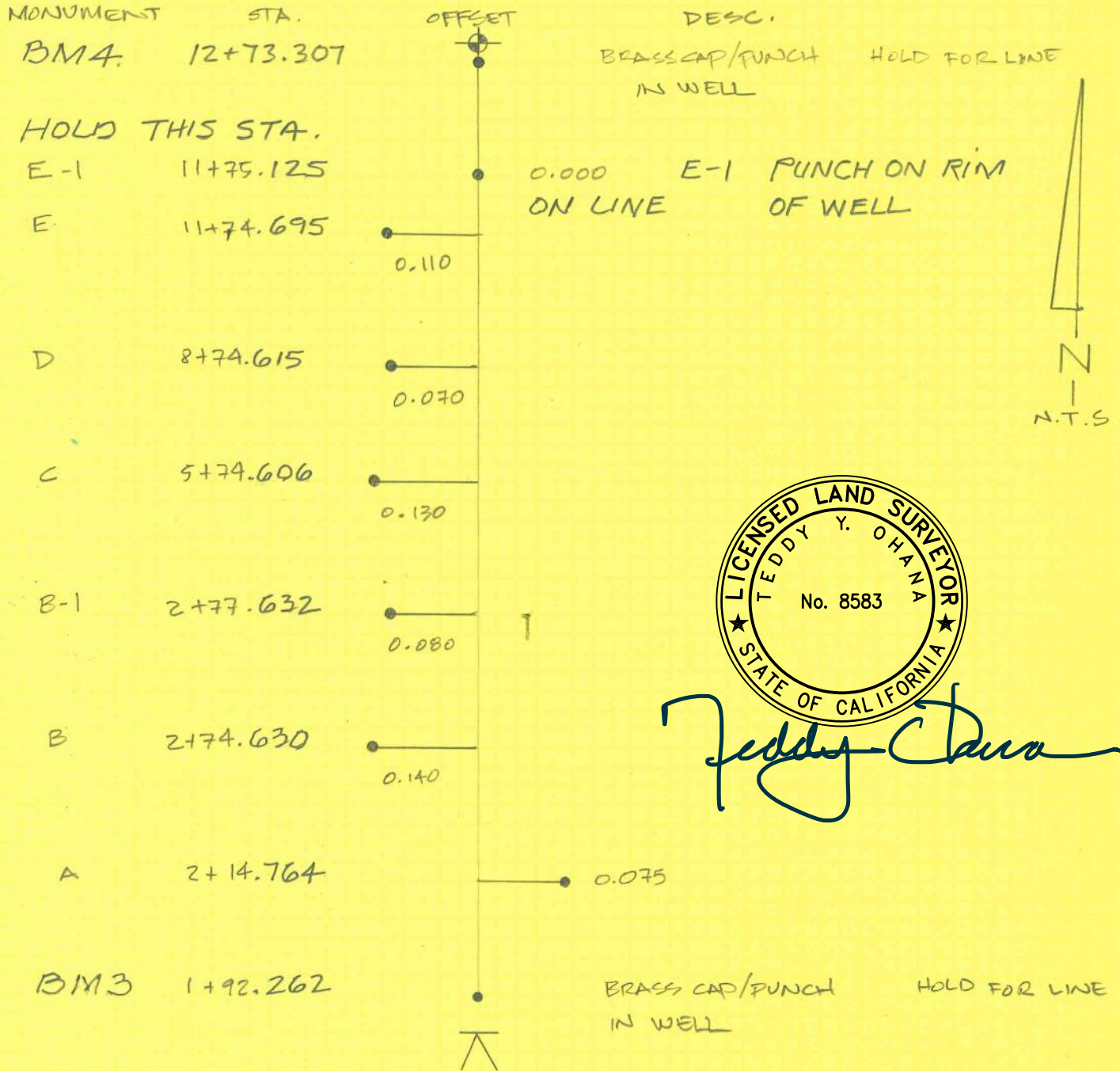
Prepared by:



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JOB NAME TRWD
RATTLENAKE RESERVOIR
JOB NO. 22-006 SRN _____
CREW A. MORENO
R. STEWART
DATE: 4-26-2022 SHEET 1 OF 2

HOLD FOR LINE



HOLD FOR LINE

- PT A REBAR/PUNCH IN HOLE
- PTS B-E REBAR/PUNCH IN WELL
- PT E-1 PUNCH ON WELL RIM



Date: 4/26/2022

 Sheet 2 of 2
SURVEY LEVELING NOTES
PROJECT: IRWD / Rattlesnake Reservoir – Level Report

STATION	B.S.	HI	F.S.	ELEVATION	SURVEY LEVELING NOTES
BM3				420.950	Brass CAP w/punch in well
	4.171	425.121			
A			5.963	419.158	Rebar w/punch in AC hole.
	4.500	423.658			
B			5.699	417.959	
	4.125	422.084			
B-1			4.213	417.871	
	5.411	423.282			
C			5.351	417.930	
	5.387	423.318			Rebar w/punch in Well Typical At pts B thru E
D			5.044	418.273	
	5.621	423.896			
E			5.743	418.151	
	5.673	423.826			
E-1			5.018	418.806	Punch on Rim of Well
	4.956	423.764			
D			5.488	418.273	
	4.971	423.247			
C			5.314	417.930	
	5.333	423.265			
B-1			5.391	417.871	
	4.373	422.248			
B			4.285	417.959	
	5.693	423.656			
A			4.494	419.158	
	5.856	425.018			
BM3			4.065	420.950	Brass CAP w/punch in well
					ALL ELEVATIONS ARE ADJUSTED