V817 Aquifer Test

Testing Plan

Rose Valley, CA

June 5, 2024

The City of Los Angeles Department of Water and Power (LADWP) plans to conduct an aquifer test of the existing Well V817 in Rose Valley as part of the Rose Valley water storage and recovery project feasibility evaluation.

Purpose

The planned aquifer testing of well V817 is necessary to evaluate the site's hydrogeology, including aquifer characteristics (vertical and horizontal hydraulic conductivity, storage coefficient, and transmissivity), pumping capacity, the effect of pumping on groundwater levels in nearby monitoring wells, and the potential location of any fault splays in the area. These hydrogeologic factors will help determine whether Rose Valley is a suitable location for a water storage and recovery project.

Background

Well V817 is an existing well that LADWP acquired as part of the purchase of a 162-acre property (**Figure 1**) in northern Rose Valley, adjacent to the Los Angeles Aqueduct (LAA). This property is an abandoned farmland that includes two production wells, V817 and V816. Well V817 was drilled in 1981 and was used to supply water to the farm. A copy of the driller's report is attached. Well V816 has a damaged casing and is used as a monitoring well. The expected pumping capacity of Well V817 is approximately 1.5 to 1.7 cfs. The pumping capacity will be verified during the planned aquifer testing.

In 2015, LADWP installed a pipeline connecting Well V817 to the LAA but didn't conduct a long-term pumping test. The groundwater levels in the nearby monitoring wells range between 80 and 230 feet below the ground surface (ft-bgs.) **Table 1** below lists the groundwater level in Well V817 and the nearby monitoring wells as of April 2024. **Figure 2** presents a hydrograph of groundwater levels in the wells since January 2010. The map in **Figure 1** shows the locations of Well V817 and nearby monitoring wells to be measured during the aquifer testing.

DRAFT

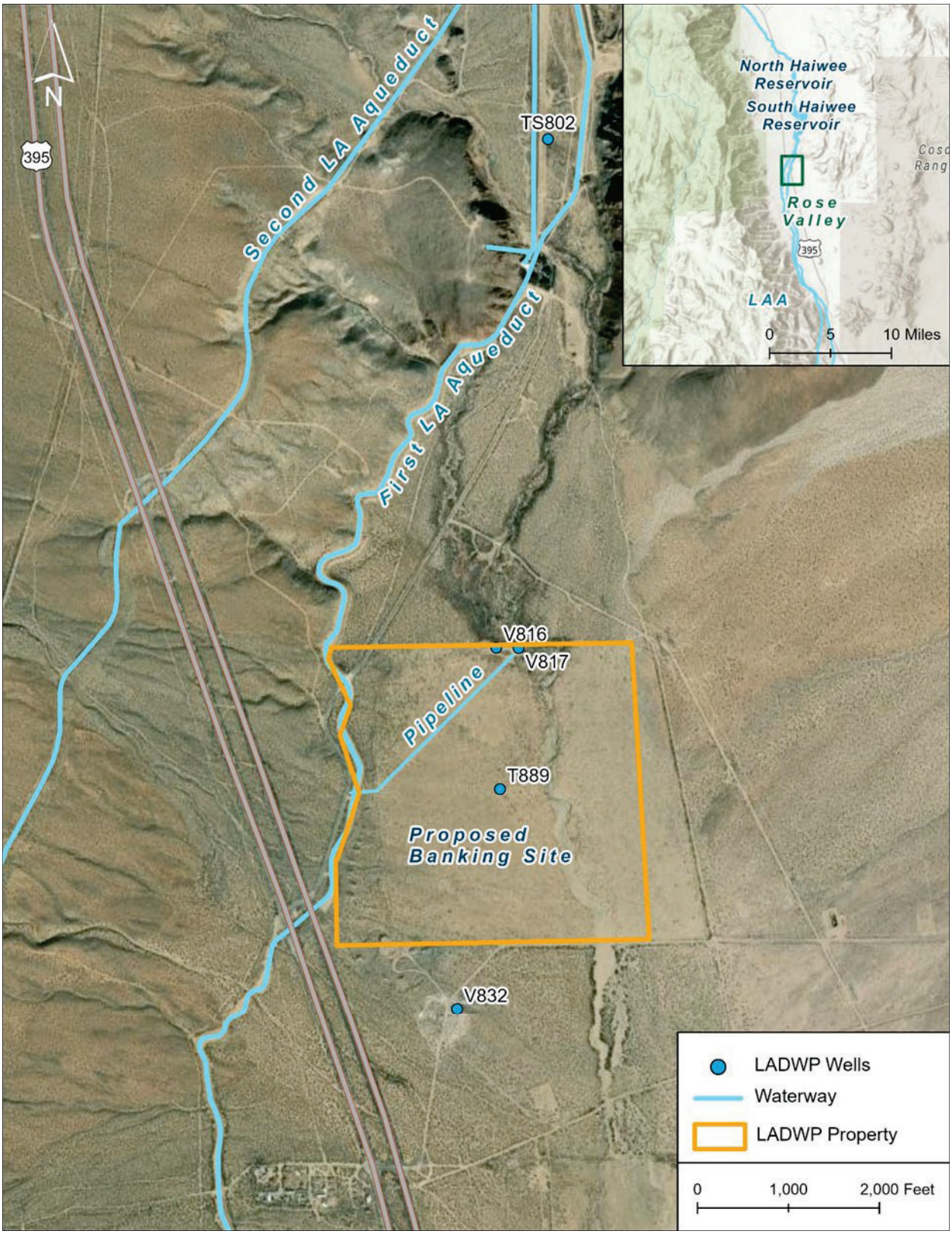


Figure 1. Location of Well V817 and nearby monitoring wells in Rose Valley

Table 1. Northern Rose Valley Well Information in April 2024

Well Number (depth in feet)	Depth to groundwater (ft-bgs)
V816 (200+)	70.5
V817 (464)	72.9
T889 (340)	134.3
V832 (230)*	210.0

* Current depth

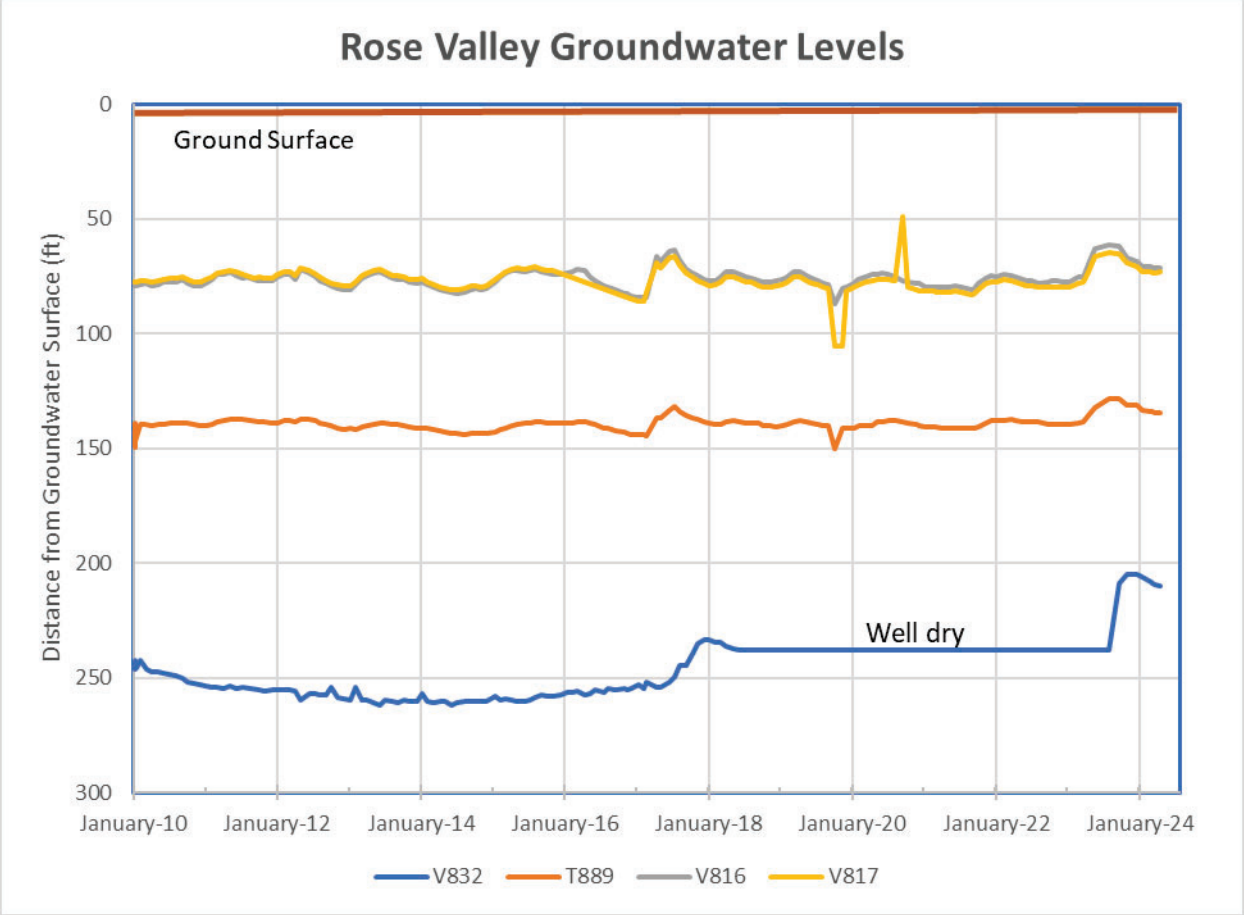


Figure 2. Historic groundwater levels in V817 and nearby monitoring wells

In extreme runoff years, such as 2017 and 2023, LADWP releases water from the LAA to Rose Valley as needed. LADWP released approximately 4,000 acre-feet in 2017 and 9,000 acre-feet to Rose Valley in 2023. The releases in 2023, which occurred between April and September, resulted in groundwater rises of up to 15 feet in the aquifer in the northern part of the basin.

Aquifer Testing

The aquifer testing of production Well V817 includes operating the pump at capacity for approximately 7 days. Testing is estimated to withdraw less than 30 acre-feet of water, and groundwater levels are estimated to recover fully within a few weeks. Groundwater levels will be measured manually and automatically using pressure transducers in the pumping wells and in nearby monitoring wells, V816, T889, and V832, before, during, and after the completion of the pumping phase of the test, starting at a minimum of one week before the start of the test. The pumping rate and total pumping volume will be measured using a flow meter and totalizer. The goal is to measure a clear response of groundwater levels in the nearby monitoring wells. At the end of the pumping phase, groundwater levels will continue to be measured in the pumping and monitoring wells until groundwater levels have recovered.

The analysis of the collected data will include the preparation of hydrographs showing the water level in each monitoring well during the test. A comparison of groundwater response to pumping may indicate the potential location of the fault splays in the area. The collected data will also be used with pumping test data analysis software AQTESOLV to estimate aquifer characteristics including the storage coefficient, vertical and horizontal hydraulic conductivity, and transmissivity of the aquifer. Also, data will be used to estimate the well efficiency and potential need to replace Well V817 with a well that utilizes current well installation methods, including the use of prefabricated well casing and screen and placing engineered gravel envelopes.

California Environmental Quality Act Compliance

With groundwater levels in northern Rose Valley deeper than 80 feet and far below the root zone of any vegetation, no impact on vegetation or any other groundwater-dependent resources are expected from the aquifer testing of Well V817. Rose Spring, located at the mountain-front, northwest of Rose Valley, flows only during the extreme runoff years. Any seep from this spring is used by the on-site vegetation. The spring is located over 200 feet above the groundwater aquifer and is clearly separated from the aquifer system. Any groundwater-related activity in Rose Valley will have no effect on the spring flow.

There is an existing road on LADWP-owned property from Highway 395 to Well V817, therefore site access is already established.

As the planned aquifer testing of Well V817 is for data gathering, LADWP has filed a Class 6 notice of exemption for the test with the Inyo County Clerk. If LADWP evaluation shows that this property is a feasible location for water storage and recovery, it will prepare appropriate California Environmental Quality Act documentation for that project.

Long-Term Water Agreement (LTWA)

Well V817 was already in existence when LADWP purchased the property 40 years ago, and LADWP will not modify the well as part of the planned aquifer testing. Therefore, it does not qualify as a “new well” under the LTWA or Green Book.

If the site investigation, including aquifer testing of Well V817, indicates that the site is suitable for a water storage and recovery project, LADWP will submit a project plan and scope to the Technical Group, which will comply with applicable provisions of the LTWA and Green Book.

Coso Geothermal Activity

LADWP entered into an agreement with Coso Geothermal in 2009 to avoid impacting its activities and Conditional Use Permit with Inyo County. The agreement references LADWP’s potential plan to store and recover water in Rose Valley. If the water storage and recovery project proceeds, LADWP will ensure that it meets the terms of the agreement.

Well V817 in Rose Valley Driller's Report

Jan-05-10 12:22pm From-WATER RESOURCES SD 8185434604 T-450 P.07/07 F-567

ORIGINAL
File with DWR

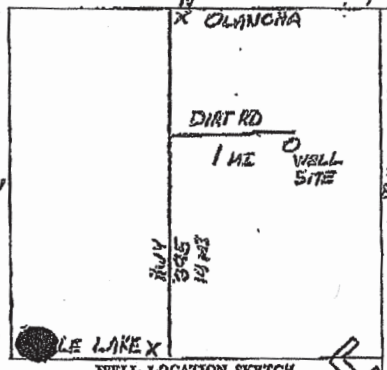
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 23682 V817

Notice of Intent No. 159679
Local Permit No. or Date
DWR State Well No.
Other Well No.

(1) OWNER: Name Phil Hennis
Address P.O. Box 81
City Olancha, CA. Zip 93549

(2) LOCATION OF WELL (See instructions):
County Inyo Owner's Well Number
Well address if different from above Rose Valley Ranch Co.
Township 21 S Range 37 E Section 23
Distance from cities, roads, railroads, fences, etc. 14 mi. north of Little Lake, CA. 1 mi. east of Hwy 395



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [X]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [X]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8
Diameter of bore 28 in.
Placed from 0 ft. to 482 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS: Shutter Screen
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	290	16	1/4			
		16	1/4	290	464	3/32
464	482	16	1/4			

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 45 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Neat cement

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 136 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? Layne-Western
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 125 ft. At end of test ft.
Discharge 1500 gal/min after 3 hours Water temperature 64° F
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Electric log made? Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 535 ft. Depth of completed well 482 ft.

from ft.	to ft.	Formation (Describe by color, character, size of material)
0	10	Top Soil & Boulders
10	44	Gravel & Boulders
44	73	Gravel & Boulders
73	76	Fine Sand w/some clay
76	78	Small boulders, gravel & sand
78	80	Boulders
80	82	Rock & Gravel
82	90	Boulders
90	100	Rock & Gravel
100	118	Rock & Gravel
118	125	Fine sand & gravel
125	137	Rock & Gravel
137	141	Sand & Gravel w/some clay
141	148	Sand & Gravel
148	170	Boulders, sand & gravel
170	228	Small boulders, gravel & sand
228	235	Rock & gravel
235	246	Rock w/some gravel
246	297	Gravel, sand & some clay
297	306	Rocky, gravel & sand
306	318	Gravel & sand w/small boulders
318	348	Boulders & Brown sandy clay
348	352	Gravel & sand
352	388	Small boulders, gravel & sand
388	405	Fine Sand
405	407	Brown & Blue Clay
407	415	Gray clay
415	428	Small boulders, gravel & fine sand
428	470	Coursé sand & gravel
470	510	gray clay
510	520	Sandy blue-gray clay
520	530	Blue clay
530	535	Gray clay

Work started 9-1 19 81 Completed 9-20 1981

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME LAYNE-WESTERN COMPANY, INC. (Person, firm, or corporation) (Typed or printed)
Address 1600 East California Ave.
City Bakersfield, CA. Zip 93307
License No. 407409 Date of this report 9-28-81

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SUBMITTED ELECTRONICALLY
NOT FOR OFFICIAL USE