

Kara



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Ground Water Review Form:

- Water Right Transfer (checked)
Permit Amendment
GR Modification
Other

Application: T-11147

Applicant Name: Sunrise Water Authority

- Proposed Changes: POA (checked), USE, APOA, POU, SW -> GW, OTHER, RA (checked)

Reviewer(s): Josh Hackett

Date of Review: December 14, 2010

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

- Three checkboxes for reasons: water well reports, application details, and other.

1. Basic description of the changes proposed in this transfer: This application proposes a change in POA to certificate 43436. CLAC 4579 (Sunrise Water Authority Well 1E) is the authorized well on the certificate. The proposed new POA is CLAC 4683 (Sunrise Water Authority Well 6). Both the authorized and the proposed POAs are located within the Damascus Groundwater Limited Area. The proposed POA is located approximately 1 mile southeast of the authorized POA (Figure 1).

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
Yes No (checked) Comments:

Information from the original driller's well report for the authorized POA (CLAC 4579) indicates the well was drilled in 1963 and is open to both the alluvial aquifer and the Columbia River Basalt Group (CRBG) aquifer system. The well is 1066 feet deep with casing originally extending to 834 feet below land surface (bls). The alluvial aquifer is found in the well above a depth of 833 feet; the CRBG aquifer system is found below a depth of 833 feet. Casing in the well is perforated in the alluvial aquifer from 300 to 305 feet bls. The well was originally uncased below a depth of 834 feet and open to multiple water-bearing zones in the CRBG aquifer system. An alteration log for the well (CLAC 4582) indicates perforated casing was installed from 826 feet bls to 1066 feet bls in 1974. A plastic liner was installed from 1 foot above land surface to a depth of 826 feet in 1991 (CLAC 2944). The well was abandoned in 2010 (CLAC 66731).

The proposed new POA (CLAC 4683) was drilled in 1976 and is open to multiple water-bearing zones in the CRBG aquifer system. The well is 720 feet deep with casing extending to 654 feet bls. Casing in the well is perforated from 594 to 654 feet bls.

Static water level data suggest the wells do not develop the same aquifer; however, well construction issues complicate aquifer determinations. Hydraulic head data in the form of static water level measurements are commonly used to make aquifer determinations. Wells with similar static water levels are generally presumed to produce from the same aquifer. CLAC 4579 commingles the alluvial aquifer and the CRBG aquifer system, as such, the static water level elevation in CLAC 4579 (357 feet above mean sea level) is a composite head of both aquifers. Static water level elevations in nearby wells completed only in the alluvial aquifer range from approximately 240 feet to 420 feet above mean sea level (msl) (Figure 2), while static water level elevations in nearby basalt wells range from 70 to 120 feet above msl (Figure 3). The high static water level elevation in CLAC 4579 suggests that although the well is open to both the alluvial and basalt aquifers, it probably obtains most of its production from the alluvial aquifer.

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
 Yes No Comments: The authorized POA produces from the alluvial aquifer and the Columbia River Basalt Group aquifer system.

b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): The hydraulic head in the authorized POA (CLAC 4579) is likely controlled by aquifer pressure in the alluvial aquifer, suggesting most of the production is from the alluvial aquifer. Estimating the portion of the water right supplied by each source comes with some uncertainty, however, considering the data presented above, a reasonable estimate for the portion of the right supplied by each source is 75% from the alluvial aquifer and 25% from the basalt aquifer system. If this transfer is approved, production should be limited to 25% of the maximum rate allowed on certificate 43436.

4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?
 Yes No Comments: Most of the interference from the authorized POA (CLAC 4579) occurs with alluvial wells. The proposed POA (CLAC 4683) will introduce a new interference to wells completed in the CRBG aquifer system.

b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?
 Yes No If yes, explain: _____

5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?
 Yes No Comments: Water-producing zones in the proposed POA (CLAC 4683) are below the elevation of nearby creeks and streams.

b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?

Stream: _____ Minimal Significant

Stream: _____ Minimal Significant

Provide context for minimal/significant impact: _____

6. What conditions or other changes in the application are necessary to address any potential issues identified above: _____

7. Any additional comments: _____

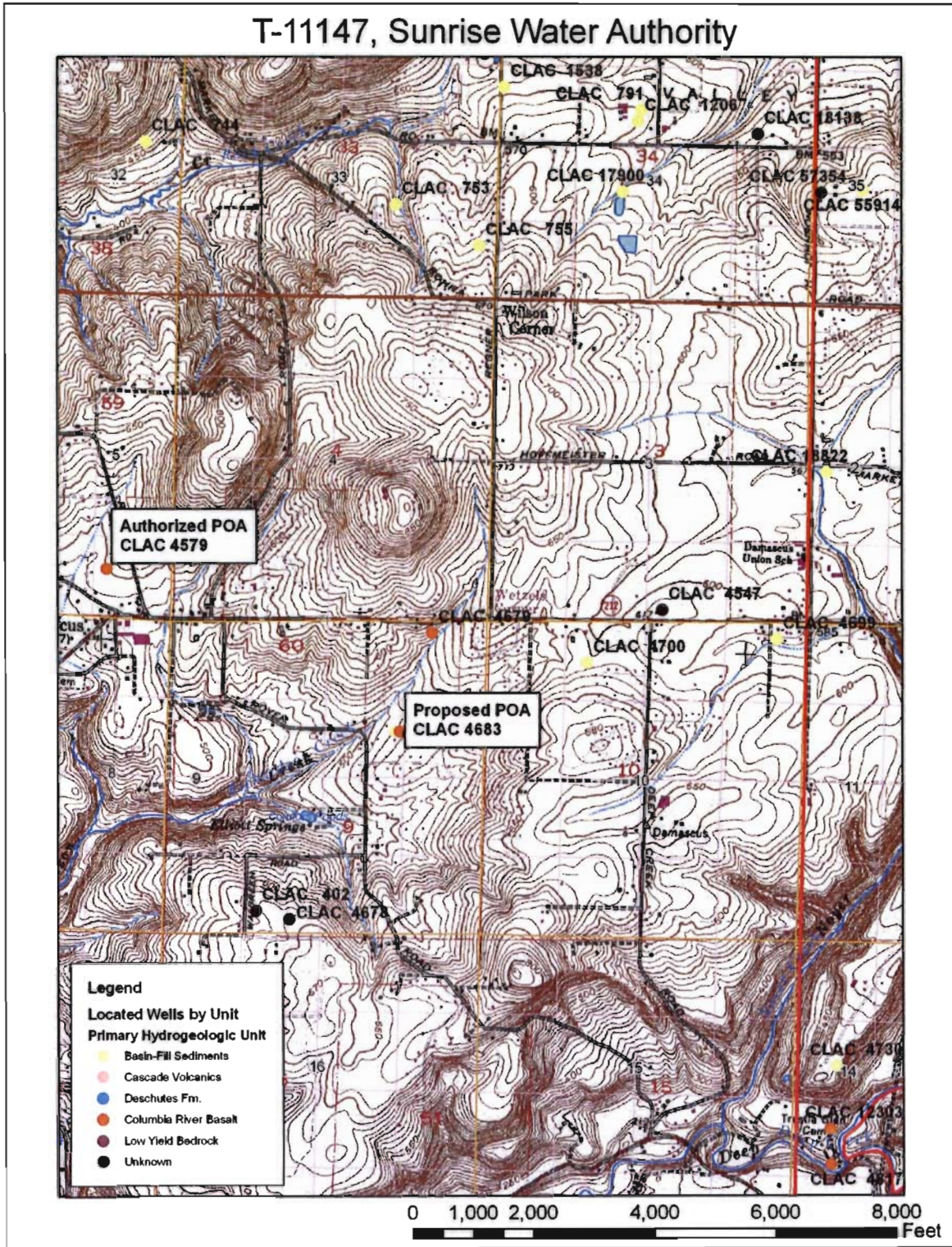


Figure 1. Well Location Map

T-11147, WATER LEVELS IN NEARBY ALLUVIAL WELLS

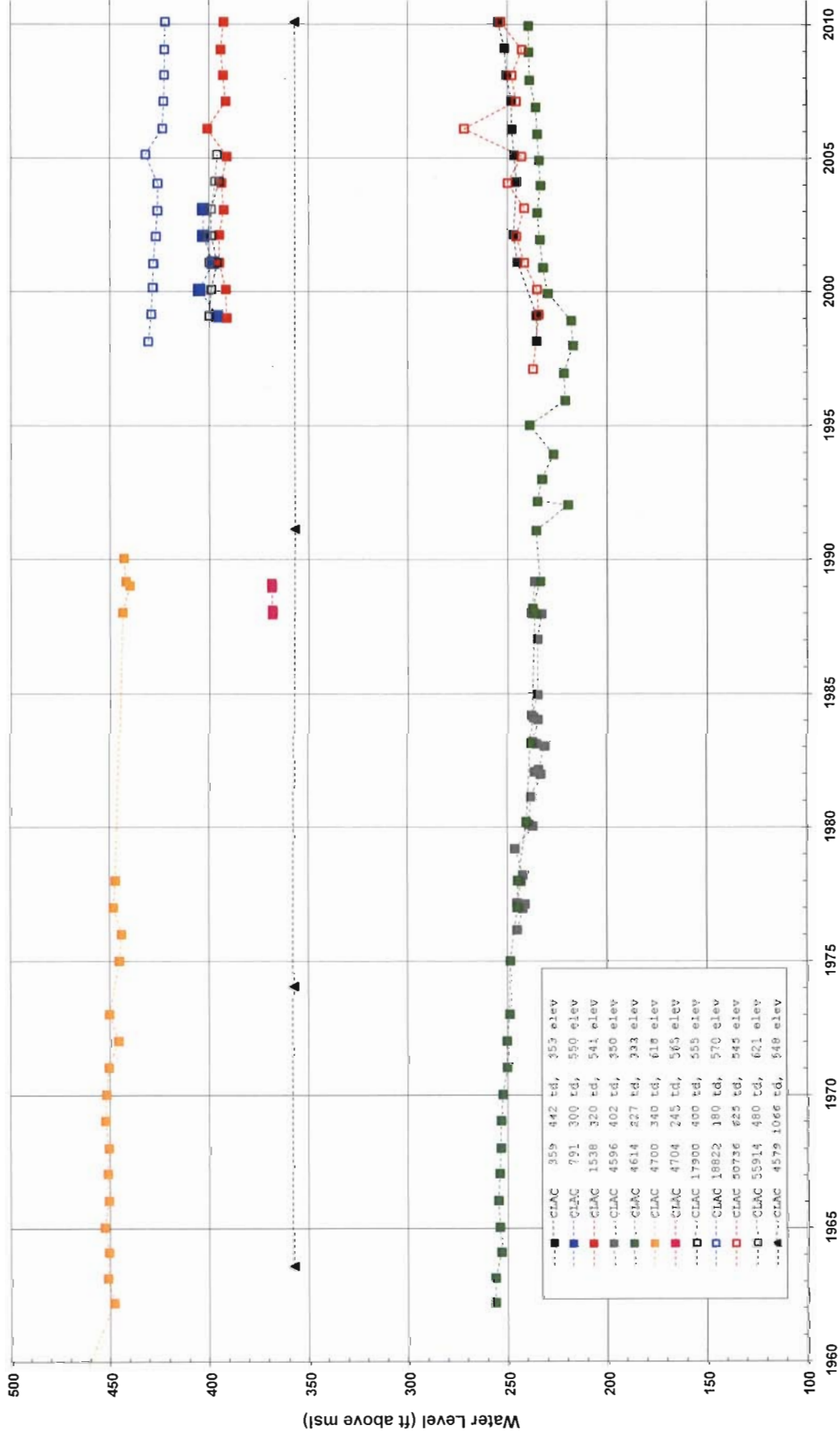


Figure 2. Static water level elevations in nearby alluvial wells.

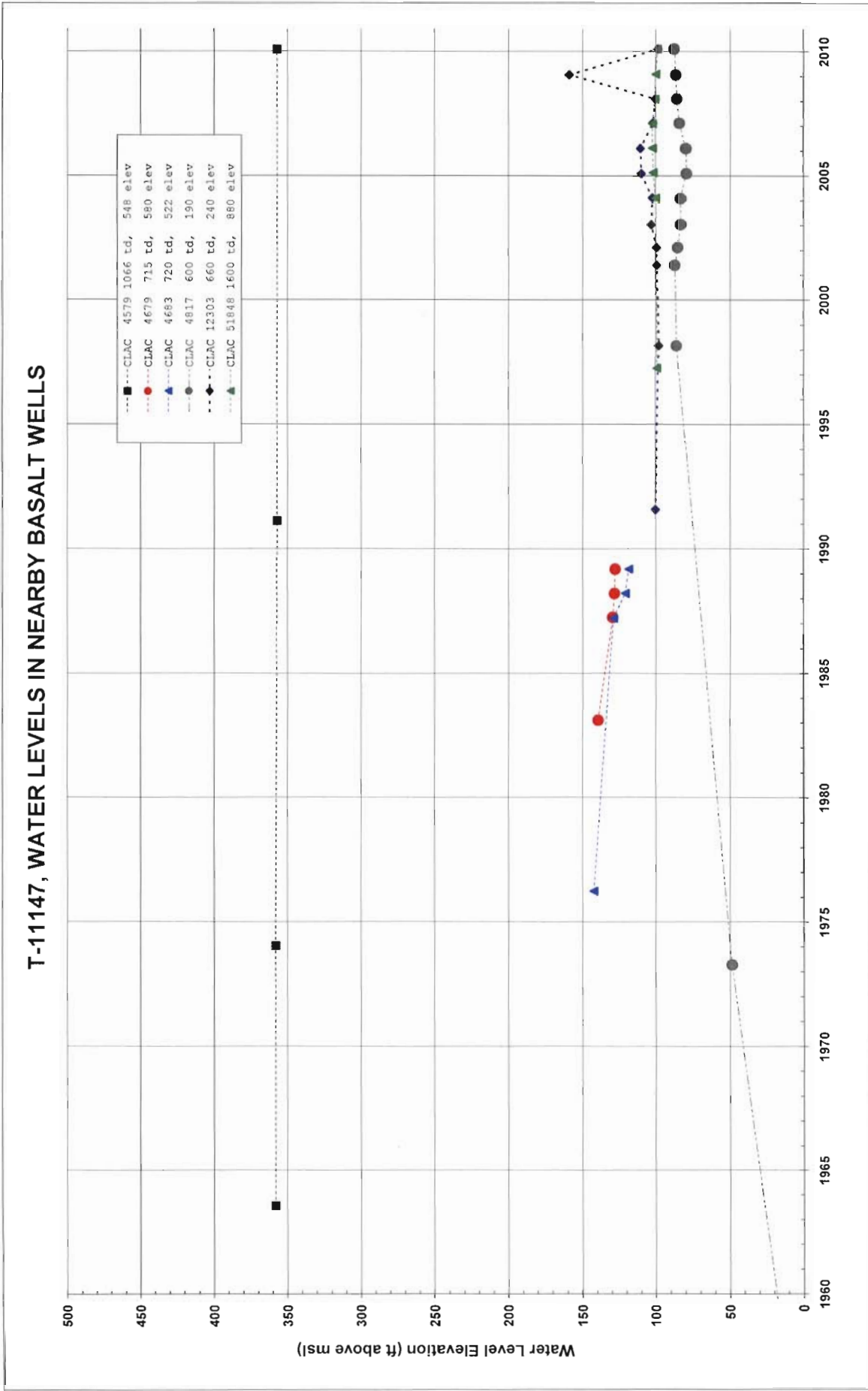


Figure 3. Static water level elevations in nearby basalt wells.