RECLAMATION
Managing Water in the West

Environmental Assessment

Quartz Valley Indian Reservation Wells Project

March 2017

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms and Abbreviations

APE	Area of Potential Effect
EPA	Tribal Environmental Protection Agency
ESA	Federal Endangered Species Act
gpm	gallons per minute
ITA	Indian Trust Assets
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
QVIR	Quartz Valley Indian Reservation
Reclamation	Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service

Section 1 Purpose and Need for Action

1.1 Introduction

Reclamation proposes to provide funding to the Quartz Valley Indian Reservation (QVIR) for the installation of three groundwater monitoring wells to increase the spatial resolution on the Quartz Valley floor and increase understanding of the three sub-basins of Quartz Valley (Shackleford, Mill and Sniktaw creeks). The Proposed Project also includes drilling two drinking water wells to meet the needs of tribal drinking water, especially during drought years. During the summer of 2014 and 2015, some drinking water wells were completely dry leaving tribal members without residential water.

1.2 Purpose and Need

The purpose of the Proposed Action is for Reclamation to provide funding to the QVIR for the installation of three groundwater monitoring wells and two drinking water wells. Funding is being provided to QVIR for the following reasons: (1) drought conditions at QVIR have caused a few drinking water wells on the Reservation to dry up in the late fall continuing until the water table has been recharged; (2) the current spatial distribution of the wells on the Reservation has led to some key areas with little to no water supply; and (3) information is needed in order to develop a groundwater management plan as well as a drought management plan for the Reservation and the greater Quartz Valley. Installation of the new wells would provide an immediate additional water supply to the Reservation and installation of groundwater monitoring wells would provide QVIR with the ability to monitor their groundwater resource.

This EA is in compliance with the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). Reclamation has also prepared a Finding of No Significant Impact (FONSI) which explains why the Proposed Action will not have a significant effect on the human environment.

1.3 Potential Resource Issues

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed further in Section 3.

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Indian Trust Assets

1.4 Resources Not Analyzed in Detail

It was determined that the following resources would not be impacted by the Proposed Action: air quality, global climate change, land use, recreation, geology and soils, visual, transportation, noise, hazards and hazardous materials, environmental justice, and socioeconomics. No Indian sacred sites have been identified within the Proposed Action/Proposed Project area. Therefore, impacts to these resources are not analyzed in this EA.

Section 2 Alternatives

2.1 No Action Alternative

The No Action Alternative includes not drilling three new monitoring wells or two new drinking wells for the QVIR. Under this alternative, the QVIR would not be able to provide additional water supplies to the Reservation and would not be able to monitor groundwater within the Reservation.

2.2 Proposed Action Alternative

Reclamation proposes to provide funding to the QVIR for a well development project located on tribal and private lands approximately six miles west of Fort Jones, California (Figure 1).

The QVIR proposes to install two new drinking water wells and three groundwater monitoring wells to collect data for developing a groundwater and drought management plan for the QVIR and the greater Quartz Valley area. Each well will be completed by street-legal truck-mounted drill equipment using a 6-inch to 8-inch diameter casing. The drinking water wells will be drilled to a depth of approximately 140 feet. A concrete pad will be constructed around the well head on which the pump and pump house structure will sit, and a power line will connect the pump to an existing line. The concrete pad will have a maximum dimension of approximately 5 feet square and 12 inches thick, 6 inches of which may be buried. Both drinking water wells are situated adjacent to an existing well and will tie into those existing utilities. The monitoring wells will be drilled to a depth of approximately 40 to 60 feet, and will consist of an above ground segment of pipe, measuring approximately two feet, with a locking cap. The work area for each well location will measure between 0.01 acres (436 square feet) and 0.1 acres (4,356 square feet) based on their location and point of access. Each well will be accessed either from a paved road and/or driveway, or by driving overland. No road improvements will be necessary to complete the project. Equipment and materials will be staged adjacent to each well site.

All wells are on QVIR lands; however, one well is on tribal trust land and the other is on private property but access is granted (also tribal but not in trust). See Figures 2 through 6.

Table 1. Location and Description of Proposed Wells

Well Type	Location Description	Latitude	Longitude
Monitoring Well #1	Sniktaw Creek	N 41.37.022	W -122.58.763
Monitoring Well #2	Upper Shackleford Creek – realtime location	N 41. 35.462	W -122.58.123
Monitoring Well #3	Lower Shackleford Creek	N 41.36.495	W -122.57.435
Drinking Water Well #1	George's house	N 41.36.010	W -122.58.650
Drinking Water Well #2	Kevin's house	N 41.35.831	W -122.58.345

Section 3 Affected Environment & Environmental Consequences

The QVIR is located in Quartz Valley, a small valley approximately three miles long and one mile wide, in the western portion of Scott Valley in Siskiyou County, Northern California. The larger Scott Valley area and western portions of Quartz Valley are surrounded by large mountain ranges laced with summer snow. Quartz Hill borders the eastern side of Quartz Valley, and separates it from Scott Valley. The Reservation is located 12 miles outside of Fort Jones, California and covers 143.37 acres in the north central part of Quartz Valley.

3.1 Surface Water Resources

3.1.1 Affected Environment

Two major rivers drain from Siskiyou County; the Sacramento and McCloud branch drain the southerly part of the County down through the Central Valley; the Klamath River and its branches - Scott, Salmon and Shasta - drain the major portion of the County westerly to the Pacific Ocean. Located in a small valley between Boulder Peak and Quartz Hill, the Quartz Valley includes hydrologic features such as Mill Creek, Shackleford Creek, Alder Creek, and Sniktaw Creek which drain into the Scott River. The features of these drainage systems have been altered over the years, creating Shackleford, Fretis and Mill Creek ditches for irrigation and mining.

Most of the rain in the Quartz Valley falls during the winter. The months of heaviest rainfall are December through March, when monthly totals range from 1.5 inches in the valley to six to seven inches at the 2,600 foot level. At lower elevations, most of the moisture falls as steady rain in winter storms that cover broad areas. Only at higher elevations are there likely to be summer thundershowers of high intensity.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, surface water use would neither increase nor decrease and, therefore, there would be no impacts to surface water. The Tribe would also not be able to monitor their groundwater resources in the QVIR nor would they be able to provide water for Tribal members.

Proposed Action

Construction activities would include drilling, excavation and trenching which have the potential to increase sedimentation into surface waters. Best management practices (BMPs) would be implemented, which includes carrying out the work prior to the rainy season. A buffer of 150 feet will be maintained adjacent to streams, riparian corridors and wetlands. The monitoring wells near Sniktaw and Shackleford creeks would be approximately 1,500 feet from the creek and are therefore, would not impact surface water in the creek.

Cumulative Effects

The Proposed Action consists of establishing new wells on Tribal lands that would be used for providing water for the Tribal community and for monitoring groundwater. The new wells would be connected to overhead powerlines and water would be conveyed by existing underground pipelines. The Proposed Action would not contribute to changes in surface water and therefore; would not contribute to cumulative effects to surface water resources.

3.2 Groundwater Resources

3.2.1 Affected Environment

The most common use of water withdrawn from the northern California alluvial-valley aquifers is irrigated agriculture. Surface water provides the largest source of supply, but groundwater is a significant percentage of the total water withdrawn, especially in dry years. Municipal and industrial supplies in most of the valleys depend primarily on groundwater. (ICDBG 2005)

Groundwater in the valleys is contained mostly in the alluvial-fan and lake deposits that fill the basins. Small to large amounts of groundwater are stored in fractures and joints of volcanic rocks. In some basins, however, volcanic rocks store, transmit and yield large amounts of water. Whether the groundwater is under confined or unconfined conditions depends upon depth and the amount of fine-grained materials. (ICDBG 2005)

The aquifers are recharged by runoff from the surrounding mountains, seepage from streams, precipitation on the valley floor, irrigation return, or subsurface flow through fractured crystalline rocks. Groundwater leaves the valleys by evapotranspiration, as stream discharge in the valleys that are drained by rivers, and in some cases, by subsurface flow through permeable bedrock. (ICDBG 2005)

Well depths vary among the valleys, but most wells are from 50 to 500 feet deep; those in volcanic rock, however, can exceed 1,300 feet in depth. Well yields vary widely and depend on the permeability of the water-yielding material in which the well is placed. Yields range from less than 100 gallons per minute (gpm) in alluvial-fan and lake deposits to as much as 5,000 gpm in intensely fractured volcanic rocks. (ICDBG 2005)

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, the Tribe would continue with current practices and no additional groundwater resources would be affected. The Tribe would also not be able to monitor their groundwater resources in the QVIR nor would they be able to provide water for some Tribal members.

Proposed Action

Under the Proposed Action, the new wells would pump a maximum of 20 gpm and would therefore, neither draw down the aquifer nor impact groundwater resources in the area. In addition, the proposed monitoring wells are intended to monitor groundwater levels within the QVIR so as to determine effects, if any, on groundwater in the area. This will allow the Tribe to determine how pumping affects groundwater and their wells. The monitoring well network associated with the new wells would be used for monitoring groundwater temperatures and levels in and near streams on the Reservation. Data collected from these wells would provide information to help develop a groundwater management plan and a drought management plan for the QVIR. With the minimal amount of groundwater pumped and with continual monitoring of the resource, the Proposed Action would not result in impacts to groundwater resources in the area.

Cumulative Effects

Increased draft of groundwater could have a minor impact on the amount of groundwater available in the area. The Proposed Action would have no significantly cumulative impacts on groundwater resources.

3.3 Biological Resources

3.3.1 Affected Environment

Vegetation

The Proposed Action area is within the Klamath-Siskiyou Lower Montane Mixed Conifer Woodland. Common tree species include Douglas fir, Gray pine, Sugar pine, Jeffrey Pine, knobcone pine, Tanbark oak, Manzanita, and various oak species. Native perennials such as beargrass, and Idaho Fescue also exist within this area. Understory species include needlegrass, Western mountain mahogany, snowberry, and blue wildrye.

Wildlife

Mixed conifer woodlands include plant communities that support diverse populations of wildlife. Common wildlife species that could occur in the surrounding area include: mule (black-tailed) deer, black bear, bobcat, mountain lion, wolverine, opossum, coyote, raccoon, pine marten, ringtail cat, spotted skunk, striped skunk, and western gray squirrel. Common bird species include acorn woodpecker, brown towhee, California quail, California thrasher, flicker, raven, scrub jay, and red-tailed hawk.

Special-status Species

A species list, included in Table 2 below, was generated from the U.S. Fish and Wildlife Service (USFWS) Arcata Field Office's website on February 22, 2017 (USFWS 2017).

Table 2. Species Identified as Potentially Occurring in the Proposed Action Area

Common Name	Scientific Name	Federal Status	Habitat in Area
AMPHIBIANS			
Rana pretiosa	Oregon spotted frog	T	No
INVERTEBRATES			
Branchinecta lynchi	Vernal pool fairy shrimp	T	No
Branchinecta conservatio	Conservancy fairy shrimp	E	No
Lepidurus packardi	Vernal pool tadpole shrimp	E	No
FISH			
Deltistes luxatus	Lost River sucker	E	No
Chasmistes brevirostris	Shortnose sucker	E	No
BIRDS			
Coccyzus americanus	Western yellow-billed cuckoo	T	No
Strix occidentalis caurina	Northern spotted owl	T	No

Table 2. Species Identified as Potentially Occurring in the Proposed Action Area

Common Name	Scientific Name	Federal Status	Habitat in Area
MAMMALS			
Canis lupus	Gray wolf	E	No
PLANTS			
Fritillaria gentneri	Gentner's fritillary	E	No
Chamaesyce hooveri	Hoover's spurge	T	No
Orcuttia tenuis	Slender Orcutt grass	T	No
Phlox hirsute	Yreka phlox	E	No

T=Threatened, E=Endangered

Migratory Birds

Birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Any activity that results in the take (to harass, harm pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the USFWS. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. The following migratory birds are species of particular conservation concern that may be potentially affected by activities in this location:

- Bald eagle (season: year round)
- Black swift (season: breeding)
- Burrowing owl (season: year round)
- Calliope hummingbird (season: breeding)
- Flammulated owl (season: breeding)
- Fox sparrow (season: breeding)
- Green-tailed towhee (season: breeding)
- Lewis's woodpecker (season: year round)
- Loggerhead shrike (season: year round)
- Oak titmouse (season: year round)
- Olive-sided flycatcher (season: breeding)
- Peregrine falcon (season: year round)
- Purple finch (season: year round)
- Rufous hummingbird (season: breeding)
- Short-eared owl (season: year round)
- Snowy plover (season: breeding)
- Swainson's hawk (season: breeding)
- Western grebe (season: breeding)
- White-headed woodpecker (season: year round)
- Williamson's sapsucker (season: year round)
- Willow flycatcher (season: breeding)

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, the Tribe would continue current land use practices resulting in no adverse impacts to biological resources. The Tribe would also not be able to monitor their groundwater resources in the QVIR nor would they be able to provide water for some Tribal members.

Proposed Action

There is no suitable habitat for any listed species within the Proposed Project area, therefore, Reclamation has determined that the Proposed Action would have no effect on biological resources in the area due to the limited area affected. Although there is some limited suitable habitat for migratory birds within the Proposed Project area, measures to avoid impacts to nesting or foraging birds will be implemented before and during well installation, which is anticipated to be short term.

Cumulative Effects
The Proposed Action would not result in adverse impacts to biological resources and due to the fact that at this time there are no additional projects planned on the Reservation, the Proposed Action would not contribute to cumulative impacts to biological resources.

3.4 Cultural Resources

3.4.1 Affected Environment

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 USC § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 Code of Federal Regulations (CFR) Part 800, is the primary Federal legislation that outlines the Federal Government's responsibility to historic properties. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on historic properties, which are those cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). For Federal Proposed Projects, cultural resource significance can be evaluated in terms of eligibility for listing in the NRHP.

The Section 106 process, as outlined in the Federal regulations at 36 CFR § 800, describes the steps that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking would have on historic properties, and consult with the State Historic Preservation Officer (SHPO) to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

Reclamation proposes to provide funding to the QVIR for a well development project located on tribal and private lands. The use of Federal appropriations for this project constitutes an undertaking as defined in 36 CFR § 800.16(y). The proposed well development is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). As a result of this determination, Reclamation implemented the steps in the Section 106 process as outlined at §800.3 to §800.6.

In an effort to identify historic properties, a Reclamation Archaeologist conducted a cultural resources investigation covering the APE. A record searches, consultation, and archaeological pedestrian survey resulted in identification of only contemporary infrastructure. No other cultural resources were identified in or adjacent to the APE.

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Quartz Valley Indian Reservation as an Indian tribe who might attach religious and cultural significance to historic properties within the APE, and sent a letter to invite their participation in the Section 106 process pursuant to 36 CFR § 800.4(a)(4). Reclamation also coordinated through phone calls and a field visit with QVIR staff. No such properties have been identified through consultations with these Indian tribes and Native American organizations.

Utilizing these identification efforts, Reclamation entered into consultation with the State Historic Preservation Officer (SHPO), notifying them of Reclamation's finding that the proposed undertaking will result in "no historic properties affected pursuant to 36 CFR § 800.4(d)(1)." Reclamation also consulted with the QVIR Chairman on the same basis as the SHPO pursuant to the 36 CFR Part 800.3(d) regulations that implement Section 106 of the NHPA for projects located on tribal lands. A response from SHPO and the QVIR Chairman are pending.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no impacts to cultural resources since there would be no change in operations and no ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

Proposed Action

The Proposed Action is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). A records search, a cultural resources survey, and Tribal consultation identified historic properties within the APE. No cultural resources other than contemporary infrastructure were identified in the APE. Reclamation determined that there will be no historic properties affected pursuant to 36 CFR § 800.4(d)(1); therefore, no cultural resources would be affected as a result of implementing the Proposed Action.

Cumulative Effects

Reclamation determined that there will be no historic properties affected pursuant to 36 CFR § 800.4(d)(1); therefore, there will be no cumulative impacts to cultural resources as a result of implementing the Proposed Action.

3.5 Indian Trust Assets

3.5.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. These rights are reserved for, or granted to, tribes. A defining characteristic of an ITA is that such assets cannot be sold, leased, or otherwise alienated without Federal approval. Indian reservations, rancherias, and allotments are common ITAs. Allotments can occur both within and outside of reservation boundaries and are parcels of land where title is held in trust for specific individuals. Additionally, ITAs include the right to access certain traditional use areas and perform certain traditional activities. It is Reclamation policy to protect ITAs from adverse impacts resulting from its' programs and activities whenever possible. Types of actions that could affect ITAs include an interference with the exercise of a reserved water right, degradation of water quality where there is a water right or noise near a land asset where it adversely affects uses of the reserved land.

The closest ITA to the Proposed Project is 3 to 10 miles from the project area.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, the Tribe would not be able to provide high-quality drinking water for its members and their health and safety may be compromised as a result. The Tribe would continue their current land use practices resulting in no adverse impacts to ITAs.

Proposed Action

Under the Proposed Action, the Tribe would drill two new drinking and three monitoring wells at the QVIR. Based on the nature of the planned work, it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the Proposed Project on actual Indian lands. It is reasonable to assume that the proposed action will not have any impacts on ITAs.

Cumulative Effects

The Proposed Action would not result in adverse impacts to ITAs and, therefore, would not contribute to cumulative impacts to ITAs.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to sign a Finding of No Significant Impact for this Project, and will make the EA available for 7 days beginning March 7, 2017. Any comments received will be addressed in the FONSI. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

4.2 Section 106 of the National Historic Preservation Act

Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the California SHPO, Indian tribes and other consulting parties. Reclamation initiated Section 106 consultation with the SHPO, and made a finding of "no historic properties affected" pursuant to 36 CFR §800.4(d)(1), for the proposed undertaking. Reclamation also consulted with the QVIR Chairman on the same basis as the SHPO pursuant to the 36 CFR Part 800.3(d) regulations that implement Section 106 of the NHPA for projects located on tribal lands. At the time of this EA, Reclamation has not yet received a response from the SHPO or the QVIR Chairman on its findings. Reclamation will complete the Section 106 compliance process prior to issuing a notice to proceed to implement the Proposed Action.

Section 5 References

California Department of Water Resources. 2004. California's Groundwater Bulletin 118. Updated February 27, 2004.

Quartz Valley Indian Reservation. 2008. Water Quality Monitoring and Assessment Report. December 3, 2009.

_____. 2007. Water Quality Monitoring and Assessment Report. June 4, 2008.

U.S. Department of Housing and Urban Development (ICDBG). 2005. Environmental Assessment: Tribal Health and Wellness Clinic. Project #B-03-SR-06-2911. March 1, 2005

U.S. Fish and Wildlife Service. 2017. Threatened and Endangered Species List. USFWS Arcata Office Website accessed on February 22, 2017.

Figures

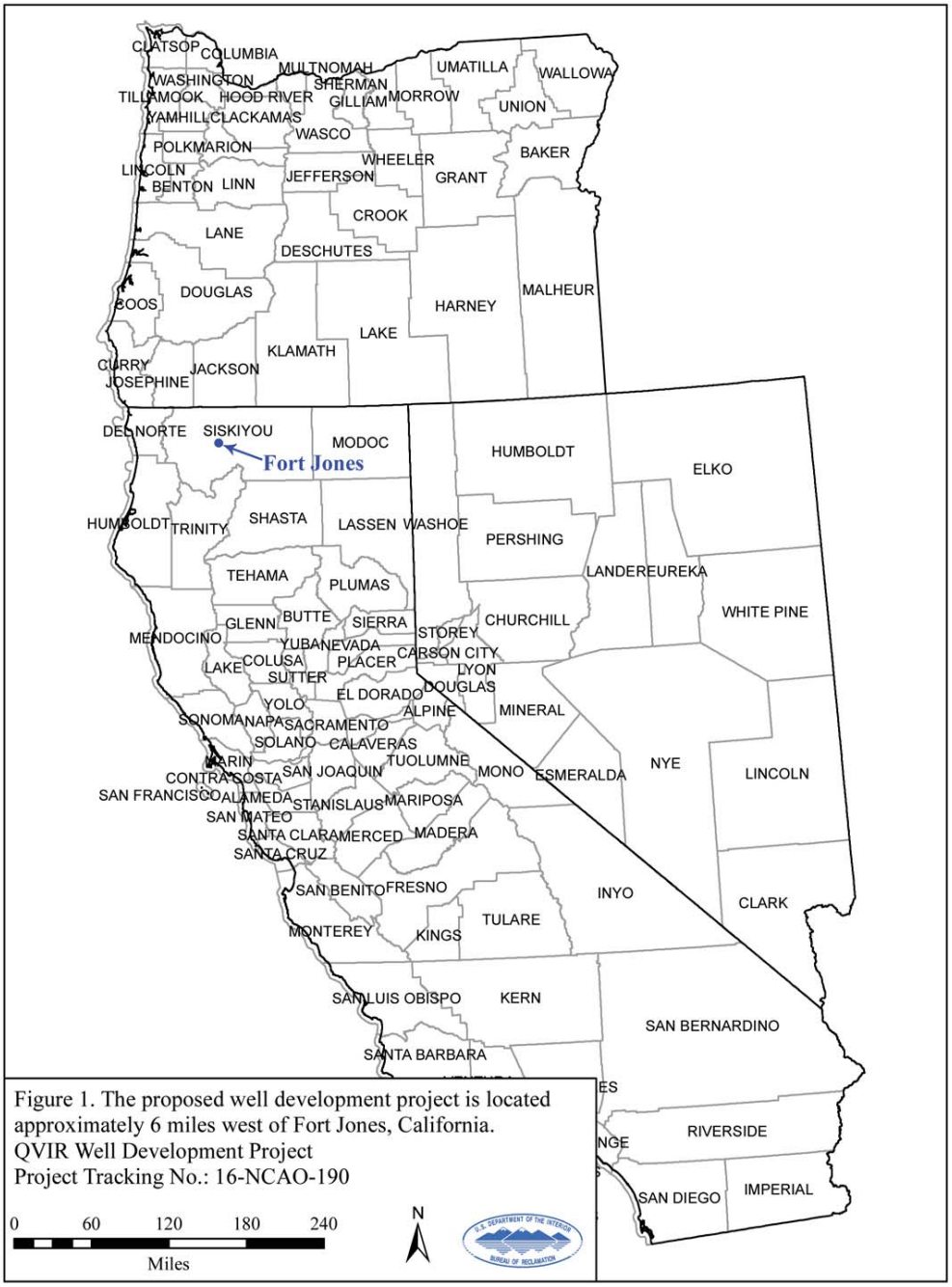

Figure 1. The proposed well development project is located approximately 6 miles west of Fort Jones, California.
QVIR Well Development Project
Project Tracking No.: 16-NCAO-190

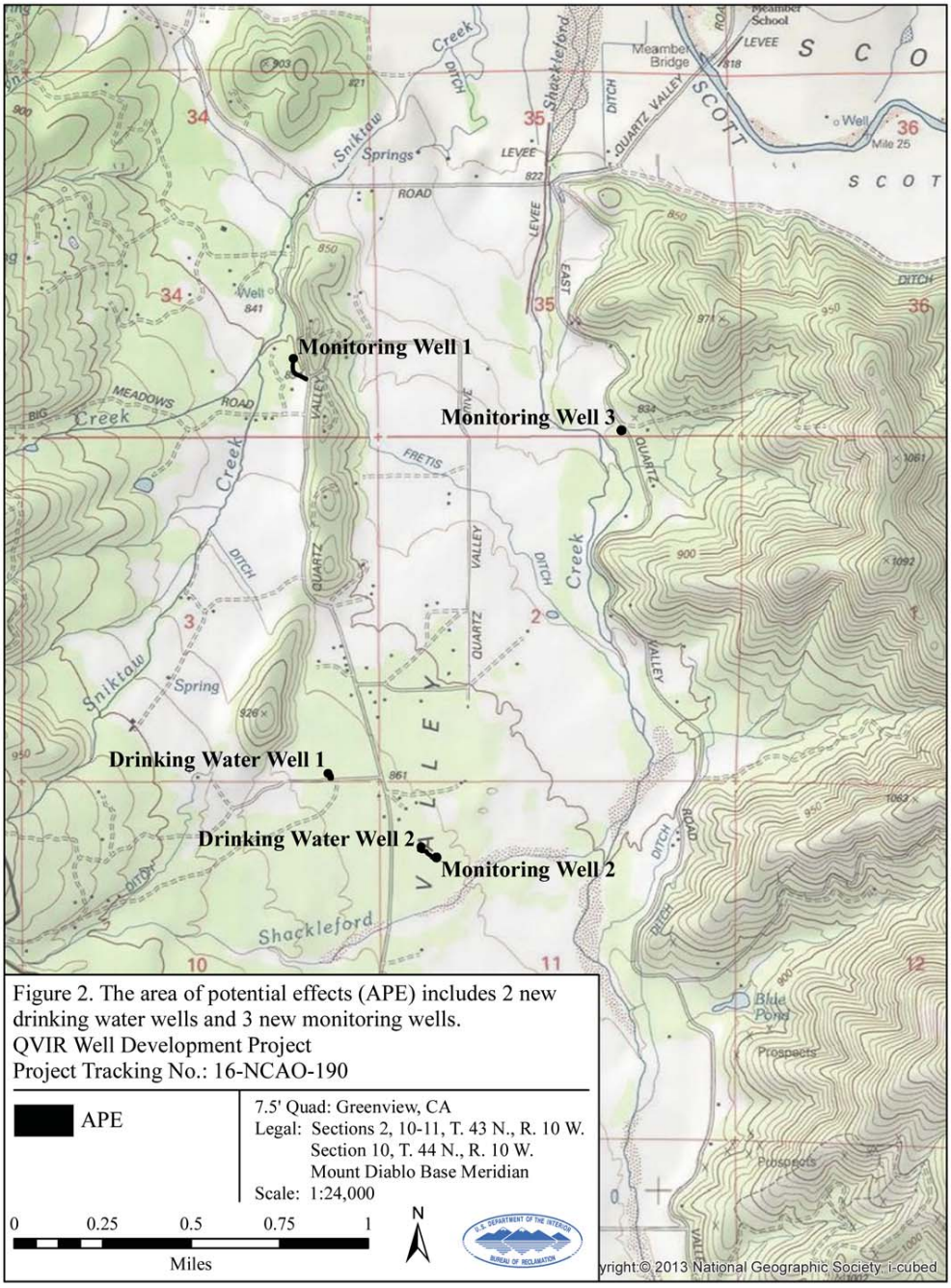

Figure 2. The area of potential effects (APE) includes 2 new drinking water wells and 3 new monitoring wells.
QVIR Well Development Project
Project Tracking No.: 16-NCAO-190

APE

7.5' Quad: Greenview, CA
Legal: Sections 2, 10-11, T. 43 N., R. 10 W.
Section 10, T. 44 N., R. 10 W.
Mount Diablo Base Meridian
Scale: 1:24,000

0 0.25 0.5 0.75 1
Miles

N

Figure 3. The area of potential effects (APE): Monitoring Well 1.
Composite satellite imagery.
QVIR Well Development Project
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Figure 4. The area of potential effects (APE): Monitoring Well 2 and Drinking Water Well 2. Composite satellite imagery.
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Figure 5. The area of potential effects (APE): Monitoring Well 3. Composite satellite imagery.
QVIR Well Development Project
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Figure 6. The area of potential effects (APE): Drinking Water Well 1. Composite satellite imagery.
QVIR Well Development Project
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