

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Executive Summary has been prepared in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123(b), which states that an EIR should contain a brief summary of the Proposed Project and its consequences, and should identify:

- " 1. Each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect;
2. Areas of public controversy known to the lead agency, including issues raised by the agencies and the public; and
3. Issues to be resolved, including the choice among alternatives and how to mitigate the significant effects."

This Draft Environmental Impact Report (EIR) identifies and evaluates the potential environmental impacts associated with the implementation of the proposed Water Supply Improvement Project (WSIP) for the Indian Wells Valley Water District (IWWVD or District). This EIR was prepared in accordance with CEQA (Public Resources Code Sections 21000-21177) and the Guidelines for the Implementation of CEQA published by the Resources Agency of the State of California (California Administrative Code Sections 15000 *et seq*).

CEQA requires that the Lead Agency, in this case the IWWVD, to consider the information contained in the EIR prior to taking any discretionary action. This EIR may also be used by other public agencies that must make discretionary actions related to the proposed WSIP.

ES.2 PROJECT LOCATION AND SETTING

The Proposed Project would be generally located west of the City of Ridgecrest, southeast and east of Inyokern, and south of NAWS China Lake in Kern County, California. The Proposed Project would increase system capacity to meet the existing demand with a 20 percent redundancy in capacity through equipment improvements in existing Wells 18 and 34 (Phase 1). In the future, if water demand increases, the IWWVD would construct and operate one new well, proposed Well 35 (Phase 2).

Existing Wells 18 and 34 are located east and west of Brown Road and south of Bowman Road, just south of Inyokern. Proposed Well 35 would be located on the south side of Bowman Road between Moon Place and Star Place. An approximately 400-foot, 12- to 16-inch pipeline would connect proposed Well 35 to the existing pipeline in Bowman Road. The pipeline would only be for transmission purposes and no individual distribution connections are proposed. Well 35 and the transmission pipeline would be located on two parcels which total 3.92 acres, and are recorded with the County of Kern

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as Assessor's Parcel Numbers (APNs) 341-234-02 and -03 (Figure 2-4). Both parcels are owned by IWWWD.

ES.3 PROJECT BACKGROUND

ES.3.1 Introduction and Purpose

The District's Water General Plan and Urban Water Management Plan (IWWWD 1997 and 2011) recommend that the District's water production wells should have sufficient combined capacity to meet maximum day demands with the largest well pumping plant out of service, to accommodate scheduled and unscheduled outages on the maximum day, or a 20 percent redundancy in capacity. Although the IWWWD currently has interconnection agreements with Searles Valley Minerals and NAWS China Lake, these agreements are only for use in a catastrophic interruption of water supplies, defined in the California Water Code Section 10632 as "regional power outage, earthquake, or other disaster." The interconnections could not be relied upon during general equipment failures or scheduled maintenance. Therefore, development of additional water supplies is necessary to satisfy the 20 percent redundancy in capacity needed to continue serving current demand in the case of a mechanical failure or water quality issue in one or more wells during the maximum day. Additional capacity is also required to accommodate a modest predicted future population growth of approximately one percent per year, based on estimates from the Kern Council of Governments (COG) (Kern COG 2010).

ES.3.1.1 2007 WSIP

In 2007, IWWWD proposed a WSIP to meet the maximum day demand with a 20 percent redundancy in capacity, as well as additional domestic water service demand from a potential increase in population associated with the transfer of new employees to NAWS China Lake and a moderate growth in the community. A CEQA Initial Study/Mitigated Negative Declaration (IS/MND) for the project was prepared, and was circulated for public comment from May 8 to June 7, 2007. The IWWWD Board of Directors held public hearings for the project and the associated IS/MND on July 9 and August 13, 2007. During the public comment period for the IS/MND, comments were submitted that included concerns about how the proposed increase in groundwater production would affect existing hydrogeologic conditions (water levels and water quality). The project was not approved, and the Board of Directors directed staff to re-evaluate the project and to prepare a comprehensive groundwater model that would evaluate the impacts of increasing the IWWWD's pumping capacity.

ES.3.1.2 2010 Water Model

In 2010, Layne Christensen Company prepared an evaluation of the existing water supply wells, the water quality in the existing wells, and the impacts of increasing water supply through additional pumping at existing wells and new wells (Layne Christensen Company 2010). The evaluation reviewed existing wells and determined the feasibility of increasing capacity at existing wells. The evaluation also used three primary hydrogeologic criteria to identify favorable areas for the construction of new water supply production wells:

- ◆ Water quality;
- ◆ Aquifer transmissivity (how much water can be transmitted horizontally to the well); and
- ◆ Recent historical changes in water levels.

Based on the evaluation, four existing wells and four new well sites were selected for further assessment. Seven model scenarios (six pumping configurations plus a “status quo” scenario to represent the current pumping configuration) were constructed and run for the 13-year period of 2008 to 2020. The six pumping configurations represented combinations of different existing and new wells. The ultimate objective was to compare the short-term and long-term regional water levels resulting from the proposed pumping configurations to the water levels predicted for the “status quo” pumping configuration. The models were run twice, once for annualized pumping rates and once to account for seasonal variations in pumping (more pumping occurs in the summer than in the winter). The results of the models were used to recommend a new WSIP.

ES.3.1.3 Changes to the WSIP Resulting from EIR Scoping

A CEQA Initial Study and Notice of Preparation (NOP) of an Environmental Impact Report (EIR) were prepared for the WSIP using Scenario 6 from the 2010 Layne Christensen model as the Proposed Project. Scenario 6 had the fewest impacts to the aquifer. Scenario 6 included upgrades to two existing wells (wells 18 and 34) to provide system redundancy (Phase 1), and the installation of two new wells (proposed well 35 [Phase 2] and proposed well 36 [Phase 3]) to provide additional capacity to accommodate future projected demand and to continue the system redundancy. It was estimated that the demand for Phase 2 would occur in 2015 and Phase 3 would occur in 2020.

The NOP was distributed to agencies and the public for the purposes of soliciting comments on the scope of the EIR from July 6 to August 4, 2011. Comments were received from stakeholders concerning the production demand estimates used in the WSIP. Increases in workforce originally estimated by the Navy as a result of new missions at NAWS China Lake have since been determined by the Navy not likely to occur. Additionally, because alternative water sources may become available after 2015, the water source to provide for additional demand after 2015 could not be determined. Phase 3 was therefore eliminated from the WSIP, and the construction and operation of new Well 36 is no longer proposed. Well 17 is also no longer scheduled for abandonment because better technology available to control calcium carbonate scaling has decreased the frequency for needed equipment replacement and acid treatment of the well. To summarize, the following changes were made to the WSIP as a result of scoping comments:

- ◆ Production demand estimates have been recalculated and lowered based on new information from the Navy and growth estimates from Kern COG;

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- ◆ Phase 3 has been eliminated, because alternative water sources may become available after 2015. Well 36, which would have been located on the southeast corner of Las Flores Avenue and N. Victor Street, is no longer proposed as part of this project. Future water supply projects would require separate evaluation under CEQA;
- ◆ Well 17 would not be removed from service during the planning period (prior to 2015).

After the scoping period, the WSIP was revised as described above, resulting in the Proposed Project analyzed in this EIR. New groundwater modeling was conducted by Layne Hydro (successor firm to Layne Christensen) in August 2011 to reflect the new Proposed Project. The Proposed Project (Layne Hydro 2011, Appendix G) is described in more detail in Sections 2.3 and 2.4, below. Alternatives are described in Section 4.0. Additional information on modeling and water resources impacts is provided in Section 3.8.

ES.4 PROJECT OBJECTIVES

The District has projected that its existing groundwater production capacity cannot satisfy the current 20 percent redundancy in capacity needed to continue serving customers in the case of a mechanical failure or water quality issue in one or more of their existing wells, as required by the Water General Plan and the Urban Water Management Plan (IWWWD 1997 and 2011). Additionally, existing capacity will be inadequate to accommodate predicted future population growth. The requirement to remove arsenic from four District wells also leaves the District more vulnerable to production shortages due to the complexity of the two arsenic treatment plants. If a plant cannot be used for some reason for a period of time, the District would lose production from two wells. IWWWD's current maximum day demand with a 20 percent safety factor is approximately 13,960 gallons per minute (gpm). By 2015, the maximum day demand with a 20 percent safety factor is anticipated to be 14,350 gpm. IWWWD's existing domestic water production wells have an estimated nominal capacity of approximately 11,600 gpm, including reserve capacity.

The IWWWD currently does not have enough capacity to allow for a 20 percent redundancy to cover planned and unplanned equipment failure during the maximum demand days with a 20 percent safety factor. Additionally, production demand is anticipated to increase based on population growth estimates from Kern COG (Kern COG 2010). The IWWWD has proposed a WSIP to meet redundancy and increased demand requirements through 2015, as described and analyzed in this EIR.

The WSIP is proposed to meet the following project objectives:

- ◆ Provide a cost-effective, safe and reliable source of domestic water supply for the IWWWD's customers;
- ◆ Provide a 20 percent system redundancy to ensure water supply to IWWWD's customers during maximum pumping days; and

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- ◆ Meet the IWWWD's current and future water production requirements, including increases in domestic water demand resulting from projected population increases of approximately 1 percent per year in Kern County and no additional connections in San Bernardino County.

ES.5 DESCRIPTION OF PROPOSED PROJECT

ES.5.1 Project Timing

IWWWD proposes to meet current and projected system redundancy and future increased domestic water demand in two phases. The first phase would be an increase in nominal pumping capacity at its existing Wells 18 and 34 to provide a 20 percent system redundancy for the existing maximum day demand (with a 20 percent safety factor). Nominal pumping capacity for each well would be increased from 1,200 gpm to 2,200 gpm. The first phase would occur in 2012. The second phase, new Well 35, would be constructed when maximum day production demand with a 20 percent safety factor is 14,350 gpm, which is anticipated to occur in approximately 2015. Table ES-1 shows the nominal capacity and the maximum day demand (with 20% safety factor) with the Proposed Project.

**Table ES-1
IWWWD Domestic Water System
Nominal Capacity of Well Pumping Plant Compared to Maximum Day Demand
(plus 20% Safety Factor), With Proposed Project
(values in gpm)**

| WELL | PHASE | |
|--|-------------------|----------------------|
| | Phase 1 (2012) | Phase 2 (2015) |
| 9A | 1,000 | 1,000 |
| 10 | 1,100 | 1,100 |
| 11 | 1,000 | 1,000 |
| 13 | 1,100 | 1,100 |
| 17 | 1,200 | 1,200 |
| 30 | 1,400 | 1,400 |
| 31 | 1,200 | 1,200 |
| 18 | 2,200 | 2,200 |
| 33 | 1,200 | 1,200 |
| 34 | 2,200 | 2,200 |
| 35 | 0 | 1,000-2,200 |
| NOMINAL CAPACITY | 13,600 | 14,600-15,800 |
| PRODUCTION DEMAND (max day plus 20% safety factor) | 13,960 | 14,350 |
| PRODUCTION CAPACITY (NEED) SURPLUS | (360) | 250-1,450 |

The IWWWD cannot currently meet a 20 percent redundancy in capacity for existing maximum day demand, and is proposing to construct Phase 1 in 2012. The timing of future phases was estimated based on population projections; however, the actual implementation of future phases would be triggered based on actual demand. Water production figures are currently, and would continue to be, recorded daily in the IWWWD's computerized database. Tank levels and pumping plants are monitored on a continuous basis by telemetry at the IWWWD's headquarters. If there is a period, likely during the summer season, when maximum day demand cannot be reliably met, then the next phase of the WSIP would be triggered.

Installation of new equipment at existing wells is expected to take approximately 60 days for each well. Site work and pumping facility construction for new Well 35 is anticipated to take nine to eleven months, including one month for site preparation and rough grading and two to three weeks for final grading. New well drilling is anticipated to take three to four months.

ES.5.2 Improvements to Existing Wells

During Phase 1, anticipated to be implemented in 2012, Wells 18 and 34 would be refitted with new pumping units and related power/control equipment to increase the nominal capacity in each well from approximately 1,200 gpm to approximately 2,200 gpm.

ES.5.3 Well 35 Construction and Operation

Well 35 would be constructed according to IWWWD standard well specifications, as described below. Well 35 would be located on the south side of Bowman Road between Moon Place and Star Place. The proposed well site would be approximately 250 feet by 250 feet within the 3.92-acre project site and would be accessed from Bowman Road. The well would be 16 to 20 inches in diameter with an anticipated depth of 900 to 1,400 feet below ground surface (bgs). The new well would have a nominal pumping capacity of up to 2,200 gpm.

A 12- to 16-inch pipeline of up to 400 feet would connect Well 35 to the existing pipeline in Bowman Road. Installation of the pipeline would require an approximately 6-foot-deep trench. The trench would be backfilled and compacted to match the existing road grade.

ES.5.3.1 Construction

The proposed well site would be cleared of vegetation and graded to prepare for the construction of the well. A chain-link, tortoise-proof fence with three-strand barbed wire or razor wire would be erected around the perimeter of the well site. Construction equipment would be staged within the fenced area. Drilling would take approximately three to four months. The new well would include steel screens, a 50-foot sanitary seal and conductor casing, and a concrete pump foundation within a well building. Pumping units, motors, controls, and electric switchgear would be installed based on parameters

determined during well drilling operations. Electrical services would come from the nearest Southern California Edison power pole located along the existing roadway (Bowman Road).

ES.5.3.2 Well Development

The new well would be developed using air-lift and pumping equipment driven by diesel engine drivers. The well would be tested using the temporary diesel-driven pump for approximately one week. The water discharged from the development and testing of the well would be percolated into the ground locally, either by discharge to an on-site percolation pond or by sprinklers.

ES.5.3.3 Disinfection and/or Treatment Facilities

The new well would require chlorination facilities (dosing pump and sodium hypochlorite storage tank with secondary containment) and such additional treatment facilities that may be indicated by water quality testing performed at the time of drilling. Prior to operation, the well would be disinfected in accordance with the District's standard specifications. Disinfection water would be dechlorinated and discharged on the site in the same manner as the development and testing water. Arsenic treatment is not anticipated to be required.

ES.5.3.4 Discharge Pond

An approximate one-half to one acre discharge pond would be constructed immediately adjacent to the well. The discharge pond would be approximately three to six feet deep and would be used for purge water during well start-up for normal well pumping operations and may be used for well development and disinfection as described above.

ES.5.3.5 Operation

The well would be operated in accordance with system demands and maintenance schedules, approximately 70 to 90 percent of the time during high-demand summer months and 20 to 40 percent of the time during winter months.

ES.5.4 Water Conservation Efforts

The IWWWD's existing water conservation efforts would be continued with the Proposed Project. As a result of the IWWWD's conservation efforts, the average annual water consumption for connections within the IWWWD has decreased from approximately 269 gallons per capita per day in 1998 to approximately 243 gallons per capita per day in 2009. These conservation efforts are summarized below (IWWWD 2007):

- ◆ Conservation based rate structure: Since 1982, the IWWWD has developed and used an ascending block water rate structure. This rate structure provides for higher water rates when higher water use occurs, and is intended to encourage water conservation. In 2009, the District revised its rate structure, significantly

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increasing the rates of its highest level of use over 100 percent. Currently, the charge in the highest usage rate tier is 582 percent greater than the charge in the lowest usage rate tier.

- ◆ Conservation education: The IWWWD has provided educational services to inform the public about the need for water conservation and how to use water more efficiently. These educational services include school programs, presentations to various organizations, demonstration gardens, public service announcements, and the IWWWD newsletter.
- ◆ Conservation measures: The IWWWD has adopted various conservation and recycling practices. These practices include water surveys, free water-saving devices such as low-flow showerheads, water audits/leak detection, system repairs, landscape conservation assistance, public information programs, detailed accounting of water use, and cooperation with the City of Ridgecrest.
- ◆ Conservation regulations: The IWWWD has adopted two water conservation ordinances requiring water-efficient landscape as a condition of new IWWWD service. Additionally, IWWWD has a water-efficient landscape ordinance that addresses water use practices and prohibits water runoff and waste for existing connections (IWWWD 2011).

During a water supply emergency, the existing Water Shortage Contingency Plan and other measures described in the Urban Water Management Plan (IWWWD 2011) would be enacted. This includes a four-stage rationing plan that provides for voluntary and mandatory rationing depending on the causes, severity, and anticipated duration of the water supply shortage. During the volunteer rationing stage, a customer reduction goal of water use from 15 to 20 percent is requested. During the mandatory rationing stages, customer reductions of 30 to 40 percent would be required. For the 30 percent reduction, customers would have sufficient water for indoor uses, but non-essential (*e.g.*, outdoor) water uses would not be allowed. For the 40 percent reduction, indoor uses would also be limited.

ES.6 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Prior to the preparation of this EIR, an Initial Study was prepared (Appendix A). The Initial Study determined that the following environmental factors would either have potentially significant impacts, or required additional study before making the determination of impact significance:

- ◆ Air Quality;
- ◆ Biological Resources;
- ◆ Cultural Resources;
- ◆ Geology and Soils;
- ◆ Greenhouse Gas Emissions;
- ◆ Hazards/Hazardous Materials;
- ◆ Hydrology/Water Quality
- ◆ Noise;

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- ◆ Population and Housing; and
- ◆ Utilities and Service Systems.

The potentially significant impact identified in the Population and Housing category is related to growth-inducing impacts, which are required to be examined by CEQA Guidelines Section 15126.2(d). The analysis of growth-inducing impacts occurs in Section 5 of this EIR. The analysis of all other impact categories occurs in Section 3 of this EIR. It should be noted that the potentially significant impact identified in the Utilities and Service Systems category is related to the potential impact on groundwater resources. This issue is discussed in Section 3.7, Hydrology and Water Quality, and a separate Utilities and Service Systems section is not provided in this EIR.

The Initial Study determined that the following issues did not warrant further analysis in the PEIR:

- ◆ Aesthetics;
- ◆ Agricultural Resources
- ◆ Land Use and Planning;
- ◆ Mineral Resources;
- ◆ Public Services;
- ◆ Recreation; and
- ◆ Transportation and Circulation.

ES.6.1 Impacts Considered Less Than Significant

Based on additional study during the preparation of the Draft EIR, the following environmental factors were determined to have a less than significant impact as a result of the Proposed Project:

- ◆ Air Quality;
- ◆ Greenhouse Gas Emissions;
- ◆ Hazards and Hazardous Materials; and
- ◆ Noise.

ES.6.2 Potentially Significant Adverse Impacts that Can Be Mitigated

Potentially significant impacts were identified in the following environmental resource areas. However, these impacts would be reduced to levels below significant with the implementation of project-specific mitigation measures (see Table ES-3).

- ◆ Biological Resources;
- ◆ Cultural and Paleontological Resources;
- ◆ Geology and Soils; and
- ◆ Hydrology and Water Quality (Water Supply).

ES.6.3 Unavoidable Significant Effects

One significant, unavoidable effect was identified, a cumulative impact to water quality in the Indian Wells Valley basin. Existing groundwater pumping from all users in the Indian Wells Valley has created groundwater depressions, such that groundwater elevations in these areas are lower than those in surrounding areas. It is assumed, therefore, that water levels dropping throughout the basin has caused the co-mingling of good quality and lesser quality water. The increased pumping from the Proposed Project, however, is a very small fraction of the existing total pumping from the basin that has created the groundwater depressions. Thus, the contribution of the Proposed Project to the change in groundwater quality is miniscule and cannot be quantified, measured, or monitored.

It is important to note that this impact on the aquifer would occur whether or not the Proposed Project is implemented. In fact, even if all of the pumping by IWWWD was to cease, more groundwater would still be pumped from the basin than is being recharged. Groundwater depressions would still persist, and lower-quality groundwater would continue to co-mingle with higher-quality groundwater. Therefore, the nominal increase in pumping that would occur as part of Phase 2 of the Proposed Project would be less-than-significant at the project level, but significant and unavoidable at a cumulative level.

ES.7 AREAS OF CONTROVERSY

CEQA requires the EIR to identify areas of controversy or public interest. Prior to the preparation of this EIR, an Initial Study and Notice of Preparation (NOP) were prepared for the project (Appendix A). The Initial Study and NOP were distributed via Federal Express™ for review and comment to a mailing list of eighteen federal, state, and local agencies; the State Clearinghouse; and other interested parties for a 30-day scoping period from July 6, 2011 to August 4, 2011. The NOP was also transmitted via email to the District's in-house email list of 66 addresses and published in the following newspapers:

- ◆ *The Daily Independent*, legal advertisement, July 6, 2011
- ◆ *The Daily Independent*, display advertisement, July 9, 2011
- ◆ *News Review*, display advertisement, July 13, 2011

The NOP and Initial Study were also posted on the IWWWD's website, including notification of the scoping meeting and instructions on how to submit comments. The NOP was posted with the Kern County Clerk on July 6, 2011. Additionally, an open-house format scoping meeting was held on July 13, 2011, 5 pm, at the IWWWD Board Room.

Sixty-eight letters were received from the agencies and individuals. Some individuals submitted multiple comment letters. The majority of comments regarded the effect the project may have on the groundwater quality and quantity in the Indian Wells Valley.

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After review of the scoping comments, the IWWWD made the following changes to the WSIP:

- ◆ Production demand estimates have been recalculated based on new information from the Navy and growth estimates from Kern COG as projected in the Urban Water Management Plan (IWWWD 2011);
- ◆ Phase 3 has been eliminated, because alternative water sources may become available after 2015. Well 36, which would have been located on the southeast corner of Las Flores Avenue and N. Victor Street, is no longer proposed as part of this project. Future water supply projects would require separate evaluation under CEQA;
- ◆ Well 17 would not be removed from service during the planning period (prior to 2015).

The WSIP was revised as described above, resulting in the Proposed Project analyzed in this EIR. New groundwater modeling was conducted by Layne Hydro (the successor firm the Layne Christensen) in August 2011 to reflect the new Proposed Project (Appendix G).

ES.8 PROJECT ALTERNATIVES

CEQA requires an evaluation of the comparative effects of a reasonable range of alternatives to the Proposed Project that would feasibly attain most of the project's basic objectives and that would avoid or substantially lessen any of the significant impacts of the Proposed Project. Four alternatives were considered and rejected because they would not meet project objectives. These alternatives included:

- ◆ Construction of new wells on NAWS China Lake;
- ◆ Additional water conservation; and
- ◆ Developing supplemental water supply (including several sub-alternatives both within and outside of the Indian Wells Valley).

Five alternatives were evaluated, including the No Project Alternative, as required by CEQA. These alternatives included:

- ◆ Alternative 1 - Improve Wells 30 and 34/Construct Well 35;
- ◆ Alternative 2 - Improve Wells 30 and 31/Construct Well 35;
- ◆ Alternative 3 - Additional Water Production from Existing NAWS China Lake Wells;
- ◆ Alternative 4 – Phase 1 Only; and
- ◆ No Project Alternative.

Table ES-2 provides a comparison of the anticipated impacts of the alternatives to the Proposed Project with the Proposed Project.

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**Table ES-2
Comparison of Alternatives with Proposed Project**

| Category | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 (No Project) |
|--|----------------------|----------------------|----------------------|----------------------|---------------------------------------|
| Air Quality | ○ | ○ | ○ | - | - |
| Biological Resources | ○ | ○ | ○ | - | - |
| Cultural and Paleontological Resources | ○ | ○ | ○ | - | - |
| Geology and Soils | ○ | ○ | ○ | - | - |
| Greenhouse Gas Emissions | ○ | ○ | ○ | - | - |
| Hazards and Hazardous Materials | ○ | ○ | ○ | - | - |
| Hydrology and Water Quality | + | + | ○ | - | - |
| Noise | ○ | ○ | ○ | - | - |

Notes: **+** = Impacts would be greater than the Proposed Project
 ○ = Impacts would be the same as the Proposed Project
 - = Impacts would be less than the Proposed Project

ES.9 ISSUES TO BE RESOLVED BY THE LEAD AGENCY

The major issues to be resolved by the IWWWD as Lead Agency include the following:

- ◆ Whether the EIR adequately describes the environmental impacts of the Proposed Project;
- ◆ Whether the recommended mitigation measures should be modified/adopted;
- ◆ Whether the benefits of the WSIP override the significant cumulative impacts to water quality; and
- ◆ Which among the Proposed Project and its Alternatives should be selected for approval.

ES.10 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-3 presents a summary of the environmental impacts analyzed and identified in this EIR, the mitigation measures proposed for those impacts (if required), and the level of significance after mitigation.

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**Table ES-3
Impact and Mitigation Summary Table**

| ENVIRONMENTAL IMPACTS | MITIGATION MEASURES | RESIDUAL IMPACT |
|---|---------------------|------------------------|
| AIR QUALITY | | |
| <i>Construction Impacts.</i> Emissions associated with construction would be below the significance thresholds adopted by the East Kern Air Pollution Control District and impacts would therefore be less than significant. | None required. | Less than significant. |
| <i>Operational Impacts.</i> Operational emissions would be lower than the construction emissions on both a maximum daily and annual basis, and therefore would be less than significant. | None required. | Less than significant. |
| <i>Toxic Air Contaminants (TAC).</i> TACs are emitted in trace amounts from vehicles. Inspection and maintenance activities would not result in significant emissions of TACs, and therefore the project would not expose sensitive receptors to substantial pollutant concentrations. This impact is less than significant. | None required. | Less than significant. |
| <i>Consistency with Air Quality Management Plan.</i> The applicable Air Quality Management Plan for the Indian Wells Valley is the Ozone Air Quality Attainment Plan. The Proposed Project would comply with applicable rules, and would not conflict with or obstruct implementation of the attainment plan. This impact would be less than significant. | None required. | Less than significant. |
| BIOLOGICAL RESOURCES | | |
| <i>Impacts to Sensitive Plant Species.</i> Silver cholla, a sensitive plant, was identified adjacent to the proposed Well 35 but no individuals are located on the site. Impacts would not occur to this species | None required. | No impact. |

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| ENVIRONMENTAL IMPACTS | MITIGATION MEASURES | RESIDUAL IMPACT |
|--|---|-------------------------------|
| <p>through direct removal of plants due to vegetation removal and grading activities.</p> | | |
| <p>Impacts to Desert Tortoise. No desert tortoises were observed on the proposed Well 35 site during 2011 surveys but there is some potential for one or more tortoises to migrate onto or through the proposed Well 35 site prior to construction. Direct impacts to this species could occur from the removal of individuals and/or burrows during vegetation removal and excavation during the construction phase of the proposed Well 35. Direct impacts would be significant but mitigable. Indirect impacts to this species would occur from the removal of approximately 1.5 acres of burrowing and foraging habitat. Indirect impacts would not be significant because the proposed Well 35 site would remove a small amount of habitat classified as Category 3 Habitat under the West Mojave Plan, which is the lowest priority management area for viable populations of the tortoise. Furthermore, the site is not found within tortoise critical habitat. Other indirect impacts to the desert tortoise include the potential for trash generated during construction to attract the common raven (<i>Corvus corax</i>), which is a desert tortoise predator. With mitigation, this impact would be less than significant. Standing water in the discharge pond during well development and testing may also attract ravens, resulting in an indirect impact to the desert tortoise. However, because use of the discharge ponds would only occur during very short periods of time, impacts would be less than significant.</p> | <p>B-1: The District shall conduct an orientation program for all persons who will work on the well 35 site during construction. The program shall consist of a brief presentation from a person knowledgeable about the biology of the desert tortoise, FESA, and CESA. The education program shall include a discussion of the biology of the desert tortoise, the habitat needs of these species, their status under FESA and/or CESA, and the specific measures that are being implemented during construction to protect these species (See mitigation measures B-2 to B-19). In addition, they shall be advised as to the potential impact to tortoises and potential penalties (up to \$25,000 in fines per violation and one year in prison) for taking a threatened species. A fact sheet containing this information shall also be prepared and distributed. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be filed at the District office and at the construction office of the District's contractor and shall be made available to the CDFG and USFWS, upon request.</p> <p>B-2: The well 35 site shall be surveyed for desert tortoise burrows within 24 hours prior</p> | <p>Less than significant.</p> |

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| ENVIRONMENTAL IMPACTS | MITIGATION MEASURES | RESIDUAL IMPACT |
|-----------------------|--|-----------------|
| | <p>to the onset of site disturbance. The inspections shall be conducted by the Approved Biologist(s), as defined and designated by USFWS and CDFG, and shall provide 100 percent coverage of the project disturbance areas. Tortoise occupancy of those burrows within the area of potential effect shall be determined by the Approved Biologist(s), as defined and designated by USFWS and CDFG. Occupied desert tortoise burrows shall be avoided.</p> <p>B-3: Installation of the chain-link tortoise-proof fence shall be monitored full time by an authorized and/or Approved Biologist(s), as defined and designated by USFWS and CDFG.</p> <p>B-4: After the chain-link tortoise-proof fence is installed, the Approved Biologist(s) shall conduct a 100 percent coverage survey within the fence to ensure that no desert tortoises have been trapped within the fenced area. If a tortoise is found within the fence then the Approved Biologist(s) shall monitor its activities and determine if it can exit the area on its own. If it cannot, then the fencing shall be removed/moved to allow the desert tortoise to move out of the area. Once the desert tortoise has moved out of the area, the fence shall be reinstalled.</p> | |

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| | <p>B-5: After the chain-link tortoise-proof fence is installed, the fence shall be monitored at least weekly by designated personnel to ensure that there are no breaks in the fence or other means by which tortoises could enter the area.</p> <p>B-6: Any desert tortoise burrow located within 100 feet of any construction activities shall be clearly marked by the Approved Biologist and shall be carefully monitored to ensure that the desert tortoise and its burrow are not taken. If the Approved Biologist(s) determines that this monitoring effort is insufficient to protect the desert tortoise, additional temporary fencing shall be placed between the burrow and the construction area in a manner that will direct the desert tortoise away from harm's way. The fence shall be installed by the contractor but under the direction of the Approved Biologist.</p> <p>B-7: Trenching and construction of the pipeline from Well 35 to the existing pipeline in Bowman Road that is located outside of the chain-link tortoise-proof fence shall be monitored full time by an Authorized and/or Approved Biologist, as defined and designated by USFWS and CDFG.</p> | |

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| | <p>B-8: The Approved Biologist(s) shall maintain a log during each monitoring visit that includes a record of all desert tortoises that are encountered. The information collected shall include the locations of each occurrence, the general condition and health of each individual, diagnostic markings, and any actions undertaken. A post-construction compliance report shall be provided to the CDFG Palmdale office within 90 calendar days following project completion. The report shall document the effectiveness of the mitigation measures. The report will make recommendations for modifying or refining the above conditions to enhance desert tortoise protection. Unless otherwise determined, the CDFG regional representative shall be Ms. Rebecca Jones, Environmental Scientist, 36431 41st Street East, Palmdale, CA 93552. (661) 285-5867.</p> <p>B-9: Construction and maintenance vehicles shall not exceed a speed of 25 miles per hour on the site. Speed limit signs shall be installed along entrance roads.</p> <p>B-10: Project personnel shall carefully check under parked vehicles or equipment located outside of the tortoise-proof fence for desert tortoises before moving them. Desert tortoises found within the parking, traffic or construction areas outside of the fenced area</p> | |

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| | <p>shall be monitored until they move out of the area on their own.</p> <p>B-11: Upon discovery of a desert tortoise in a work area, all work in that area shall stop until the desert tortoise moves out of the area on its own.</p> <p>B-12: Open trenches, auger holes, or other excavations outside of the fenced area that may act as pitfall traps shall be inspected prior to working in or around the excavation and prior to backfilling. Other excavations outside of the fenced area that remain open overnight shall be covered to prevent them from becoming pitfall traps. Any animals found within the excavations shall be relocated by the Approved Biologist(s).</p> <p>B-13: All material areas, equipment storage areas, construction shacks, or other facilities related to the construction project must be within the fenced area. All construction activities shall be confined within the fenced area with exception of the construction of the pipeline from the fenceline to the connection in Bowman Road.</p> <p>B-14: If, in any event, a desert tortoise is injured as a result of project related activities during construction, it shall be immediately taken (by anyone or the Approved Biologist if</p> | |

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| | <p>present) to a veterinarian clinic with desert tortoise expertise. The veterinarian clinic in the vicinity is the VCA Crestwood Animal Hospital, 1131 Inyokern Road, Ridgecrest. Any veterinarian bills for such injured tortoises shall be paid by the District. The CDFG and USFWS shall be notified so they can determine the final disposition of the animal, if the injured tortoise recovers. Notification to the CDFG and the USFWS shall occur in writing, within five (5) calendar days of the incident. Notification shall include the date, time, location and circumstances of the incident.</p> <p>B-15: If a tortoise is killed by project related activities during construction, or if a tortoise is otherwise found dead in the construction area, the CDFG and the USFWS shall be notified immediately and construction shall stop until otherwise notified by the CDFG and USFWS. A written report shall be sent to the CDFG and the USFWS within five (5) calendar days. The report will include the date, time of the finding or incident (if known), location of the carcass and the circumstances (if known). Tortoise remains shall be collected and frozen as soon as possible. The CDFG and/or USFWS shall be contacted as to the ultimate disposition of the remains.</p> <p>B-16: No firearms or pets shall be allowed at the work area. Firearms carried by authorized</p> | |

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| | <p>security and law enforcement personnel are exempt from this term and condition.</p> <p>B-17: The District shall notify the CDFG and USFWS fourteen (14) days before initiating ground-disturbing activities.</p> <p>B-18: The District shall allow the CDFG and USFWS representatives access to the project site, subject to such reasonable restrictions at the District's requests.</p> <p>B-19: A litter control program shall be instituted. The program includes the direction to all workers to eliminate food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area and to maintain covered trash containers that are regularly removed from the project site.</p> | |
| <p>Impacts to Special Status Species. Based on the field surveys and habitat assessment, none of the following special status species reported from the region would be adversely affected by the Proposed Project: osprey, sharp-shinned hawk, prairie falcon, LeConte's thrasher, loggerhead shrike, and American badger. As such, no significant impacts are expected.</p> | <p>None required.</p> | <p>Less than significant.</p> |

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| <p>Impacts to Burrowing Owls. Burrowing owls have been observed at five locations between 830 and 3,300 feet of the proposed Well 35 site during surveys conducted in 2003, 2007, and 2010 but not directly on the project site. However, burrowing owls could move on to the site prior to construction. Direct impacts to burrowing owls and burrows could occur by grading and excavation activities associated with the Proposed Project. Indirect impacts could also occur from the removal of as much as 1.5 acres of burrowing and foraging habitat in the proposed Well 35 site. These direct and indirect impacts would be considered significant but mitigable.</p> | <p>B-20: Vegetation clearance and grading activities shall occur outside of the nesting season for burrowing owls (February 1 to August 31). In addition, focused surveys for burrowing owls shall be conducted prior to ground-disturbing activities at the well 35 site and any owls found shall be passively relocated outside of the nesting season according to approved protocols, such as the 1993 Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines and in coordination with CDFG.</p> | <p>Less than significant.</p> |
| <p>Impacts to Mohave Ground Squirrel. The Mohave ground squirrel habitat assessment completed for the Proposed Project concluded that all vegetated portions of Well 35 are comprised of suitable, potentially-occupied Mohave ground squirrel habitat. Direct impacts to this species could occur from the removal of individuals and/or burrows during vegetation removal, excavation, and grading activities associated with the construction of proposed Well 35. Indirect impacts to this species would occur from the removal of approximately 1.5 acres of burrowing and foraging habitat. These impacts would be considered significant but mitigable.</p> | <p>B-21: An Incidental Take Permit under Section 2081 of the California Fish and Game Code shall be required for the Mohave ground squirrel prior to ground-disturbing activities at the well 35 site. Mitigation required for this species at the project site shall be determined during the permit process. If possible, IWWWD shall amend an existing permit to authorize incidental take. IWWWD has already established a 120-acre mitigation bank that could be used for compensation. The Proposed Project would result in the loss of about 1.5 acres of potential Mohave ground squirrel habitat from construction of proposed Well 35, the loss of which is likely to be compensated for by credits in the existing mitigation bank.</p> | <p>Less than significant.</p> |

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| <p>Impacts to Sensitive Habitats. The USGS 7.5 minute Inyokern and Inyokern SE quadrangles depict intermittent blueline streams to the east and southeast and Little Dixie Wash to the west and northwest. Neither of these designated streams approach the proposed Well 35 site. Given the absence of jurisdictional waters on the project site no impacts to jurisdictional waters would occur.</p> | None required. | No impacts would occur. |
| CULTURAL AND PALEONTOLOGIC RESOURCES | | |
| <p>Historical Resources. One historic archaeological site (IWW-001) was identified in the Proposed Project area, which may be disturbed during the construction of proposed Well 35. IWW-001 was evaluated and is not eligible for the CRHR. Therefore, the impacts to Site IWW-001 from the Proposed Project would be less than significant, and no mitigation measures are required for this site.</p> | None required. | Less than significant. |
| <p>Prehistoric Sites. Because no prehistoric sites were found within the Proposed Project area and only three isolated artifacts have been recorded within one mile of the Proposed Project Areas, the potential for the Proposed Project area to contain intact buried prehistoric archaeological deposits is considered low. Any historic archaeological sites in this area would likely be visible on the surface and only one, IWW-001, was found. Thus, the potential for buried historical archaeological deposits is also low. However, if unknown, buried archaeological deposits are encountered during construction, impacts to them would be potentially significant without</p> | <p>CR-1: In the event that archaeological materials are encountered during ground-disturbing construction activities, these activities must be suspended in the vicinity of the find until the deposits are recorded and evaluated by a qualified archaeologist. If evaluated and determined eligible, the archaeological site must be avoided and preserved. If this is not feasible, an archaeological data recovery program shall be completed. The data recovery report will be submitted to the Indian Wells Valley Water District and filed with the Southern San</p> | Less than significant. |

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| mitigation. | <p>Joaquin Valley Archaeological Information Center at CSU Bakersfield.</p> <p>If human remains of any kind are found during construction activities, all activities must cease immediately and the Kern County Coroner must be notified, as required by state law (Section 7050.5 of the Health and Safety Code). If the coroner determines the remains to be of Native American origin, he or she will notify the Native American Heritage Commission (NAHC). The NAHC will then identify the most likely descendant(s) (MLD) to be consulted regarding treatment and/or reburial of the remains (Section 5097.98 of the Public Resources Code). Work can continue once the MLD's recommendations have been implemented or the remains have been reburied by the landowner if no agreement can be reached with the MLD (Section 5097.98 of the Public Resources Code).</p> | |
| <p><i>Native American Resources.</i> The search of the Sacred Lands File did not indicate the presence of any Native American cultural resources within or near any of the project areas. To date, no Native American resources have been identified by any of the nine Native American Tribes contacted about the Proposed Project. As a result, impacts to Native American resources are not anticipated, and no mitigation measures are required.</p> | None required. | No impacts. |

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| <p>Improvements to existing Wells 18 and 34 would not include any new ground-disturbing activity and no impacts to prehistoric or historic archaeological resources or Native American resources is anticipated. No mitigation measures are required.</p> | <p>None required.</p> | <p>No impact.</p> |
| <p><i>Paleontological Resources.</i> Surface grading and shallow excavations in younger Quaternary Alluvium is unlikely to encounter any significant vertebrate fossils (McLeod 2011). Vegetation clearing and grading of the Well 35 site is not likely to impact significant paleontological resources.</p> <p>Deeper excavations that extend below the uppermost sediments of the project area into underlying older deposits may encounter paleontological resources (McLeod 2011). The trenching for the pipeline from Well 35 to the existing pipeline in Bowman Road could result in a significant impact to paleontological resources. Likewise the drilling of Well 35 could also result in impacts to paleontological resources; however, impacts from well drilling are unlikely given the relatively small diameter of the well. Impacts to paleontological resources from the proposed pipeline trenching can be mitigated as described below. Because impacts from the drilling of Well 35 are not expected, no mitigation measures are required for the well.</p> <p>Improvements to existing wells 18 and 34 would not include any new ground-disturbing activity and no impacts to paleontological resources are anticipated.</p> | <p>CR-2: Monitoring during the trenching for the pipeline from Well 35 to the existing pipeline in Bowman Road shall be conducted by a qualified vertebrate paleontologist. The monitor shall be equipped to recover fossils and sediment samples during excavation, and shall have the authority to temporarily halt or divert equipment to allow for recovery of large or numerous fossils.</p> <p>If any fossils are recovered, they shall be analyzed to a point of identification and curated at an established accredited museum repository with permanent retrievable paleontologic storage. A technical report of findings shall be prepared with an appended itemized inventory of identified specimens and submitted with the recovered specimens to the curation facility.</p> | <p>Less than significant.</p> |

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| GEOLOGY AND SOILS | | |
| <p><i>Soil Erosion or Loss of Topsoil.</i> The Proposed Project includes several activities that have the potential to cause erosion and remove topsoil from disturbed areas during the construction of well 35. These activities include grading of drill sites, excavation of percolation ponds, excavation of pipeline trenches, stockpiling of excavated soils, and other actions. Disturbed soils, modified surface grades, soil stockpiles, and other disturbed areas have the potential to result in soil erosion or the loss of topsoil during a major rainfall event. Unprotected soils may also be lost during major wind storms and similar events. As discussed in Section 3.2 Air Quality, the best management practices from EKAPCD's Rule 402 would be applied. This is a potentially significant impact, which would be reduced to a less than significant impact with mitigation.</p> | <p>G-1: Proper construction, soil management, and storm water protection practices will prevent soil erosion and the loss of topsoil. Construction specifications will identify areas where soil excavation, grading, stockpiling, backfilling, or other disturbance may occur. The construction specifications will identify appropriate construction and soil management practices, such as stockpiling soils adjacent to the construction area, minimizing areas of disturbance, and appropriate slopes for excavations and backfill. The construction specifications will also identify the proper methods for protection of disturbed or exposed soils to prevent erosion.</p> <p>Prevention of soil erosion and loss of topsoil due to rainfall and storm water will be addressed through the preparation of a Storm Water Pollution Prevention Plan (SWPPP). IWWWD will file a Notice of Intent to comply with the general storm water permit for construction activities with the State Water Resources Control Board. The SWPPP will subsequently be prepared to identify site activities and conditions that may result in erosion or loss of topsoil due to storm water runoff. Appropriate best management practices (BMPs) for protection of disturbed areas and stockpiled soil will be identified.</p> | <p>Less than significant.</p> |

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| | <p>The SWPPP will also identify the applicable monitoring parameters and frequencies to be implemented in the case of storm events that occur during the construction period. The SWPPP will be submitted to the Lahontan Regional Water Quality Control Board and a copy must be maintained onsite during construction. The construction specifications will also include best management practices to prevent wind erosion, as specified by EKAPCD's Rule 402.</p> <p>The construction specifications will also address proper backfilling, compaction, and restoration requirements to prevent erosion of restored areas after construction is completed.</p> | |
| GREENHOUSE GAS EMISSIONS | | |
| <p><i>Construction Emissions.</i> Global climate change impacts associated with the Proposed Project were evaluated to assess whether the project would result in a significant impact. The main impact is associated with construction activities for the Proposed Project. Emissions of GHGs were also evaluated for energy use and inspection and maintenance activities. Based on the evaluation, the project would not:</p> <ul style="list-style-type: none"> ◆ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. ◆ Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | None required. | Less than significant. |

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| <p><i>Operational Emissions.</i> The main contributor to emissions from the project is energy use from pumping. Emissions would be below the proposed interim threshold of 10,000 metric tons, and impacts would be less than significant.</p> | None required. | Less than significant. |
| HAZARDS AND HAZARDOUS MATERIALS | | |
| <p><i>Construction and Well Development.</i> Some hazardous materials, such as diesel fuel, would be used at the site during well construction and development. The transport of hazardous materials is regulated by the State and the transport of such materials to the site would be in compliance with all State regulations. These materials would only be present during construction and well development and would be removed upon completion of the project. A less than significant impact would occur.</p> <p>During drilling and well testing, groundwater produced from new Well 35 would be discharged to the ground surface to allow it to percolate back into the subsurface. The new well would be developed and subsequently tested for approximately two weeks. The water discharged from the development and testing of the well would be percolated into the ground locally, either by discharge to an on-site percolation pond or by sprinklers. Based on existing water quality data, the groundwater meets applicable water quality standards such as Maximum Contaminant Levels (MCLs) and thus the discharge would comply with the <i>Water Quality Control Plan for the Lahontan Region, North and South Basins,</i></p> | None required. | Less than significant. |

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| commonly referred to as the Basin Plan (RWQCB 2005). A less than significant impact would occur. | | |
| <i>Disinfection/Treatment Facilities.</i> New Well 35 would require chlorination facilities (dosing pump and sodium hypochlorite [liquid chlorine] solution stored in a 200-gallon polyethylene drum with secondary containment) and such additional treatment facilities that may be indicated by water quality testing performed at the time of drilling (e.g., for the removal of arsenic). All materials would be properly contained, handled, and transported in compliance with all applicable regulations. Prior to operation, the well would be disinfected in accordance with the District's standard specifications. Disinfection water would be dechlorinated prior to being discharged on the site in the same manner as the development and testing water. The water would be percolated into the ground locally, either by discharge to an on-site percolation pond or by sprinklers. The discharged water would not contain any residual chlorine and, thus, would be in compliance with the Basin Plan (RWQCB 2005). A less than significant impact would occur. | None required. | Less than significant. |
| <i>Discharge Pond.</i> The discharge pond would be approximately one-half acre in size and would be constructed adjacent to Well 35. It would be approximately three to six feet deep. The entire well site would be enclosed by a chain-link, tortoise-proof fence with three strands of barbed wire or razor wire. This would reduce potential falling and drowning hazards to a level of less than significant. | None required. | Less than significant. |

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| <p><i>Accidental Spills.</i> The IWWWD has an Emergency Response Plan in place to respond to accident conditions involving the release of hazardous materials into the environment, such as sodium hypochlorite. The ERP includes public notification requirements and emergency response protocols in the case of an accidental spill. The IWWWD would use licensed contractors to provide spill clean-up services should such services be required. As such, impacts would be less than significant. No impacts would occur.</p> | None required. | Less than significant. |
| HYDROLOGY AND WATER QUALITY | | |
| <p><i>Water Quality Standards or Waste Discharge Requirements.</i> During drilling and well testing, groundwater produced from new Well 35 would be discharged to the ground surface to allow it to percolate back into the subsurface. The new well would be developed and subsequently tested for approximately two weeks. The water discharged from the development and testing of the wells would be percolated into the ground locally, either by discharge to an on-site percolation pond or by sprinklers. Based on existing water-quality data, the groundwater meets applicable water quality standards such as MCLs and thus the discharge would comply with the <i>Water Quality Control Plan for the Lahontan Region, North and South Basins</i>, commonly referred to as the Basin Plan.</p> <p>The new well would require chlorination facilities with secondary containment and such additional treatment</p> | None required. | Less than significant. |

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| <p>facilities that may be indicated by water quality testing performed at the time of drilling (e.g. for the removal of arsenic). Prior to operation, the wells would be disinfected in accordance with the District's standard specifications. Disinfection water would be dechlorinated prior to being discharged on the site in the same manner as the development and testing water. The discharged water would not contain any residual chlorine and, thus, would be in compliance with the Basin Plan.</p> <p>These actions described above would not result in any violations of water quality standards or waste discharge requirements. This is a less than significant impact.</p> | | |
| <p><i>Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge.</i> Phase 1 would not result in an increase in annual pumping by the District. It may, however, result in some variations in the amount of water pumped from different wells and different areas of the valley. For example, due to the increased pumping rate in Wells 18 and 34, when these wells are operated, more groundwater would be pumped from the southwest well field area of the valley over a given time period than can currently be pumped from the same wells. Thus, the amount of drawdown in the water table in the vicinity of Wells 18 and 34 would be greater than currently occurs when these wells are pumped. At the same time, pumping from other IWWWD wells in other areas, such as the intermediate well field or</p> | <p>H-1: To evaluate whether the Proposed Project will have an incremental impact on individual wells, a mitigation monitoring program will be established. This mitigation monitoring program shall be in place for the life of Well 35. The mitigation monitoring program must be prepared by a California-licensed Certified Hydrogeologist or California-licensed Professional Engineer experienced with groundwater monitoring programs and procedures. A detailed monitoring plan will be prepared that specifies field measurement procedures, the well locations to be included in the program, data collection and documentation procedures, and data analysis methods. The monitoring program will include</p> | <p>Less than significant.</p> |

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| <p>under the City of Ridgecrest, would decrease when Wells 18 and 34 are operating, resulting in less drawdown in these areas of the valley. These variations, though, are short-term in nature and would only occur when Wells 18 and 34 are operating.</p> <p>The 2011 Layne Hydro model results indicate that, over 10 years, the Proposed Project may result in an additional eight to 10 feet of drawdown occurring in the immediate area of Wells 34 and 35. The area of increased drawdown may extend up to two miles from the southwest well field area with additional drawdowns of up to two feet occurring at the perimeter of this area (Appendix G). Overall, however, Phase 1 would not result in additional net groundwater pumping by IWWVD. Therefore, Phase 1 would not alter the long-term trends in groundwater levels.</p> <p>Phase 2 includes the installation of new Well 35 in the southwest well field area in approximately 2015, based on an anticipated increase in demand of approximately one percent per year. The additional pumping from Well 35 for Phase 2 would result in an increased rate of drawdown locally. Based on the 2011 modeling results, the average rate of water level decline within one-half mile of Well 35 is anticipated to increase by up to 0.5 foot per year, from a rate of approximately 1.6 feet per year to a rate of approximately 2.1 feet per year. The average</p> | <p>a number of perimeter control wells, outside the area of influence of the Proposed Project, to document the baseline rate of water level decline over time. The monitoring program will also include any wells within two miles of new Well 35 for which the owners agree to participate in the program. It should be noted that non-participation in the monitoring program would make it extremely difficult if not impossible to evaluate whether or not the Proposed Project will have an effect on a specific individual well.</p> <p>Water levels will be measured semiannually in each well that is part of the program. The monitoring frequency and timing may be coordinated with monitoring that is currently conducted by KCWA to enhance the overall public knowledge of groundwater conditions in the valley. The monitoring data will also be provided to KCWA for inclusion in its public database of water levels in Indian Wells Valley. To help establish pre-Project conditions, the monitoring program should begin in 2012.</p> <p>Water level data from individual wells will be analyzed semiannually and compared with the data from the perimeter control wells. The data will be evaluated to determine whether the rate of water level decline in a well within</p> | |

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| <p>rate of water level decline within 1.5 miles of Well 35 is anticipated to increase by 0.2 foot per year, from a rate of approximately 1.6 feet per year to a rate of approximately 1.8 feet per year.</p> <p>The existing water level declines in the vicinity of the Proposed Project already have the potential to affect the production rate of pre-existing wells, such that these wells may not support existing land uses in the future. This effect, however, is primarily a function of the total depth of the wells. Based on the drilling data from the 1993 U.S. Bureau of Reclamation Report high-quality groundwater exists to depths of at least 2,000 ft bgs in the area of the Proposed Project. This is a potentially significant impact that can be mitigated.</p> | <p>two miles of new Well 35 starts to increase after Phase 2 of the Proposed Project is implemented relative to the baseline rate in the perimeter control wells. If a rate of decline greater than the baseline rate develops in any well in the monitoring program as a result of District activities, then a mitigation program will be developed for that well by IWWWD in cooperation with the well owner. The rate of decline must also be clearly correlated with activity related to the Proposed Project. For example, if increased drawdown is occurring but new Well 35 has not been installed yet, or it is not pumped at a rate, in combination with other southwest well field wells (i.e. Wells 18, 33, and 34), that exceeds current pumping from those areas, then the increased drawdown cannot be attributed to the Proposed Project.</p> <p>The mitigation program will include an assessment of the time at which the water level decline may reduce the production rate of the well, such that the wells will not support land uses that existed at the time this EIR was certified. The mitigation must then be implemented prior to this determined water level decline, so that the well owner does not experience a loss of pre-Project land use. Potential mitigation options that may be considered include:</p> | |

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| | <ul style="list-style-type: none"> – Deepening an existing well; – Installing a different pump in an existing well; – Drilling a deeper well; or – Providing a hookup to IWWWD or another cooperative water system in the area. <p>The monitoring will be conducted by IWWWD. The mitigation options, if needed, may be installed by IWWWD or they may be funded by IWWWD and installed by the owner.</p> <p>Current depth to groundwater in the area of the Proposed Project is approximately 400 ft bgs. Drilling data from the 1993 U.S. Bureau of Reclamation study demonstrates that good quality groundwater is present to depths of at least 2,000 ft bgs in the Project vicinity. Even at a rate of decline of 2.6 feet per year, this mitigation approach will be effective for over 600 years. Thus, this mitigation measure will reduce potential impacts to groundwater levels to less than significant.</p> | |
| <p><i>Water Quality.</i> Existing groundwater pumping throughout the basin, unrelated to the Proposed Project, has created groundwater depressions such that groundwater elevations in these areas are lower than those in surrounding areas. It is assumed,</p> | <p>None required.</p> | <p>No residual project-level impacts would occur with mitigation.</p> <p>Significant and</p> |

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| <p>therefore, that water levels dropping throughout the basin has caused the co-mingling of good quality and lesser-quality water. The Proposed Project would contribute to the pumping that has created the groundwater depressions and thus would contribute to the change in water quality. The increased pumping from the Proposed Project, however, is a very small fraction of the total pumping from the basin that has created the groundwater depressions. Thus, the contribution of the Proposed Project to the change in groundwater quality is miniscule and cannot be quantified, measured, or monitored.</p> | | <p>unavoidable cumulative impacts to groundwater quality would occur. These impacts would occur in the absence of the Proposed Project and it is not possible to quantify, measure, or monitor the potential nominal contribution from the Proposed Project. Therefore, this potential impact is unmitigatable and would persist with or without the Proposed Project. Additional discussion of this cumulative impact is in Sections 5.1.</p> |
| NOISE | | |
| <p>Construction Noise. Construction activities are not expected to increase the L_{dn} at the nearest sensitive receptors to a level greater than the 65 dB threshold. Therefore, the impact would be less than significant. The only construction activity that would occur during the nighttime hours (9:00 p.m. to 6:00 a.m. weekdays, and 9:00 a.m. to 8:00 a.m. weekends) is associated with the Phase 2 drilling at new Well 35. However, because the nearest residential property is well over 1,000 feet away there is no significant impact.</p> | <p>No mitigation measures are required.</p> | <p>Less than significant.</p> |

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| <p><i>Construction Vibration.</i> There would be no significant vibration impacts associated with the construction of Phases 1 and 2 of the Proposed Project because the vibration velocity level (L_v) would not exceed 72 VdB and the PPV would not exceed 0.20 in/s at the nearest sensitive receptor.</p> | None required. | Less than significant. |
| <p><i>Operational Noise.</i> Operation of the Proposed Project would not increase the estimated exterior L_{dn} above 65 dB at the nearest noise-sensitive receivers. Therefore, there would be no significant noise impacts related to operation of the Proposed Project.</p> | None required. | Less than significant. |

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