

**WATER SUPPLY IMPROVEMENT PROJECT
FINAL ENVIRONMENTAL IMPACT REPORT**

Letter 24

12/6/2011

To: Mr Tom Mulvihill- General Manager
Indian Wells Valley Water District
PO Box 1329
Ridgecrest, CA, 93555

From: Don Decker
625 W. Ward Ave
Ridgecrest, CA, 93555

received
12/09/11

Subj: Comments on the Indian Wells Valley Water District Water Supply Improvement Project Draft Environmental Impact Report dated October 25, 2011.

- Ref: 1) Bureau of Reclamation Final Report dated December 1993
2) 1997 Indian Wells Valley Water District General Plan adopted April 23, 1998
3) Mitigated Negative Declaration for a Water Supply Improvement project dated July 2007
4) Comment letter from Kern County Planning dated Aug 7, 2007 concerning a Mitigated Negative Declaration for Indian Wells Valley Water District Water Supply Improvement Project
5) Brown and Caldwell IWV Groundwater Flow Model dated 3/23/2009
6) Layne Christensen Water Supply Improvement Project Final report dated April 16, 2010
7) Indian Wells Valley Water District Urban Water Management Plan dated May 2011
8) Kern County IWV well monitoring program and well data
9) AB303 Final Report– March 3, 2008 Installation and Implementation of a Comprehensive Groundwater Monitoring Program for the Indian Wells Valley, California
10) MOU letter between the US Navy and the IWVWD dated 1991 concerning the use of a water supply intertie
11) MOU letter between the North American Chemical Company (predecessor to Searles' Valley Minerals) and the IWVWD dated 1991 concerning the use of a water supply intertie
12) Indian Wells Valley Water District Urban Water plan 2011
13) Indian Wells Valley Water District Water well production sheets for August 2011

Dear Mr. Mulvihill:

This comment letter is being written to provide constructive criticism of the completeness, accuracy and function of the subject Indian Wells Valley Water District (WD) Water Supply Improvement Project (WSIP) Draft Environmental Impact Report dated October 25, 2011. In as much as the 2011 WSIP is nearly identical to the WSIP proposed by the IWVWD in 2007 (ref 2), I draw your attention to the comment letter written by the Kern County Planning Department (KCPD) (ref 4). The County letter provides a summary of many of the serious omissions, misrepresentations and environmental impact issues with that earlier WSIP. By direct comparison of these projects, the legal aspects and environmental impact issues of the *current* 2011 WSIP are well described in that letter as well. Since most of my comments made in my earlier 2011 WSIP Initial Study (IS) letter were ignored, I will repeat some of them here along with many additional criticisms of the actual project impact descriptions, mitigation proposed and the unfortunate absence of any real consideration of project alternatives.

I made the following specific comments in my IS letter and they are even more applicable to the DEIR. One must assume that the WD thinks the 2011 WSIP can somehow overcome the

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environmental difficulties of the 2007 version. That is, the WD is offering this Project in good faith. However, as I will point out, it is impossible to reconcile the notion of a spirit of a good faith with the multitude of really serious errors, omissions, contradictions and misrepresentations present in the DEIR under review. **The DEIR falls far short of a legitimate environmental review and is every bit as flawed as the 2007 Mitigated Negative Declaration version.** It is well to remind everyone that the 2007 WSIP was generally repudiated as unsatisfactory by the public, the County and ultimately by the WD Board itself.

**24-1
Continued**

The DEIR under comment has been substantially scaled back from the IS version to reflect a more realistic population growth projection. However, the DEIR still does not take into account the current and likely future conservation effects on water demand. The project fails to properly assess viable alternatives including an existing intertie with the Navy. **On close inspection, the project is actually completely unnecessary.**

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The most serious criticism of the project is that the impact analysis completely ignores the detailed consequences of full production of the project wells and the cumulative impacts of new production on existing wells. The impact modeling is based on a groundwater model with known flaws. No evidence of professional model verification/validation is presented. The project does not tap into any new water supply- it just increases pumping rates and quantities in our already overdrafted basin. This is the fundamental issue. **This project simply perpetuates the attitudes and actions that have gotten us into our present untenable condition.** We are pumping more water from the aquifer than nature is replacing from precipitation. Recent studies confirm we are pumping (i.e., mining) “fossil” water from nearly every well in the Valley (ref 9). The DEIR does not discuss this issue.

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There are many fundamental issues and flaws with this project that are not mentioned or are skimmed over in the DEIR. These areas are summarized in the 5 items below.

1. The first being that under California groundwater law, a pumper that has only an appropriative right (the WD) has only a right to *surplus* water. The term “surplus” means water in excess of that which is necessary to meet the needs of all overlying landowners. In an overdrafted basin, by definition, there is no surplus water (see ref 4, KCPD letter p 5). The IWV groundwater basin has been in overdraft for at least 50 years (see ref 5). **The word “overdraft” appears in the DEIR only once** (Introduction p 1-6). The WSIP project description, impact assessment, and mitigation almost entirely ignores this fundamental issue with the IWV water supply. The WSIP as proposed by the IWVWD is not a project that is in any sense pursuing new water. The “improvement” project as described would *immediately* and irreversibly damage the interests of nearby overlying water right well owners and over time damage the existing prescriptive water rights holders including the Inyokern Community Services District (CSD), the Navy and Searles’ Valley Minerals. **Damage from a new project must be considered as having occurred at the occasion of any addition to the already serious rate of decline.** Damage is inflicted by greater pumping costs and the inexorable declines in water quality as water levels are lowered. **Actionable damage occurs long before wells are dried out completely. The very idea that there is a damage threshold is a convenient invention to draw attention away from the ongoing damage.**

24-4

The IWVWD has a prescriptive right established by existing extraction. However, it has no *appropriative* right to additional water. **There is apparently an assumption made in the DEIR that is not discussed, that the overlying water rights owners are going to not defend their rights.** There is no mention at all of any water rights issues in the DEIR and the implications thereto. This casual approach by the IWVWD belies the mission statement made on their web page

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that they strive “to deliver the highest quality water at the best possible price while continuing to serve as *respectful stewards of the environment*”. The actions that the WD proposes will seriously harm the interest of not only nearby well owners but their own long- term interests as well. **This is not the action and behavior of a responsible public agency.**

**24-4
Continued**

2. Since the primary basis (“redundancy”) for the current plan is substantially the same as the 2007 WSIP, and no high demand day failures to provide water over the past four years have occurred, why would the WD need to build up an additional capacity now? Experience teaches us that the WD capacity now in place is acceptable. Especially so since demand is down significantly as a result of conservation. The WD stated need for a 20% redundancy on days of peak demand is already in place even considering historic demand going back as far as 2005. The WSIP does not account for the beneficial effects of current and future conservation nor does it more than mention the existing interties with the Navy and Searles’ Valley Minerals set up in 1991 for the *exact* purpose of providing emergency and redundancy in the WD water supplies..
3. **Attempting to use a model that does not explicitly account for all impact effects, including cumulative effects, is a serious breach of CEQA law and undermines the entire basis for the project.** Lack of serious consideration of alternative projects is likewise a serious breach. As is pointed out in the KCPD letter (p3) CEQA case law has said: “A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal’s benefit against its environmental cost, consider mitigation measures, and assess the advantage of terminating the proposal..and weigh other alternatives in the balance.” The reference is given in the KCPD letter.
4. In assessing this project it must be assumed that the *full* capacity of all wells and well upgrades would be employed. The well impacts shown in the Layne Christensen (LC) Report are not indicative of the full impacts that could be expected at all. The LC scenarios are showing only the impacts from the project itself with wells operating at arbitrarily reduced levels. The actual impacts are the additive consequences of the existing serious water level declines compounded by the new declines produced by the WSIP wells (see sec 5.1 below for further comment).

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The IWV aquifer is in an ever more serious *accelerating* decline (ref 8). Attempting to use an environmental assessment made today under such dynamic conditions for project elements to be initiated even a few years distant is *seriously misleading*. The variability of water quality with depth is not effectively addressed in the DEIR. When the WD replaced well 9 in the Intermediate area with a new well (9A), 100 ft away, it was totally unexpected that 9A would have high arsenic and would have to be treated. This is a stunning example of water quality variation with location/depth even in high quality water areas.

24-6

5. **The LC scenario modeling is based on a groundwater flow model (GFM) that is known to be inaccurate in the very area of greatest interest- the SW area of the IWV.** This inaccuracy results in a non-conservative estimation of aquifer response to pumping in all of the scenarios presented. **The GFM has not been verified or validated in any professional sense and does not provide an acceptable basis for model scenario evaluation under CEQA.** The very clear admonition in the CEQA case law quoted above applies with full force to the present DEIR and its omissions and misrepresentations.

Specific comments:

Here are my specific comments/criticisms by section. Some of the general comments just offered will

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be expanded and further clarified.

ES.1 Introduction I will point out that a legitimate EIR does more than just identify the three areas listed but must actually provide detailed and accurate analysis of the issues of the project. This DEIR is severely deficient in many areas of importance. **The fact that the IS has overlooked many areas of vital concern does not provide an excuse to continue with the incomplete project description into the DEIR. The use of the word “improvement” in the context of a project that has as its fundamental purpose to mine water from an already seriously overdrafted basin is not only an incorrect use of the word but only serves to mislead. It is further evidence in this DEIR of the “distortion” prohibited in CEQA case law cited above (ref 4).** The rationale for the project is substantially based on the 1997 WD General Plan which is seriously outdated. As an example of the ludicrous aspects of the “planning estimates” contained in the document, read the section on the top of p 4-21. “The IWVWD service area population was estimated to be approximately 36,00 people in 2007. The population of the IWVWD's service area may increase from about 36,00 to as many as 51,800 by 2015, remain the same or decrease to as few as 24,200”. **With quality planning estimates like that the WD is sure to get it right.** The 2011 Urban Water management Plan (ref 12) also has very questionable planning aspects that indicate a mindset that appears to be stuck in the past- why else would the document indicate that no new water would be needed until 2035? Really? We are in serious overdraft now.

ES.2 Project location The description of the proposed use of 16 inch interconnecting pipelines belies the claim that these wells would be used for peaking or redundancy.

ES.3.1 Project background As stated in sec ES.1. **the IWVWD general Plan from 1997 is seriously outdated and is based at best on an incomplete and misleading description of the state of the IWV aquifer (ref 2).** It was written based on a selection of the most optimistic scenarios from the 1993 Bureau of Reclamation (BoR) Report (ref 1). The need for peaking and emergency outages beyond ordinary operating conditions cannot be denied. However, as will be shown in detail later, the WD already is in possession of a peaking redundancy that exceeds their claimed 20% need. There is no discussion or accounting for the effects of IWVWD conservation that in the past year have resulted in a 17 % decline in demand. This decline in demand has actually forced the IWVWD to recently effect a reduction of 25% of its workforce. **Why is there no conservation discussion and correction in the demand numbers in the DEIR accordingly? The estimated one percent in population growth will likely be totally obscured in the conservation savings that will continue.** Making overestimates of demand is every bit as serious as underestimating the same. More evidence here of a failure to follow CEQA guidelines in accurately describing the project.

The discussion of a 20% system redundancy for emergency use does not correctly recognize the existing interties with the Navy and Searles' Valley Minerals that have been in place for 20 years for the exact needs stated in the WSIP. This fact is in *complete contradiction* to the claim made in the DEIR in this section. **The WD is misrepresenting historical and accurately documented agreements by willfully publishing these false statements.** These connections are dismissed in the DEIR with the same false claims made in the IS that the interties are only for “catastrophic interruptions of water supplies such as earthquakes ... not for well failures”. **Apparently the WD has not read its own agreements with its water partners or thinks the public can't read them either.** The agreement that was made with North American Chemical (a predecessor to SVM) in 1991 states explicitly that the intertie is for the purpose of providing water for “backup in the event of well failure or other emergency”. In addition, the WD is allowed to take water from the intertie for its “summertime peak demands”. The intertie with the Navy was tested in 1991 and found to be capable

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of delivering in excess of 3,000 gallons per minute in either direction. This amounts to the running capacity of 2 ½ standard WD wells. Although not stated the capacity of the SVM intertie is similar.

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Continued**

To summarize the intertie purpose and capability falsification in the DEIR: The DEIR has not properly described and assessed the capabilities of the Navy and SVM interties. More importantly, the WD itself has failed to properly use these capabilities. In the 20 years since these facilities were built, the WD/Navy/SVM appear to have seldom turned them on even as part of the exercises on Emergency Preparedness Day. Claiming that additional capacity is needed now for the same purposes as the existing interties is a serious breach of the primary CEQA requirement to provide an accurate description of the project (including project benefits). What benefits accrue to a project that duplicates an existing redundancy? It is essential that the intertie capability be accurately recognized. This is a red flag for a “NO PROJECT” determination by the Board.

24-8

The 20 % number itself is an invention. A likely failure would involve only one well, which is a loss of about 10%. Failures involving the arsenic treatment plants can be worked through by simply supplying untreated water just as has been done in the lead up to their completion. No wells have to be taken off line. With backup generators at all wells, the failure mode now is likely mechanical and is a lot less likely than before the generators were available. In any case, in an emergency there is nothing that requires the WD to function at full performance. **The 20% number is based on a “nice to have” capability. Whether or not the 20% is actually needed, it is important to realize that the WD has functioned without flaw for the past four years without new capacity even as the “serious need” for additional capacity was stated in the 2007 WSIP went unmet. This point cannot be emphasized strongly enough.**

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ES 3.1.1 2007 WSIP The description of the 2007 Mitigated Negative Declaration activity in this section couldn't be more inaccurate. The WD actually attempted to slip this project under the review of the public and the County. The KCPD letter referenced (ref 4) contains a scathing admonition against the CEQA failure inherent in the WD process. **The present WD EIR effort is a direct result of the severe embarrassment that the WD took over the previous WSIP.**

ES 3.1.2 2010 Water Model The LC study appears to a useful guide to new well location and design. However, the maps produced showing areas of “good” water and high aquifer transmissibility are superficial. There is virtually no recognition of the variation of these parameters at depth. The AB 303 Report is not referenced in the DEIR at all and is by far the most extensive exploration of the IWV aquifer water quality to date. The electric logs taken during the Bureau of Reclamation (BoR) project in the open well bores immediately after drilling, reveal a far more complicated condition than these maps show. The new data coming from the AB303 studies (ref 9) has been incorporated to only a limited extent in the LC recommendations (ref 6). **The obvious purpose of these maps is an attempt to validate a project that the WD has been pursuing for years.** The current WSIP is virtually identical to the project four years ago including the same areas for the new and modified wells. The previous WSIP attempted to claim minimal impact to the aquifer based on totally erroneous and very limited “modeling”. So now we do the model “right” and end up with exactly the same project in the same place? It is beyond belief that we reach the same project conclusions four years later. **I submit the WD appears to be providing the answers to its consultants ahead of time.**

24-10

As stated earlier, the LC scenario models are flawed by known issues coming from poor calibration the

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calibration of the IWV groundwater flow model (GWFM) (ref 5). Errors in the GWFM are the result of earlier ignorance over the actual productive area of the SW. This aspect is discussed briefly in sec 3.8.1.5 that discusses the sw groundwater barrier. The impact scenario estimates on water levels in wells near the proposed production wells are thus not accurate. The impact will be considerably greater than modeled- especially over time. The lack of documented model verification/validation (in the “best practices” engineering and scientific practice sense) denies the use of the model scenario results in this CEQA evaluation. I will offer more detail on this in Section 2.2.3. **These scenario models also do not take into account any cumulative impacts nor do they show the impact of full production from these wells.** Since there is no limitation on the quantity of water pumped from the wells described in the DEIR, one must assume they will be pumped at full capacity. A totally different project will emerge if the basic scenarios were thus modified.. **The scenarios in the LC study are not realistic even in concept.**

**24-10
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ES.3.1.3 Changes to the WSIP resulting from EIR Scoping **The recognition of the gross errors in population estimates from BRAC projections was a critical first step in scaling this project back from the IS description. However, ignoring the intertie capabilities and the fact that the WD already has its 20% redundancy leaves the appearance that there is still an unmet need for this project. In fact, this project is unnecessary and wasteful of public money. It wasn't needed in 2007 and isn't needed now.**

ES.4. Project Objectives The 20 % redundancy number itself is an *invention* as was stated above. There must be a full and quantitative justification for this value as it strongly drives the project need. Drawing it from the outdated and misleading 1997 General Plan gives further credence to my claim that the WSIP basis is weak or worse. No recognition of the effects of future continued conservation is made in the design of this project. I submit that future projections of conservation savings are no more difficult or subject to more inaccuracy than population changes. The 1 % per year population increases are so small compared to the 17% conservation savings already achieved that the population increase argument for the project is of little consequence. Again, for emphasis, CEQA demands an accurate description of the project. **Spending multi-millions on a project that will by WD estimates produce only 80 ac-ft of additional water each year makes no economic sense whatsoever.** This cannot be the real objective of this project. **Since the WD already can meet its 20% peaking requirements and will have no likely increase in future demands there is every reason to believe that the real purpose of the project has not been disclosed.**

24-11

ES.5.1 Project Timing The timing indicated is not based on demonstrated need. The WD made the same claims of urgency four years ago and has gone through four summers with no increase in production capability and has satisfactorily met its customer's demands throughout. The claim that the WD does not have adequate redundancy is completely false. **The redundancy with the production capability present now in 2011 is about 30 % greater than the peak day production recorded in August. Compared to historic peak production going back to 2005 before conservation was so effective, the peak day redundancy was above 23% for all years since then.**

ES.5.2 Improvements to existing wells. “Improvements” indeed. The idea of increasing capacity of existing wells, in fact, nearly doubling capacity has been tried previously by the WD. Well 8 was effectively *wrecked* by such an experiment in the early 90's. It is a waste of public money to engage in reckless activity. Yes, a well may have the efficiency to be able to support the higher capacity but there is a lot more to the decision to “improve” the well than that. Virtually every ratepayer or taxpayer would agree that **experiments with precious public money are unacceptable. Especially when you have direct evidence in the WD experience to support a more prudent course.**

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ES.5.3 Well Construction and Operation The availability of a 16 inch pipeline belies the notion that these wells are only for peaking or to support modest additional growth. The location of such high capacity wells so close together is a violation of the Cooperative Groundwater Management Group Guidelines that were in place from the start of this group. The WD is setting up serious interference with its own wells and will end up creating a severe pumping depression- a repeat of the Intermediate depression.

**24-12
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ES.6 Environmental Impacts and Mitigation Measures It was pointed out by the undersigned that the preparation of this environmental document does not offer the preparer the privilege of picking and choosing amongst the impacts to drop off the list. The identification of Land Use and Planning as having no environmental issues is false. Check box b) in the IS indicates no project conflict with existing low density residential land use. **Such couldn't be further from the truth.** The water extraction from this project is actually an *exportation* from the surrounding rural area to the urban area of Ridgecrest and vicinity. There is no water supply for these rural areas except from private wells. As the negative impact from large scale WD pumping becomes more serious in time, the viability of the investments made in these rural areas becomes more and more tenuous. **The project conflicts with applicable land use in a potentially catastrophic manner. This was pointed out by this writer at the IS stage and obviously was ignored.**

24-13

ES.6.1 Potentially Significant Impacts that can be Mitigated and ES. 6.3 Unavoidable Significant Impacts The DEIR shifts the concerns over decline in water level impacts to declines in water quality impacts- then it claims quality declines cannot be mitigated! **This obtuse maneuver is apparently an attempt to disguise the real issues with the existing serious overdraft.** The claims that the water quality declines would occur even without this project, is also an attempt to disguise the real issues with this project. The assertion in the DEIR that the change in groundwater quality caused by this project will be "miniscule" is not backed up with anything other than the author's opinion. There is ample evidence that heavy extraction can lead to serious declines in water quality as has been observed in many areas of this valley already. **The issues of water quality declines as water levels decline is given inadequate analysis.** The idea of drilling wells deeper to mitigate for water declines is completely bogus. **The definition of mitigate is "to make less severe". You cannot mitigate for a loss by offering a "solution" of lesser value.**

24-14

ES.8 Project Alternatives This summary only serves to emphasize how hollow the treatment of alternatives is in this document. There is no mention of the intertie or any projects that could actually enhance the WD water supply.

24-15

ES.10 Summary of Environmental Impacts and Mitigation Measures Hydrology and Water Quality subsection Although there may be no additional overall water production during Phase 1, the admission that there may be additional water pumped from the SW well field above that which is currently pumped cannot be simply dismissed as it is summarized in this section. Since there is no regulatory limit whatsoever in the amount of water pumped from any given well one has to assume that the WD intends to fully utilize their new high capacity wells. **The impact scenarios must model the impacts of full production from these wells. The claim that Phase 1 would not alter the long term trends in groundwater levels is totally misleading. The impacts in the SW from existing WD pumping in the area are already producing well distress.**

24-16

The well monitoring program proposed is duplicative of the existing Kern County Water Agency program. The latter program is voluntary. By what means is the WD going to force compliance with a

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WD funded monitoring program that will apparently be evaluated also by the WD? There is no independent third party mentioned or available to provide an independent evaluation of the ongoing well declines. This section ignores the mitigation provisions detailed in the 2007 Kern County letter that gives detailed requirements for a monitoring Committee. (ref 4)

**24-16
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The admission on p ES 32 that the declines in existing wells from existing production in the area may not support existing land uses is a red flag for “NO PROJECT”. The claim that the BoR report indicates that there is high quality water down to 2,000 ft bgs is a gross oversimplification. The idea that you can simply drill new wells or deepen existing wells to continue to provide water from dried out wells completely ignores the mitigation restrictions given in the 2007 Kern County letter. It also completely ignores the overlying water rights of the existing private and coop well owners. **It is impossible to mitigate for loss of water.** It appears that the WD has become a scofflaw.

24-17

Table 1-3 Summary of issues Identified During Scoping period Many scoping letter comments have been dismissed as not important. I will provide detailed comments later in this letter but will flag several egregious dismissals now. On p 1-6 it is claimed that the desert soils and groundwater aquifer characteristics in the IWV do not create conditions for subsidence following groundwater extraction. This is nonsense. There is absolutely nothing peculiar about our geology that would protect us against subsidence. Desert valleys all around us have experienced serious subsidence failures, e.g., Fremont Valley, Lancaster and Palmdale areas. This is a good example of the multitude of claims made in the DEIR that its authors simply pull out of thin air.

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The comment letters that identified overdraft and additional impacts that new pumping would have on the cumulative declines are completely ignored. Sec 3.8 does not address this critical issue at all in spite of claims to the contrary. **In fact the word “overdraft” appears just once in the entire DEIR!**

The admission that the project is likely to result in a decrease in water quality is correct. Unfortunately, it is dismissed without any real analysis. **This is an unacceptable risk- another red flag for “NO PROJECT”.**

The assertions that the appropriate groundwater studies need to be properly referenced and incorporated into the findings of this DEIR cannot be dismissed by directing the reader into a section that does nothing to rectify the problem identified. In spite of the implication, the known deficiencies (poor modeling results in the SW) from the Brown and Caldwell GFM (ref 5), the discrepancies have not been addressed at all in the revised model used for the scenario modeling of this DEIR. In spite of the implication in this Table, the critical findings of the AB303 study have not been addressed at all in the revised model. It was stated in a comment letter that the IS did not have sufficient scientific data to support the project hydrologically. In fact, the DEIR does not either. The claim that the project map 3.8.1 shows the location of all wells in the project area is a serious misstatement. The County letter (ref 4) states clearly that all wells affected by the project must be identified and located. No attempt to do so has been made by this DEIR. **The claim that cumulative impacts are treated in sec 5.1 is another misstatement. Sec 5.1 is so superficial as to be worthless.**

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Taken as a whole, the DEIR responses to the IS comment letters summarized in the ES.10 are disingenuous and appear to indicate a lack of understanding of the issues brought forth.

Sec 2.1.1 IWVWD Background The DEIR is using a scaled back annual population increase of 1%. **This number is a pure guess coming from the Kern Council of Governments but is far more realistic than the BRAC estimates used in the IS. It is far more likely that the real growth will be**

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negative as a result of ongoing Defense Budget cuts that are already having an effect. A great failure on the part of the WD is in not doing an accurate financial model for future WD operations including a cost/benefit analysis of this project.

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Sec 2.2.2 2007 WSIP The description of the 2007 Mitigated Negative Declaration activity in this section couldn't be more inaccurate. The WD actually attempted to slip its project under the review of the public and the County. The KCPD letter (ref 4) contains a scathing admonition against the CEQA failure inherent in the WD process. **The present WD EIR effort is a direct result of the severe embarrassment that the WD took over the previous WSIP.**

Sec 2.2.3 2010 Water Model The LC model does not properly represent the southwest aquifer area.. The impact modeling (Appendix G) is based on The Brown and Caldwell Groundwater Flow Model (GFM) (ref 5) that was funded by the Cooperative Groundwater Management Group. The basic model is flawed and has never been through a professional verification/validation process. The model results have serious discrepancies with the observed well level declines in the SW- the same area as is proposed for the WSIP production. These discrepancies are actually admitted in the GFM Final Report. This flaw was pointed out to the Brown and Caldwell staff and to the Technical Advisory Committee of the CGWVG but to no effect. The WD is now using this flawed model to predict the additional declines that will occur with the new pumping proposed by this project. Of course, the flaws under- predict the effects. **The lack of proper validation limits its use as a CEQA analysis tool in any case.**

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Sec 2.3 Project Objectives. Assuming a population increase of 1 % and then ignoring the effects on an ongoing conservation program results in production demands that are not defensible. **Without a clearly stated and accurate objective it is impossible to discover the balance between the environmental costs and the benefits to the WD. The 20% redundancy above peak day demands is already in place with existing facilities.**

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The peak demand day in 2011 was Aug 26 with a pumping total of 12.87 Mgal. This value was obtained by adding the posted daily production for all WD wells on that day (ref 13). Well 18 was not completely down that day but failed on the 27'th. Well 13 was not pumped on the 26'th at all. The total WD well capacity by adding the nominal outputs of the 10 existing functional wells is about 11,600 gal/min. (ref 13). This is 16.7 Mgal/day. **The WD has a "redundancy" right now of 29.8 % above their 2011 peak day. Considering the current production (2011) capability and looking back at actual peak demand going back as far as 2005, the WD has a redundancy not less than 23%. for all those years.**

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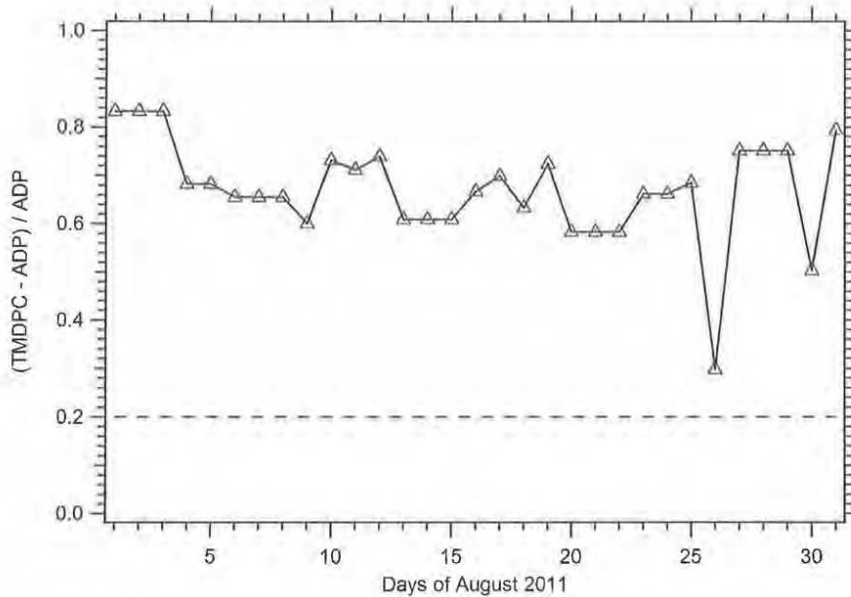


Figure 1 This figure is a plot of IWWWD production redundancy above daily demand for the month of August 2011. Shown for reference is the 20% “need” stated in the WSIP. Redundancy is the ratio of excess production capability (total maximum daily production capacity less the actual daily demand) /actual daily demand. The peak demand was on the 26’t. The plot shows the redundancy to have been nearly 30%. This is substantially above the 20% “need” stated in the WSIP. This is with existing equipment.

Several things are very obvious in examining this chart. **The redundancy on most days during the month was above 60% including days on either side of the maximum demand day.** The maximum demand was sustained for only one day. The additional water consumed above adjacent days was about 3 Mgal. This additional water could easily be taken from the 17 Mgal of storage in the WD system. (ref 12) . The question is, who is the WD trying to fool here? If you take the 20% stated “need” as a genuine statement then the WD is confused since they already have a comfortable margin. **It does occur to this writer that the WD may be confounded by the complexity of their antiquated system. I will offer a suggestion in the Alternatives section to bring the WS system up to a modern automated status, thus alleviating any appearance of a need for more capacity.**

Sec 2.5.1 Project Timing The proposed schedule is based on the same flawed logic that is present in sec 2.3. The same “urgency” that was stated in the 2007 WSIP is carried forward into this one. The fact that 2007 has come and gone with no loss of the ability of the WD to serve its customers even on peak days is further evidence that the project purpose and timeline are at best inaccurately stated. The fact that the WD already has its 20% redundancy is further evidence of the artificial construct inherent in these charts. **Even if such an EIR would be accepted after review it would be irresponsible to use its findings at even two years out.** The aquifer decline is *accelerating* even with current pumping and is becoming ever more acute. This is especially true for the very area of new pumping proposed by this project (ref 8). The recent Urban Water Management Plan (UWMP) which is posted on the WD web page indicates that no imported water will be brought in until 2035! This lack of foresight by the

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WD is unacceptable for the WD customers and for the citizens directly affected by current WD practices. By that time many (likely a majority) of the smaller wells in the SW area will have dried up assuming present declines.

**24-22
Continued**

Sec 2.5.2 Improvements to Existing Wells The very use of the word “improvement” is misleading and incorrect. Re-equipping a standard well at nearly double capacity introduces a new threat of premature well failure and declines in water quality near the well. WD well 8 was totally wrecked in the early 90’s from pumping at an excessive rate. The LC study that is the basis for the “improved” well concept does not make any reference to water velocity through the perforated section of casing at all. No mention is made of the recognized industry practices that usually limit the velocity to about 0.1 ft./sec. The current wells are designed more or less to this standard. However, doubling the capacity of a well will double the velocity. The LC study makes no mention of the interrelationship between water velocity to casing perforation corrosion or erosion at all.

It is well known to every undergraduate geology student that the ability of moving water to transport (erode) material is a very strong function of the water velocity. It appears often to vary as approximately as the 6th power of the velocity. If you double the capacity you double the velocity through the gravel pack. The ability of this flow to move material is now 32 times greater than what it was in the original flow case (using the 6th power as an example). At the doubled flow, sand is now easily mobilized and swept at high rates through the gravel pack and into the well bore. The well is mining sand in addition to water. Ultimately the gravel pack collapses and the sand now has full access to the well casing. You have done irreversible damage to your well. Yes, the well may have the efficiency to be able to support the higher capacity but there is a lot more to the decision to “improve” the well than that.

24-23

There is also no mention or discussion of the relationship between high pumping rates and the increase in arsenic concentration in the pumped water. This phenomenon is widely observed but only partially understood. Virtually every ratepayer or taxpayer would agree that **experiments with precious public money are unacceptable. Especially when you have direct evidence in the WD experience to support a more prudent course.** In many ways the “improvement” of the wells is high risk. No discussion of these risks is offered anywhere. (see also comments in Cumulative Impacts section on arsenic)

Sec 3.3 Biological Resources. All areas of this project are in known Mojave ground squirrel territory. Well 35 would be located on the El Paso Wash bajada. On and near this wash to the immediate south was the proposed site for a large- scale solar power plant that has been stymied largely by environmental concerns over desert tortoise and Mojave ground squirrel (MGS). This writer has personally witnessed MGS individuals many times in the immediate vicinity of the well 35 site. Mitigation for loss of habitat is not discussed.

24-24

Sec 3.4 Cultural Resources The Bowman site is in the El Paso Wash paleo-Indian corridor connecting Black Mtn with China Lake and the Coso Mtns. Significant archeological findings were made during the surveys for the solar facility immediately to the south of the WSIP site. An archeologist with experience in early man (Mojave culture) must reexamine this location very carefully

24-25

Sec 3.8 Hydrology and Water Quality. The hydrological references are given in this DEIR in a very nonspecific listing presentation. It is not obvious that the author who prepared this report has actually read and understood the implications of the reports he lists. Especially absent is an incorporation of the latest isotopic findings from the AB 303 study that indicate we are pumping “fossil” water from nearly

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all of the wells in the Valley including the SW. No mention is made that we are in fact in a water mining mode and have been for 60 years and more. The discussion of declining water levels is simplistic and does not recognize the declines as the very definition of overdraft. The display of several hydrographs to illustrate the overdraft condition in this complex basin is superficial and damages the credibility of the author. Describing hydrographs that show slight increases serves to further confuse the central issue of serious overdraft in the IWV. Local effects especially in the area of the proposed new pumping are already showing serious effects of WD pumping. **The project would, in fact, contribute significantly to the already serious sw groundwater overdraft.**

**24-26
Continued**

Sec 3.8.1.4 Groundwater Quality Contrary to what is claimed in this section, the BoR report does not indicate that there is high quality water in the SW down to 2,000ft bgs. This statement ignores both spatial and depth variations of water quality that are in fact documented clearly in the BoR report. The water quality reports for well BoR 3 provides an example of the fallacy of the claim. At the time the BoR wells were being equipped, the piezometers were located in zones of apparent high quality water for the most part. A careful study of the cutting and e-logs will reveal the complexity of the aquifer section in the sw wells.

In many areas in the valley, notably in much of the North Brown Rd area, the higher quality water is found in a shallow zone. Below this zone is an extensive ancient very thick clay zone containing very poor quality water. It was water from this deeper zone that contaminated the higher quality water nearer the surface following heavy pumping at the former Neal Ranch.

24-27

The IS indicates that there is a potential for increased arsenic concentration in groundwater at or near the wells with higher pumping. This is a known serious threat and has no resolution once underway. The cost to "make whole" the private or co-op well owners would be enormous under such a situation. The mobilization of arsenic from pumping, especially heavy pumping, is a world wide problem. **High capacity pumping offers a cheap solution to more water but the unintended consequences can be impossible to mitigate.** It is a really bad idea as I have expressed to the WD over and over.

The DEIR describes water quality declines as a result of flows of poorer water laterally into pumping depressions. However, vertical flows of poor water can result in a much faster deterioration under the same conditions. All that is required is a deeper zone of poor water to be mobilized by pumping.

Sec 3.8.1.5 Recharge The use of a storage model to estimate recharge involves the subtraction of two quantities with relatively large uncertainties. Far better ways to estimate recharge are typically used.. This section makes no reference to the AB303 study authored by Randy Bassett that confirms earlier conclusions that we are largely pumping fossil water from most wells in the IWV, including the SW. The suggestion that the sw is a region of high recharge based on the high quality water found there is weak at best. Actually, the best estimates are based on the water level gradients that existed in the vicinity of WD well 18 before heavy pumping took place -suggest just the opposite. There is no doubt that the statement that there is a major hydrologic boundary in the SW (top p3.8-23) is correct. The barrier was discovered and mapped by Kunkel and Chase in a 1969 paper: (http://www.iwvgroundwater.org/documents/inclusive_geohydrologic_references.html]. paper no 109) The concluding statement that there is not a substantial recharge into the area is also correct. Unfortunately, the Brown and Caldwell GFM does not properly treat either the recharge nor the barrier in the sw. It is this aspect of the model that leads to the large any unacceptable disagreement between the measured water level declines in this area and the model predictions. The model predicts water level declines much smaller than observed. **The LC scenario results are then not conservative but will underestimate the impacts from the WSIP project pumping.** The calibration problems were

24-28

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discussed on several occasions with Brown and Caldwell staff and with the WD consulting hydrogeologist. This is a known problem. **The hydrologic modeling basis for estimating impacts is fundamentally flawed. The model has not been subjected to a verification/validation process and is thus not available to provide support in a CEQA study in any case.**

**24-28
Continued**

Sec 3.8.2 Thresholds of Significance This list is one that needs to be studied very carefully as it is the basis for much of what follows. It is not just a placeholder.

24-29

Sec 3.8.2.2 Criteria Determined to Have less Than Significant Impact There is no doubt that the changes in the aquifer piezometric surface have profound effects on the aquifer function including migration or even chemistry changes to the ion species present in the stored water. Water quality changes can be expected. It is possible that arsenic concentrations may increase in the vicinity of a heavily pumped well.

24-30

Sec 3.8.3.3 Criteria Determined to Have a Potentially Significant Impact There is absolutely no doubt that the proposed project will have a profound effect on the aquifer in the immediate area and over time result in a regional decrement of the quantity of water in storage and a decline in water quality. **No suitable mitigation for these impacts is proposed because none are available.**

24-31

Sec 3.8.4 Mitigation Measures **The content of this section is so weak as to be of no value.** There is no technical or economic analysis of any of the mitigations proposed. Although much of the space in this section is directed to Phase 2 when well 35 effects would be felt, there is no mitigation proposed at all for Phase 1 since it is assumed that no net additional production would be made. This assumption is not realistic since there are no controls on the “improved” well production. As a consequence, it must be assumed that these wells will be pumped at full capacity as pointed out earlier. This pumping impact is not modeled at all. The LC scenarios are very misleading. The modeling does not indicate the combined effects of the “baseline” declines already underway and the new impacts of this project. This omission is a violation again of CEQA requirements to fully disclose the impacts of a project. It is impossible to mitigate for the loss of water that is not being replaced.

24-32

The idea of simply drilling deeper wells when the old wells dry out is not a mitigation at all but merely a means to continue down the same consumptive path to effectively drain out the valley. Such a plan is technically and economically impractical and politically impossible. It is impractical to extract water from a small domestic well below about 800 ft and from a commercial well below about 1200 ft. **Damage from a new project must be considered as having occurred at the occasion of any addition to the already serious rate of decline.** Damage is inflicted by greater pumping costs and the inexorable declines in water quality as water levels are lowered. **Actionable damage occurs long before wells are dried out completely. The very idea that there is a damage threshold is a convenient invention to draw attention away from the ongoing damage.**

Sec 3.8.5 Residual Impacts after Mitigation **The statement that there would be no residual project level impacts with mitigation is ingenuous is simply unbelievable.**

Sec 4.1 Introduction to Analysis of Alternatives **This section is based on multiple false statements and conclusions.** This section attempts to identify alternatives that would lessen the supposed single environmental impact that cannot be mitigated – a reduction in groundwater quality as water levels decline. While this is a serious concern, the lack of suitable mitigation for this project’s contribution to the already serious water level declines and the cumulative effects that are accruing accordingly is an even larger issue. Since I am arguing that there are no effective mitigation proposed for any of the

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hydrological impacts, the Alternatives section is seriously incomplete. Even within the narrow scope of alternatives that were identified this section totally fails to complete even a cursory analysis of any of them. The summary descriptions do not even come close to actually offering insight into the opportunities present in the alternatives to this project. The section completely fails to provide meaningful discussion of the many possible projects discussed in the BoR report 20 years ago (ref 1). What is also missing is even a rudimentary technical and economic discussion of the possible projects. **The most egregious breach of CEQA requirements for transparency is the lack of any serious discussion of the existing interties and is totally damaging to the credibility of this section. This section provides no meaningful choices to the WD Board of Directors.**

**24-33
Continued**

Sec 5.1 Cumulative Impacts This is another critical CEQA section that is almost completely lacking in useful descriptions or analysis. The most serious omission is the lack of any mention of the cumulative impact that this project will have on the ongoing declines in groundwater levels. The modeling as defective as it may be, does not even attempt to show the combined effects of existing pumping with the additions from this project. It was pointed several places earlier that there was a deliberate effort to simplify the model results in showing only the effects of the WSIP project itself. It is essential that the impacts of the proposed wells on nearby wells (including WD, Navy and Inyokern CSD wells) be quantified with realistic full pumping capacity scenarios. The cumulative effects of *all* pumping is required to assess the full impacts on the aquifer. **Accurately understanding the SW aquifer is intensified not only by the impacts being observed by the recent pumping there by the WD, but also by the fact that it represents the last area of high quality water in the I WV.**

24-34

Summary

The DEIR is very incomplete in many critical areas as has been pointed out in this comment letter. The willful use of inaccurate descriptions of the existing Navy and Searles'Valley Minerals interties is inexcusable. The apparent ignorance that the current WD system has a redundancy already in excess of the claimed need is inexcusable. The use of a groundwater flow model that was known by its originators to have significant errors in the very area of concern when it was published is inexcusable. The failure to indicate and analyze cumulative impacts on the already seriously overdrafted aquifer is inexcusable. The failure to effectively use the data and analysis already in place in the numerous recent studies is inexcusable. The failure to recognize our existing serious overdraft as a primary concern is inexcusable. Failure to recognize the overlying water rights of the affected private wells is inexcusable. The list could go on for another dozen items. **The DEIR is as fundamentally flawed was the 2007 WSIP negative Declaration and should be given up before additional public money is spent on it.** The WD at some point will realize that it should spend its future water supply money on *enhancement* not on so called "improvement". Enhancement gives the hope for extending the life of our aquifer. Simply following a growth model and pumping more and more is a prescription for disaster. We are risking our existing investments. **Our future depends on forward-looking projects that extend our water resource not on continuing practices from the past.**

24-35

Suggestions

- 1) Abandon the WSIP- a far less costly and more valuable project for the WD to undertake would be to revitalize the intertie agreements and bring the interties fully into the operations of all three parties. This cooperative sharing of capacity together with continuing conservation efforts will result in a very safe operating plan for all.
- 2) Take most of the remaining money that would have been spent on the WSIP and invest it in a project to enhance our water supply- such as the desalinization of brackish water. This could be cost

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effective using solar distillation as is being done in Israel. If done in cooperation with the Navy it would likely be possible to utilize the huge brackish water resource at the China Lake Playa. The potable water produced by this project would be a supplement to the existing groundwater supplies and would be turned into the Navy system near the desalinization plant at the playa. In turn, the treated water would enter the WD system through the revitalized intertie.

- 3) Using the rest of the WSIP funds and perhaps some facility improvement funds, modernize and automate the WD pumping plant operation. This would involve fully automating the daily coordination of pumps and valves. The improvement would probably incorporate modern PLC (Programmable Logic Controller) hardware and concepts. The first part of the conversion has already been done with the telemetry data setups for reservoir monitoring. Completion of this task would be cost effective and result in a much smoother plant operation. The scary appearance of an inadequate redundancy would be removed.

I do appreciate the opportunity to offer my comments on the WD DEIR. I assume that you will find them instructive and of value. The undersigned is a physicist with long experience in physics, geophysics and soils and in modeling. I was in fact the WD technical representative for the BoR project.

Sincerely, Don Decker



**24-36
Continued**

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Response to Comment 24-1: This comment states that the Proposed Project evaluated in the 2007 WSIP and in the project proposed by the District during the scoping period for this EIR are the same, and that comments provided during the scoping process were ignored. Master Response 13 addresses this issue.

Response to Comment 24-2: This comment states that, although the population projections in the Draft EIR have been reduced after the scoping period, the Proposed Project is still not needed because future conservation efforts will reduce future demand. Population projections of 1 percent per year were provided by Kern COG, and are fall within the range of projections used by the City of Ridgecrest in its General Plan (1 to 3 percent) and Kern County in its General Plan (2 percent). It should be noted that the District only produces groundwater in response to actual water demands from its customers. It does not have the ability to store large quantities of water for which there is no demand. If population increases do not occur, or if demand is low because of conservation or cooler weather, then the new facilities would only be operated as needed to satisfy the actual demand. Master Responses 7, 8, and 10 further address this issue.

This comment also states that the EIR fails to evaluate the alternative of obtaining water from the Navy using the existing intertie. Alternative 3, obtaining water from existing Navy wells, is analyzed as an alternative to the Proposed Project in the EIR. The District's Board could choose to adopt this alternative, although the Navy has indicated that implementation of this alternative could take several years with no guarantee of approval and would require the completion of a National Environmental Policy Act document by the Navy. Alternative 3 also would result in the same amount of pumping as the Proposed Project, it would just be relocated to wells on NAWS. Thus, the impacts would be the same, just in a different location. Additional information is provided in Master Response 9.

Response to Comment 24-3: This comment states that full production of the project wells should be used to evaluate the impacts of the Proposed Project, and that the analysis in the EIR is based on a flawed groundwater model. Although this comment states that the model has its flaws, the model is the best available model of groundwater flow at the regional scale in the Indian Wells Valley. Master Response 2 further addresses this issue.

This comment also states that the Draft EIR does not discuss that more water is being pumped from the basin than is being recharged. This issue is discussed extensively in the EIR. In particular, Section 3.8.1.5 summarizes the estimates of recharge and pumping from several studies. This section states that, over the last 30 years, groundwater pumping from the valley has averaged about 26,000 acre-feet per year and the recharge in the valley is about 9,200 acre-feet per year. Master Response 1 addresses this issue

This comment also states that the EIR did not consider recent studies regarding the age of the water in the aquifer. Master Response 3 addresses this issue.

Response to Comment 24-4: This comment states that the private well owners and cooperative system well owners have water rights that supercede the IWWWD. Master Response 12 addresses this issue.

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The comment also states that impacts to the water levels from the Proposed Project in addition to the existing rate of decline should be evaluated in the Draft EIR. The EIR addresses this issue in detail. As discussed in detail in the Draft EIR, based on modeling conducted in August 2011 by Layne Hydro (see Appendix G of the Draft EIR), the average rate of water level decline within one-half mile of Well 35 is anticipated to increase by 0.5 foot per year, from a current baseline rate of approximately 1.6 feet per year to a projected rate of approximately 2.1 feet per year. The average rate of water level decline within 1.5 miles of Well 35 is anticipated to increase by 0.2 foot per year, from a current baseline rate of approximately 1.6 feet per year to a projected rate of approximately 1.8 feet per year. At about a 2-mile radius from Well 35, increases in the rate of water level decline caused by the Proposed Project are too small to be measured.

The comment also states that a threshold should not be used to evaluate environmental impacts because it ignores the impact from the baseline conditions. CEQA requires the use of thresholds of significance to determine environmental effects (CEQA Guidelines Section 15064.7). As required by CEQA, the Draft EIR evaluates the impacts of the Proposed Project both on a project level and at a cumulative level.

Response to Comment 24-5: This comment states that the Proposed Project is not needed because no high demand day failures to provide water over the past four years have occurred. Maximum Day Demand for the WSIP evaluated in the EIR was computed by applying a peaking factor to the Average Daily Demand as projected in the 2010 Urban Water Management Plan. This peaking factor was conservative, so that the worst-case scenario could be modeled and evaluated in the EIR. It should also be kept in mind that the District only produces groundwater in response to actual water demands from its customers. It does not have the ability to store large quantities of water for which there is no demand. Should the actual Maximum Day Demand values in the future be less than the estimate, similar to the demand in 2011, the new facilities would only be operated as needed to satisfy the actual demand. Master Response 7 provides more information on this issue.

This comment also states that the EIR fails to evaluate the alternative of obtaining water from the Navy using the existing intertie. Alternative 3, obtaining water from existing Navy wells, is analyzed as an alternative to the Proposed Project in the EIR. The District's Board could choose to adopt this alternative, although the Navy has indicated that implementation of this alternative could take several years with no guarantee of approval and would require the completion of a National Environmental Policy Act document by the Navy. Alternative 3 also would result in the same amount of pumping as the Proposed Project, it would just be relocated to wells on NAWS. Thus, the impacts would be the same, just in a different location. Additional information is provided in Master Response 9.

Response to Comment 24-6: This comment states that the groundwater model does not accurately reflect the impacts of the Proposed Project because it did not assume that Wells 18, 34, and 35 would be pumped at full capacity all of the time. District wells are currently not pumped at full capacity, but are 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. The District does not propose to change its operations with this Proposed Project. Master Response 2 further addresses this issue.

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This comment also states that the groundwater in the basin “is in an ever more serious *accelerating* decline”, based on data from the KCWA groundwater monitoring database. The Draft EIR does discuss the increasing rate of drawdown in the aquifer that occurred between 1970 and 1980. The KCWA data, however, show that for the last three to eight years, water levels in many wells located throughout the basin have stabilized. This is shown on the hydrographs presented in Figures 3.8-4 through 3.8-6 of the Draft EIR and for many other wells monitored by KCWA. The KCWA database was included in the Draft EIR as Appendix F.

This comment also asserts that the groundwater flow model is inaccurate and is not conservative. The flow model is the best available model and meets the CEQA Standards of Adequacy for use for evaluation of environmental effects. The model also evaluates the pumping of all wells in the southwest well field at full capacity, which is greater than the Districts normal well rotation. Thus, the model potentially over-estimates that amount of drawdown that may occur from the Proposed Project. This issue is addressed further in Master Response 2.

Response to Comment 24-7: This comment states that the Project Description is incomplete because the purpose of the Proposed Project is to mine water. The EIR discusses the current condition in the basin, and the fact that more water is currently being pumped from the basin than is being recharged. The Draft EIR also evaluates the environmental impacts from increased pumping in the basin. Master Responses 4 and 5 address this issue.

This comment also states that the Proposed Project is not needed because it was based on population projections in the 1997 Water General Plan, and that any increase in demand will be offset by future conservation. The 1997 Water General Plan and the 2010 Urban Water Management Plan both 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. The population projections in the 1997 Water General Plan were not used to estimate demand. The population projections used to estimate demand in the Draft EIR were from the 2010 Urban Water Management Plan, and were provided by Kern County COG and the US Census Bureau (see Table 2-1 of the Draft EIR). Population projections of 1 percent per year in Kern County were provided by Kern COG, and are fall within the range of projections used by the City of Ridgecrest in its General Plan (1 to 3 percent) and Kern County in its General Plan (2 percent). It should be noted that the District only produces groundwater in response to actual water demands from its customers. It does not have the ability to store large quantities of water for which there is no demand. If population increases do not occur, or if demand is low because of successful conservation or cooler weather, then the new facilities would only be operated as needed to satisfy the actual demand. Master Responses 7 and 8 further address this issue.

This comment also states that the EIR fails to evaluate the alternative of obtaining water from the Navy using the existing intertie. Alternative 3, obtaining water from existing Navy wells, is analyzed as an alternative to the Proposed Project in the EIR. The District’s Board could choose to adopt this alternative, although the Navy has indicated that implementation of this alternative could take several years with no guarantee of approval and would require the completion of a National Environmental Policy Act document by the Navy. Alternative 3 also would result in the same amount of pumping as the Proposed Project, it would just be relocated

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to wells on NAWS. Thus, the impacts would be the same, just in a different location. Additional information is provided in Master Response 9.

Response to Comment 24-8: This comment states that the District Board of Directors should approve the No Project Alternative. The No Project Alternative is evaluated in the EIR and the District's Board could choose to adopt this alternative.

Response to Comment 24-9: This comment states that the Proposed Project is not needed because no high demand day failures to provide water over the past four years have occurred. Master Response 7 provides information on this issue.

Response to Comment 24-10: This comment states that the groundwater model used for analysis in the EIR is flawed because it does not evaluate the impacts of pumping the wells at full capacity. This comment also states that the model does not take into account cumulative impacts. The groundwater flow model does not examine the impacts from the Proposed Project in a vacuum, it adds the impacts Proposed Project to the overall pumping in the valley. Master Response 2 further addresses this issue. In addition, the groundwater flow model was not the only tool used to evaluate baseline conditions and potential effects. As described in the Draft EIR, detailed analysis of water-level and water-quality data from multiple sources and government agencies was conducted to evaluate Project impacts.

This comment also states that the Proposed Project is virtually identical to a project proposed for years ago, including installing new wells in the same location. The project proposed in 2007 included the construction of two new wells at the corner of Victor and Las Flores, in the intermediate well field area, and the refitting of five existing wells, for an additional nominal capacity of between 8,500 to 11,500 gallons per minute in one phase. The 2007 project, which was not approved, was very different than the currently Proposed Project.

Response to Comment 24-11: This comment states that the Proposed Project is not needed because the District can already meet its 20 percent redundancy requirement and there will be no future increase in demand. Master Responses 7 and 8 address this issue.

Response to Comment 24-12: This comment states that doubling the capacity in existing wells is an experiment that will result in wrecking the wells. The improvements to the wells will be designed by a licensed Professional Engineer and the District does not anticipate adverse effects to Wells 18 or 34 from the Proposed Project. The District's past experience and industry-wide practices do not support this statement. Testing and redevelopment of the wells will establish appropriate sustainable pumping rate, up to a maximum of 2,200 gpm.

This comment states that the location of such high-capacity wells so close together is a violation of the Cooperative Groundwater Management Group Guidelines. Planning Objective #2 in the most recent Cooperative Groundwater Management Plan for the Indian Wells Valley, which signed by the IWWVD and other major water users in the basin on March 16, 2006, addresses this issue as follows:

Planning Objective #2: Distribute new groundwater extraction within the Valley in a manner that will minimize adverse effects to existing groundwater conditions (levels and quality), and maximize the long-term supply within the

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Valley. Future groundwater development by the Parties will be distributed within the Valley in a manner that is designed in accordance with aquifer characteristics. The Parties will consider developing, to the fullest extent possible, individually or as a cooperating group, wells in the outlying areas of the Valley. Areas such as Indian Wells Valley Water District's southwest field should be considered as should wells designed to capture recharge from all areas of the watershed. As a general guideline, the location and capacity of new production wells (excluding domestic wells) should not unreasonably interfere with existing wells.

According to this planning objective, the location and capacity of new production wells should not unreasonably interfere with existing wells. The Draft EIR evaluated the impact of new Well 35 on existing wells and found that there is a potential for the acceleration of the rate of groundwater level decline within 2 miles of this well. The District has provided mitigation to address this impact, and the Project would not unreasonably interfere with existing wells. The Proposed Project would comply with Planning Objective 2. It should also be noted that Planning Objective 2 encourages the placement of new wells in the southwest wellfield, where new Well 35 is proposed.

Response to Comment 24-13: This comment states that the Initial Study cannot be used to eliminate the inclusion of an environmental resource from the Draft EIR. According to CEQA Guidelines Section 15063, the Initial Study can be used to assist in the preparation of an EIR by focusing the EIR on the effects determined to be significant.

The comment also states that the decrease in water levels could affect rural land uses, and, therefore Land Use and Planning should be evaluated in the EIR. The effect of the Proposed Project on rural land uses was completely related to water resources impacts, and was, therefore, discussed in the Section 3.8, Hydrology and Water Resources, of the EIR. Section 3.8.3.3 discusses the potential of the Proposed Project to lower the groundwater table level so that pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted.

Response to Comment 24-14: This comment states that Mitigation Measure H-1 in the Draft EIR does not mitigate the impacts of the Proposed Project because it does not make the impact less severe. According to CEQA Guidelines Section 15370, mitigation includes one or more of the following: "(a) avoiding the impact altogether by not taking a certain action or parts of an action. (b) minimizing impacts by limiting the degree or magnitude of its action and its implementation (c) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action (e) compensating for the impact by replacing or providing substitute resources or environments". The mitigation proposed in Mitigation Measure H-1 falls under category e and is an appropriate mitigation under CEQA.

This comment also states that the Proposed Project would have heavy extraction that would lead to serious declines in water levels. Phase 1 of the Proposed Project would not result in any additional pumping from the basin. The increased pumping capacity of Wells 18 and 34 would lead to shorter pumping durations (and longer rests between pumping intervals) to produce the same quantity of water. Phase 2 would result in additional production to meet increased demand in anticipation of a one percent population increase, or about 80 acre-feet per year out of the approximately 28,500 acre-feet per year pumped from the basin, as noted by the

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commentor in Comment 24-11. If, in fact, there is no increase in population or demand, as asserted by this commentor and others, then there would be no increase in pumping due to the Proposed Project. The anticipated drawdowns in the southwest well field under worst-case conditions are described in Section 3.8.3.3 of the Draft EIR.

Response to Comment 24-15: This comment also states that the EIR fails to evaluate the alternative of obtaining water from the Navy using the existing intertie. Alternative 3, obtaining water from existing Navy wells, is analyzed as an alternative to the Proposed Project in the EIR. The District's Board could choose to adopt this alternative, although the Navy has indicated that implementation of this alternative could take several years with no guarantee of approval and would require the completion of a National Environmental Policy Act document by the Navy. Additional information is provided in Master Response 9.

Response to Comment 24-16: This comment states that the groundwater model used for analysis in the EIR is flawed because it does not evaluate the impacts of pumping the wells at full capacity. Master Response 2 addresses this issue.

The comment also states that the mitigation will not be effective because it will be implemented by the District. The District is its own CEQA Lead Agency and, as such, is authorized to implement its own mitigation monitoring and reporting program under CEQA Guidelines Section 15097.

Response to Comment 24-17: This comment states that the No Project Alternative should be approved because the Proposed Project may cause declines in the water levels of existing nearby wells. The No Project Alternative was evaluated in the EIR and could be adopted by the District's Board. It should also be noted that the mitigation actions suggested by the Kern County Planning and Community Development Department in both 2007 and 2011 do not meet CEQA standards for appropriate mitigation measures (see responses to Comment Letter 21 in this Final EIR).

Response to Comment 24-18: The comment states that the effects of subsidence were not analyzed in the EIR. The potential of the Proposed Project to cause subsidence were analyzed in the Initial Study prepared for the scoping process. The Proposed Project sites are not located on unstable soils that would be subject to subsidence, as indicated on Figure 12 of Chapter 4 (Safety Element) of the Kern County General Plan. Therefore, the issue of subsidence was not further evaluated in the EIR, as allowed by CEQA Guidelines Section 15063.

Response to Comment 24-19: This comment states that the No Project Alternative should be approved because the Proposed Project would cause impacts to groundwater levels and groundwater quality. The No Project Alternative was evaluated in the EIR and could be adopted by the District's Board.

This comment also states that the groundwater model used to evaluate impacts of the Proposed Project is inadequate and that cumulative impacts are not discussed. Master Responses 2, 3 and 5 address this issue.

Response to Comment 24-20: This comment states that the 1 percent population growth estimates provided by the Kern Council of Governments are a pure guess and that real growth

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will be negative. The Kern Council of Governments is the best available source for population projections in Kern County. The population projections are consistent with the City of Ridgecrest General Plan, which predicts growth between 1 and 3 percent, and the Kern County General Plan, which predicts growth at 2 percent. None of these agencies assert a negative population growth.

This comment also states that the District should conduct an accurate financial model for future operations, including a cost-benefit analysis for this project. The CEQA EIR is meant to assess the environmental impacts of a Proposed Project. However, the District's Board will consider many things, including cost, technical feasibility, and environmental impacts, when making its decision on the project.

Response to Comment 24-21: This comment states that the groundwater flow model used to assess impacts for the Draft EIR was not validated and cannot be used as a CEQA analysis tool. Master Response 2 provides information on this issue.

Response to Comment 24-22: This comment states that the projected population growth of 1 percent, which was used in the EIR to project future demand, is not accurate and that a population decline will actually occur. Master Responses 7 and 8 address this issue.

The comment further states that 2015 is too far in the future to be able to accurately evaluate environmental impacts. CEQA allows that the drafting of an EIR necessarily involves some degree of forecasting (CEQA Guidelines Section 15144). The EIR has estimated the timing of the implementation of Phase 2 based on population projections from Kern COG. The actual timing of implementation may differ based on actual demand, which is dependent on actual population changes, the effectiveness of conservation, and other factors. CEQA also requires the District to evaluate the environmental impacts of the entire Project, defined as the whole of an action. Evaluation of Phase 1 and Phase 2 in separate environmental documents would not be allowed under CEQA because the California Supreme Court has that determined that a project description must include all relevant parts of a project, including reasonably foreseeable future expansion or other activities that are part of the project [*Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal. 3d 376]. In this case, Phase 2 is reasonably foreseeable based on demand calculated from population projections provided by Kern COG. Future water supply projects that may be needed after the implementation of Phase 2 were not considered to be reasonably foreseeable because alternative water sources may become available in the future, and Phase 3 was dropped from the project during the scoping process.

Response to Comment 24-23: This comment states that doubling the capacity in existing wells is an experiment that will result in wrecking the wells. The improvements to the wells will be designed by a Registered Engineer and the District does not anticipate adverse effects to Wells 18 or 34 from the Proposed Project. See the Response to Comment 24-12.

Response to Comment 24-24: This comment states that impacts to Mohave ground squirrel may occur. A Mohave ground squirrel habitat assessment for the Proposed Project was conducted by a permitted-biologist (see Appendix C of the Draft EIR). The assessment in the EIR provides mitigation for loss of individuals and habitat from the construction of Well 35.

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Response to Comment 24-25: This comment states that impacts to archaeological resources may occur. The Well 35 site was surveyed by qualified archaeologists (Appendix D of the Draft EIR), and Native American consultation was conducted with tribes listed by the Native American Heritage Commission. No significant impacts from the construction of Well 35 would occur.

Response to Comment 24-26: This comment states that the hydrological references have not been sufficiently reviewed. Master Responses 1 through 4 address this issue.

This comment also states that the EIR does not recognize the importance of the age of the water being pumped by wells in the southwest wellfield. Section 5.2.2 of the 2008 AB303 Report prepared by Stoner and Bassett includes an extensive discussion of the geochemistry, flow paths, recharge, and age-dating of the groundwater. This discussion in the AB303 report provides what is described as a “proof-of-concept” that recharge from the Sierra mountain front canyons is migrating through the basin following general pathways that are defined geochemically. These pathways, and the recharge volumes shown on Figure 5.1 of the 2008 AB303 report, are consistent with and support the groundwater flow model and analysis in the Draft EIR. Specifically, the age-dating for the post-Pleistocene water does not infer that the water was emplaced at that time in the past (e.g. 6,000 or 7,000 years ago) and has been static since that time. Instead, the model developed and supported in the 2008 AB303 report states that the groundwater has been consistently recharged from the Sierra mountain front and that the age dating and geochemistry indicate the migration time for the water to reach those locations. Prior to the early part of the last century, there was no pumping in the basin and the only water loss was evaporation from the China Lake playa. The lack of pumping and significant loss of water from the aquifer would have resulted in very flat hydraulic gradients and very slow flow velocities, which are consistent with the age dating in the 2008 AB303 report and the flat gradients observed to the southwest of the southwest well field, where very little development of groundwater has occurred. Thus, the age-dating and geochemical modeling presented in the 2008 AB303 report have been recognized and considered in the analysis presented in the Draft EIR, and they are consistent with and support the findings of the EIR.

This comment also states that the use of hydrographs is insufficient to illustrate the local effects of the Proposed Project. The use of hydrographs was intended to illustrate the general water level declines in various locations in the basin. In addition to the use of hydrographs, water-level trends were evaluated using linear regression, and the areal distribution of baseline rates of water-level decline and of Project effects were plotted maps which were presented in the Draft EIR. Localized impacts to groundwater declines were evaluated by Layne Hydro using the regional groundwater flow model (Appendix G). Master Response 2 provides additional information on this model.

Response to Comment 24-27: This comment states that the 1993 Bureau of Reclamation report does not indicate that there is high quality water in the southwest down to 2,000 feet below ground surface. The referenced report contains several statements indicating that there is high quality groundwater in the southwest area of the basin:

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- page xxii of the Executive Summary: “Good quality water was found to the 2,000-foot drilling depth in the Intermediate and Southwest areas.”
- Page xxiii of the Executive Summary: “A greater quantity of high quality groundwater is in storage at depth in the Intermediate and Southwest areas than previously known.”
- Page 69: “The discovery of good quality water to a depth of at least 2,000 feet is probably the most significant Project finding in the southwest area. Total dissolved solids (TDS) in the groundwater samples collected from the Project piezometers ranges from about 200 mg/L in the upper part of the aquifer to about 350 mg/L in the deeper part. A substantial volume of groundwater is in storage in this area.”

This comment also states that the pumping from the Proposed Project could mobilize poor quality water from deeper intervals that could affect local wells by migrating vertically. The 2008 AB303 report evaluates the presence of low-quality groundwater identified in the Bureau of Reclamation Well BR-3, located approximately 2.25 miles east of the proposed Well 35 location. On page 60, the AB303 report concludes that the low-quality groundwater at BR-3 occurs within isolated sand lenses within thicker clay intervals, is isolated from shallower and deeper aquifers, and does not imply the degradation of water quality in either the upper or lower aquifers. Thus, the analysis in the Draft EIR is based on and consistent with the data and interpretations presented by several studies, including the 1993 US Bureau of Reclamation report and the more recent 2008 AB303 report.

Response to Comment 24-28: This comment states that there is little or no recharge to the basin due to the identification of “fossil” groundwater in the 2008 AB303 study. “Fossil” groundwater is a term that should best be used to describe groundwater that no longer has a link to its historic source of recharge, not simply very old water. Pleistocene-age water identified beneath the central part of the basin, in the area of the China Lake playa appears to have been sourced from the pluvial lakes that occurred during the Pleistocene, and thus would fit the definition of “fossil” water. The age of the water in the southwest area of the basin, however, is younger than Pleistocene. The geochemical modeling conducted in the 2008 AB303 report supports the Sierra mountain front model of recharge for these areas. The 2008 AB303 report uses the geochemical data to identify various recharge pathways in the basin and specifically links the southwest area to recharge along part of the Sierra mountain front.

The Draft EIR cites several different sources for estimates of recharge, notes that there is a difference of opinion among these reports, and presents an independent estimate of the potential range of recharge. The presentation of the range of estimates and the acknowledgement that there is a difference of opinion among experts is consistent with the CEQA Section 15151 Standards of Adequacy. Figure 5-1 of the 2008 AB303 report, cited in this comment, provides estimates of recharge that area consistent with the geochemical model and demonstrate that most of the recharge to the basin occurs in the southwest area.

This comment also states that the analysis in the EIR and the groundwater flow model do not address the presence of a groundwater barrier in the southwest area. Numerous researches, including the analysis in the Draft EIR, have noted a change in the hydraulic gradient and subsurface geophysical discontinuities in the southwest area. Most studies, however, do not indicate that this discontinuity is some sort of impermeable barrier that prevents or restricts groundwater movement through the area. Many of the studies interpret this continuity to be a

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fault scarp (e.g. splay of the Sierra frontal fault) or steep drop in the bedrock surface, such that the basin is much deeper on the northeast side of the discontinuity. In summarizing past studies, the 2008 AB303 report (Section 4.4) states that there are few restrictive structures in the aquifers and does not identify any in the southwest area.

Response to Comment 24-29: This comment states that the list of thresholds of significance should be studied very carefully as it is the basis of what follows and that the list is not just a placeholder. The use of thresholds of significance to evaluate environmental impacts in an EIR is required under CEQA. This list of hydrology and water quality thresholds of significance is from the CEQA Guidelines, Appendix G.

Response to Comment 24-30: This comment states that water quality changes in the aquifer should be evaluated under Section 3.8.3.2, Criteria Determined to Have a Less Than Significant Impact. The discussion in this comment is speculative and not based on any specific data or occurrence.

Response to Comment 24-31: This comment states that the Proposed Project will result in a decline in both water quality and water quantity, and that no mitigation is possible for these impacts. Master Responses 1 through 5 address this comment.

Response to Comment 24-32: This comment states that mitigation measures are required for Phase 1 because it should be assumed that the improved wells 18 and 34 would be pumped at full capacity. Phase 1 provides an increase in capacity to provide system redundancy in the event of equipment failure, maintenance, or other emergency situation. Phase 1 would not result in an increase in annual pumping by the District. Impacts from Phase 1 were determined to be less than significant. According to CEQA Guidelines Section 15126.4, mitigation measures are not required for effects which are not found to be significant. Master Response 1 further addresses this issue.

This comment also states that the full impact of the Proposed Project is not evaluated because the existing water level declines are not included in the model and the model does not assume that the wells will be pumped at full capacity all of the time. Master Response 2 addresses this issue.

The comment also states that a threshold should not be used to evaluate environmental impacts because it ignores the impact from the baseline conditions. As required by CEQA, the Draft EIR evaluates the impacts of the Proposed Project both on a project level and at a cumulative level. The groundwater model identified the potential environmental effects of the Proposed Project. The projected increases in the rate of decline were then used in the analysis of impacts to define the increased rate of decline, above the baseline rate, that may occur as a result of the Proposed Project. As required by CEQA, thresholds of significance are used to determine environmental effects (CEQA Guidelines Section 15064.7). CEQA does not require mitigation for impacts that are not caused by the specific project that is being evaluated in the EIR.

The comment also states that it is unbelievable that there would be no residual project level impacts with mitigation. As discussed in the Draft EIR, Mitigation Measure H-1 provides a

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mechanism to provide water such that existing land uses could be maintained. Therefore, there would be no residual impacts after mitigation.

Response to Comment 24-33: This comment states that there can be no effective mitigation for water level impacts and so the District must also evaluate alternatives that would also reduce water level impacts, such as the possible projects discussed in the 1993 Bureau of Reclamation report. The 1993 Bureau of Reclamation Report states that "There are three major avenues for extending the life of the groundwater resources in the Indian Wells Valley:

- Blend good quality water with poorer quality water
- Expand pumping to "new" areas, such as the southwest
- Treat poorer quality water."

An alternative to treat poorer quality water, including blending that water with good quality water was considered in the EIR and rejected. The District conducted pilot testing for brackish water desalination from the Northwest Well Field from June 2008 to June 2009. The pilot test concluded that a brackish water treatment facility could provide approximately 3,000 acre-feet per year of high-quality groundwater. However, the cost of the disposal of the brine produced by the treatment process, a hazardous waste, would be excessive because of the District's inland location (ocean disposal of brine is not an option as with other communities). The cost of this alternative, at \$2,350 per acre-foot would be more than 20 times the cost of the Proposed Project. The study concluded that the IWWWD benefits from the additional drinking water recovered were not more than the cost of brine treatment. It should be noted that the Proposed Project does include an expansion of pumping into the southwest area of the basin, rather than intermediate area, as recommended by the 1993 Bureau of Reclamation report. Additional information on the alternatives considered during the EIR process are provided in Master Responses 9 and 10.

The comment also states that there is not enough discussion of the analysis of Alternatives. The CEQA Guidelines do not require the same level of detail in the alternatives analysis as in the analysis of the Proposed Project. Section 15126.6(d) of the CEQA Guidelines states:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

No analysis of environmental impacts is required for alternatives that were considered and rejected.

Response to Comment 24-34: This comment states that the cumulative effects of pumping are not adequately evaluated because the model does not include the effects of existing pumping and that full pumping of the new wells is not considered. As discussed further in Master Responses 2, 4, and 5, the model did not consider just the incremental pumping of wells in the southwest area to meet Project objectives, but considered full pumping of these wells as

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part of the normal rotation of water supply pumping used by the District. The additional drawdown caused by the Proposed Project was added to the existing baseline rate of groundwater drawdown to determine the full effect of the Proposed Project on water levels in the basin.

Response to Comment 24-35: This comment states that the District should abandon the Proposed Project and instead pursue the identification of new water supplies for the basin. The District may well pursue additional sources of supply, which is one of the reasons Phase 3, the installation of Well 36, was dropped as part of the Project after the scoping period. The District has already conducted feasibility and pilot studies for use of brackish water and desalination, which are hindered by the problem of the disposal of the hazardous brine. These and other alternatives have been considered and rejected for the Proposed Project because they do not meet the Project objectives. These issues are addressed further in Master Responses 9 and 10.

Response to Comment 24-36: This comment states that a different alternative to the Proposed Project should be adopted by the District. Master Responses 9 and 10 address this issue.

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