CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

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DATE: September 24, 2009

TO: Interested Parties

FROM: Steve Munro, Compliance Project Manager

SUBJECT: **High Desert Power Project (97-AFC-01C)**
Revised Staff Analysis of Proposed Modifications to Remove the Prohibition of the Use Of Recycled Water for Project Operations

California Energy Commission staff has issued the enclosed Revised Staff Analysis (RSA) for a 30-day public review period. The RSA is an assessment of the Petition to Amend submitted on August 12, 2008, and the Supplement to Petition for Modification to use Reclaimed Water (Supplement), submitted on June 4, 2009, by High Desert Power Project, (HDPP) LLC. The Supplement was provided in response to the initial Staff Analysis, which was issued on April 20, 2009. The Supplement requests approval to construct and use a recycled water pipeline on its property connecting with a City of Victorville recycled water supply line across the street from the project entry gate at 19000 Perimeter Road. The approximately 1700-foot pipeline would run outside the fence along the northern and western plant fence line.

The High Desert Power Project is an 830 MW combined cycle power plant located in the City of Victorville in San Bernardino County. The project was certified by the Energy Commission on May 3, 2000, and began commercial operation on April 22, 2003.

The proposed modifications would make the following changes to the project's Soil and Water Conditions of Certification :

- Modify Soil and Water-1 as follows:
    - Remove the prohibition of the use of recycled waste water to supplement or replace the power plant's current potable water supply for project operations.
    - Authorize construction of a recycled water pipeline to enable the project to use recycled tertiary-treated water for approximately 1/3 of its project cooling water needs.
    - Require a feasibility study to be completed by December 31, 2011, to determine the feasibility of converting to 100 percent recycled water use.
- Modify Condition Soil and Water-4 as follows:
    - Eliminate water banking milestones because of infeasibility of achieving the milestones and the goal of converting project cooling to 100 percent recycled water, with potable State Water Project water and banked groundwater as a backup.

- Add new Condition of Certification Soil and Water-20 to require that copies of the Executed Recycled Water Purchase Agreement be submitted prior to interconnection.

- Add new Condition of Certification Soil and Water--21 requiring that water metering systems be installed.

Energy Commission Soil and Water Resources staff, and Biological Resources staff, among others, reviewed the petition, the Supplement, and data responses and assessed the impacts of this proposal on environmental quality, public health and safety. Given the previous ground disturbance resulting from construction of the HDPP project, Soil and Water, Biological, and Cultural Resources were the only technical areas with identified potential for impacts. Staff concurs with the proposal to modify Soil and Water-1 and 4 and add Soil and Water-20 and 21 as described above. It is staff's opinion that, with the implementation of these revised and added Conditions of Certification and existing Conditions of Certification pertaining to project construction, the project will remain in compliance with applicable laws, ordinances, regulations, and standards and that the proposed modifications will not result in a significant adverse direct or cumulative impact to the environment (Title 20, California Code of Regulations, Section 1769).

The RSA and the amendment petition have been posted on the Energy Commission web site at the following web address: http://www.energy.ca.gov/sitingcases/highdesert/compliance/index.html. A Staff Workshop may be scheduled, if necessary, to address concerns from the public review process.

The Energy Commission's Order (if approved) will also be posted on the website. Energy Commission staff intends to recommend approval of the petition at the November 4, 2009 Business Meeting of the Energy Commission. If you have comments on this proposed modification, please submit them to me at the address below by 5:00 p.m. on October 8, 2009.

Steve Munro, Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, CA 95814

The Energy Commission encourages comments by e-mail. Please include your name or your organization's name in the e-mail. Those submitting attachments via e-mail should provide them in either Microsoft Word format, or in Portable Document Format (PDF), to: smunro@energy.state.ca.us.

If you have any questions, please contact me at (916) 654-3936.

Enclosure
Mail List: 707

HIGH DESERT POWER PROJECT (97-AFC-1C)
Petition for Modification to use Reclaimed Water
Staff Analysis
Prepared by: Paul Marshall and Rick York
September 2009

INTRODUCTION

On August 12, 2008, High Desert Power Project, LLC (project owner) filed a Petition for Modification to use Reclaimed Water (HDPP 2008a) for its High Desert Power Project (HDPP). A preliminary Staff Analysis of the petition was issued for public review on April 20, 2009. The only comments received were from the project owner in the form of a supplement to the original petition. The Supplement to Petition for Modification to use Reclaimed Water (supplement) was submitted to the California Energy Commission (Energy Commission) on June 4, 2009 (HDDP 2009b).

Within the supplement, the project owner clarifies the three changes they are requesting to the HDPP license, which are enumerated below:

1. Removal of the prohibition on the use of reclaimed (recycled) water as set forth in Condition of Certification **SOIL&WATER-1**.

2. Authorization to interconnect to the City of Victorville's (City) existing recycled water pipeline, via a new underground water pipeline approximately 1,700 feet long that will run along the perimeter of the HDPP site, and use recycled water provided to the HDPP by the City.

3. Modification to the aquifer banking requirements in Condition of Certification **SOIL&WATER-4** to reflect recycled water use.

The proposed use of recycled water and the modification to the aquifer banking requirements have the potential to cause environmental impacts to soil and water resources due to pipeline construction and the delivery, use, and discharge of recycled water. These aspects of the proposed petition to amend have been evaluated in accordance with the California Environmental Quality Act (CEQA) and current laws, ordinances, regulations, and standards (LORS).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

Staff has reviewed the LORS identified in the Energy Commission's Staff Assessment for the High Desert Power Project (CEC 1999) and the Energy Commission's Staff Analysis of Petition to Amend Condition of Certification Soil & Water-4 (CEC 2006) and has listed those LORS in **SOIL & WATER Table 1** that are new to this analysis.

SOIL & WATER Table 1
Laws, Ordinances, Regulations, and Standards

State LORS	
California Water Code, section 13523	Requires the Lahontan Regional Water Quality Control Board (LRWQCB) to prescribe water reuse requirements for water that is to be used as recycled water after consulting with the Department of Public Health (DPH).
California Code of Regulations, Title 17	Title 17, Division 1, Chapter 5, addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines.
California Code of Regulations, Title 22	Title 22, Division 4, Chapter 15, requires the California Department of Public Health (DPH) to review and approve new or modified recycled water projects to ensure they meet all recycled water criteria for the protection of public health.

PROJECT DESCRIPTION AND BACKGROUND

The HDPP is an 830 megawatt natural gas-fired combined-cycle power plant located in the City of Victorville (City), in San Bernardino County. The HDPP has been operational since April 2003, and its primary water supply is surface water purchased from the City through a contract with the Mojave Water Agency (MWA). The MWA is a Long-Term State Water Project (SWP) Contractor with a full entitlement of 75,800 acre-feet (AF) of SWP water (CEC 2006 and DWR 2007, Table B-4).

Because of drought and the pumping constraints that federal biological opinions have placed on the SWP, deliveries to MWA have been variable. From 2001 to 2005, deliveries of SWP water to MWA have averaged less than 10,000 AFY (DWR 2007, Table B-5B). MWA expects SWP deliveries to continue to be variable for the next ten to fifteen years due to requests for additional water by other SWP contractors and insufficient yield from SWP conservation reservoirs (MWA 2005, Chapter 4). Because the primary water supply is variable, the project owner is required to maintain a groundwater bank where contract water from the City above HDPP operational needs is injected into the underlying aquifer (groundwater bank) for retrieval when SWP water is unavailable.

Given the current allocation of SWP water available to HDPP, there is no ability for HDPP to inject more water into the bank. If the HDPP had to rely solely on its current groundwater supply, it would be able to operate for approximately 18 months. With the reduction of water available from the SWP, HDPP is at risk of being required to significantly limit or even shut down plant operation within the next two years and beyond.

Proposed Amendments

As contained in the August 4, 2008 amendment petition and the June 4, 2009 supplement, the project owner proposes to augment SWP water with recycled water and to amend the water banking schedule to reflect the availability and use of recycled water. The decrease in the annual groundwater injection volume would be reduced by a percentage equal to the amount of recycled water used for HDPP operation (CEC 2009).

The project owner proposed to amend Condition of Certification **SOIL & WATER-1** in the August 4, 2008 petition to allow the use of recycled water to augment the HDPP's SWP water supply and to eventually transition to 100 percent recycled water as it becomes available for use. Staff concurred with this request and proposed changes to this condition in the staff analysis dated April 20, 2009. With the use of recycled water for cooling purposes, a revised water banking schedule and modification to Condition of Certification **SOIL & WATER-4** was also proposed in the August 4, 2008 petition. Staff believed it was premature to amend Condition of Certification **SOIL & WATER-4** because additional information was needed to evaluate the source, volume, reliability, and method of delivery (CEC 2009). The Supplement to Petition for Modification to use Reclaimed Water (supplement) that was submitted to the California Energy Commission (Energy Commission) on June 4, 2009 (HDDP 2009b) provided additional information needed for further analysis of use of recycled water at HDPP.

ANALYSIS

Staff reviewed the project owner's June 4, 2009 supplemental petition to identify potential environmental impacts to soil and water resources and for consistency with applicable LORS. This analysis is based on information provided in the original Staff Assessment for the HDPP (CEC 1999), the Energy Commission's Staff Analysis of Petition to Amend Condition of Certification Soil & Water-4 (CEC 2006), the Energy Commission's Staff Analysis of Petition to Amend Condition of Certification Soil & Water-1: Prohibition of use of Recycled Wastewater, and Soil & Water-4: Water Banking (CEC 2009), and the project owner's July 20, 2009 data responses (HDPP 2009c).

Based on this review, staff presents the following assessment of the project owner's proposed changes to Conditions of Certification **SOIL&WATER-1 and -4**. The scope of this analysis is to evaluate:

1. The CEQA and LORS compliance of the project owner's proposal to remove from Condition of Certification **SOIL&WATER-1** the prohibition on the use of recycled water.

2. The use of tertiary treated recycled water for cooling purposes and its potential to adversely affect soil and water resources from its production, delivery (via a proposed new 1700-foot pipeline within the HDPP property), use, and discharge.

3. The CEQA and LORS compliance of the project owner's proposed modification to the aquifer banking requirements (Condition of Certification **SOIL&WATER-4**) to reflect recycled water use.

Recycled Water Analysis

Condition of Certification **SOIL&WATER-1** currently prohibits the use of recycled water from the Victor Valley Wastewater Reclamation Authority (VVWRA) for HDPP industrial purposes. This prohibition was required because the California Department of Fish and Game (CDFG) was concerned that use of VVWRA recycled water for HDPP cooling purposes would reduce surface flows in the Mojave River. CDFG believed that these reduced flows would affect riparian resources and result in significant environmental

impacts. Staff agreed with CDFG and prohibited the use of recycled water for HDPP cooling in Condition of Certification **SOIL&WATER-1**, which was adopted by the Energy Commission in its Final Commission Decision (CEC 2000 and CEC 2009a).

Currently, SWP water is the primary source of industrial water supply for the HDPP. Based on its design, the HDPP has the capability to consume up to 4,000 AFY of raw surface water from the SWP. Based on operating data, the historic consumption of SWP water has been approximately 3,000 AFY based on the demand for electricity in Southern California. The project owner expects future electricity demand to increase with population growth in the Imperial Valley and the desert regions of Southern California (HDPP 2008).

Because of population growth in the Victorville area, the volume of wastewater delivered to the VVWRA Waste Water Treatment plant has increased. In 2003, CDFG and VVWRA executed a Memorandum of Understanding (MOU) that specifies discharge requirements that VVWRA must maintain to ensure there will be no impacts to riparian resources in the Mojave River. The MOU also includes a provision that requires VVWRA to discharge a portion of future increases in recycled water volume to the river (CEC 2009 and CDFG 2003).

In 2008, the Energy Commission certified the City of Victorville's Victorville 2 Hybrid Power Project (Victorville 2). This project has a recycled water supply agreement with VVWRA for the delivery of 3,150 AFY of recycled water. Since certification, the city of Victorville has decided to sell the project and progress on Victorville 2 has slowed significantly. The time necessary for acquisition and construction of the project could be on the order of 2 to 3 years. Therefore, the recycled water supply dedicated to Victorville 2 may be available for interim use by HDPP.

Based on the City's long-term projection of recycled water availability through the year 2040, the City expects to deliver up to 1,000 AF to the HDPP in 2010 and 2011. The City expects to start delivering recycled water to Victorville 2 during the second quarter of 2011 with full deliveries of up to 2,600 AFY starting in 2012. The City's long-term projection provided in its *Summary Table of Recycled Water Availability* includes all of the City's contractual obligations for recycled water (HDPP 2009c, Data Response 3).

The City has provided the project owner with a "Will Serve Letter" dated July 2, 2009 for the delivery of tertiary treated recycled water to the HDDP. The City commits to an initial delivery of 1,000 AFY (2010) and up to 4,000 AFY (2012) when the additional HDPP treatment facilities are installed and operating (HDPP 2009c, Data Responses 1 & 3). The City would meet the HDPP's increased recycled water demand (4,000 AFY) from its new Industrial Waste Water Treatment Plant that is currently under construction and is expected to be operational in the Spring of 2010.

The new Industrial Waste Water Treatment Plant in combination with the existing VVWRA facility would provide a reliable long-term supply of recycled water for the HDPP. In addition, supplying recycled water from two separate plants provides operational flexibility for treatment plant maintenance and/or forced outages (HDPP 2009c, Data Responses 1 & 3).

In the short term, *Summary Table of Recycled Water Availability* (HDPP 2009c, Data Response 3) shows that if Victorville 2 becomes operational in 2012, recycled water deliveries could be constrained and there would be limited availability for the period from 2012 to 2014. The availability of recycled water is dependent on the growth projections for the area serviced by the City and the expansion of treatment capacity necessary to meet all recycled water delivery obligations in 2015. If the growth projections are too high and the volume of wastewater available for treatment and delivery is not available, it is possible the volume of recycled water that can be delivered to HDPP and/or Victorville can be reduced and use of surface and groundwater supplies would be needed to make up supply needs on either or both projects for continued operation.

Staff believes the likelihood these fresh water supplies would be needed is low given the current schedule for development of Victorville 2 and delivery of recycled water. However, staff believes the owner should continue to bank any available SWP water supply and ensure carryover until the full reliable recycled water supply would be available in 2015 and HDPP can be modified for 100 percent recycled water use. Staff notes that if freshwater supplies are needed, Victorville 2 has been analyzed and certified to use fresh water on an interim basis so there would be flexibility in maintaining reliability while ensuring there would be no environmental impacts during this short term use. Modification of the aquifer banking requirement and proposed amendments to Condition of Certification **SOIL&WATER-1 and SOIL&WATER-4** to address this short term limitation are provided below.

To ensure the HDPP has a reliable long term supply of recycled water available and can commit to future maximum use of recycled water, staff proposes Condition of Certification **SOIL&WATER-20**. This condition would require the project owner to enter into a long term agreement with the City to supply the maximum recycled water use of 4,000 AFY at a rate of up to 6,000 gallons per minute. Staff also proposes addition of Condition of Certification **SOIL&WATER-21,** which would require the applicant to install and maintain metering devices as part of the recycled water supply and distribution system to monitor and record in gallons per day the volume of recycled water used by the HDPP. This condition will ensure the project complies with the terms of the recycled water agreement required in proposed Condition of Certification **SOIL&WATER–20**.

Recycled Water Use Laws

The production and use of recycled water is regulated under federal and state law. The State Water Resources Control Board (SWRCB) shares jurisdiction with the Regional Water Quality Control Boards (RWQCB) and with the Department of Public Health (DPH) over the use of recycled water. The SWRCB exercises general oversight over recycled water projects, while DPH is charged with the protection of public health and drinking water supplies through the development of uniform water recycling criteria. Under California Water Code, sections 13522.5, 13523, and 13523.1, any person who proposes to produce or use recycled water must file a report and obtain water reclamation requirements or a master reclamation permit from the appropriate RWQCB.

One of the primary conditions for the use of recycled water is protection of public health. The current Water Recycling Criteria (Title 22, California Code of Regulations, sections

60301 through 60355) require the submission of an engineering report to the RWQCB and DPH before recycled water projects are implemented. For existing recycled water projects, the report must be amended prior to any modifications or expansion.

In addition, Title 17, California Code of Regulations addresses the health and safety requirements of backflow prevention and cross connection of potable and non-potable water lines. Through the approval of the engineering report by DPH, that includes the backflow prevention and cross connection provisions of Title 17, the health and safety requirements of Title 17 and Title 22 would be met. To ensure compliance with federal and state laws, staff has added Condition of Certification **SOIL&WATER-20** that requires the project owner to submit a copy of an approved engineering report and any other DPH or LRWQCB requirements to the Compliance Project Manager (CPM) prior to the delivery of recycled water to the HDPP. HDPP has already made substantial progress in satisfying this condition as shown in the draft engineering report (HDPP 2009d) provided in support of the petition to amend for review and discussed in this analysis.

Compliance with Condition of Certification **SOIL&WATER-20** would ensure that a long-term recycled water supply is available for HDPP operation and that recycled water production and use complies with the Clean Water Act, the California Water Code, and the California Code of Regulations. Through compliance with federal and state law, impacts to soil or water resources from the production, delivery, use, and discharge of recycled water would be less than significant.

RECYCLED WASTEWATER

The draft Engineering Report for Recycled Water Use by High Desert Power Project (HDPP 2009d) indicates that after recycled water is blended with SWP water in the cooling tower for make-up purposes, it will be cycled through the existing zero liquid discharge system (ZLD). This system will provide for reuse of recycled water and eliminate the need for a wastewater discharge. The ZLD would however concentrate solids and chemical constituents into a semi-solid waste that would have to be disposed of. Staff believes the volume of waste that would be generated by the ZLD through the use of the recycled water supply would not change significantly but it is possible the chemistry of the waste could change. Staff believes the project owner should comply with existing Condition of Certification **Waste-1** and amend the operation waste management plan to describe the new waste stream and identify the methods of management that would be required given the waste characterization. The flow diagram in Appendix D also indicates the recycled water supply will not be interconnected with the aquifer banking system. This will eliminate any potential impacts to groundwater.

MODIFICATION TO AQUIFER BANKING REQUIREMENTS

As discussed above, the SWP deliveries can be significantly reduced during drought conditions or by environmental restrictions on Delta pumping. Therefore, HDPP's primary water supply is interruptible. Accordingly, certification of the project required HDPP to obtain a backup water supply to provide water to the project during

interruptions of the primary supply. Because the Mojave groundwater basin is over drafted and no existing groundwater reserves are available, HDPP was permitted to establish a groundwater bank to provide a backup water supply. With the current reduction in deliveries of SWP water due to existing drought conditions and the variable water quality of SWP water, the current groundwater banking system does not provide a reliable long-term backup supply.

As designed, the groundwater bank is to be developed and then used on an as-needed basis when deliveries of SWP water are restricted. In accordance with **SOIL&WATER-4**, HDPP must eventually establish a water bank with a volume equivalent to the volume of water expected to be used by HDPP over a three year period of operation plus 1,000 AF. The volume of this banked water supply is based on the estimated maximum use of back up water required during a contiguous three year period when SWP water would be unavailable (3 years x 4,000 AFY) plus 1,000 AF.

Staff realizes that if the project owner does not inject sufficient water to comply with the water banking goals identified in **SOIL & WATER-4d**, the project owner may be required to construct a pre-injection reverse osmosis treatment system. Staff believes the intent of this requirement was based on the need to meet water quality requirements for the injected water. However, staff believes that where no water is available for treatment, the project owner should not be mandated to comply with the requirement for constructing and operating a treatment system.

While it is unrealistic to hold HDPP to the annual schedule as detailed in **SOIL & WATER-4** due to current SWP water availability, the cumulative volume needs to be established as soon as possible. In order to maintain a suitable volume for use as back up, HDPP should use its entire annual allotment (8,000 AFY) from the City, minus operational needs, to resupply the groundwater bank. Once full, the bank will be required to be maintained as necessary to sustain that volume. When the planned future amendment for conversion to full recycled water use is received staff can further consider whether it would be appropriate to change or eliminate the water banking requirement. Staff proposes to modify this condition and remove the schedule of milestones as shown below.

CONSTRUCTION IMPACTS

Construction of the recycled water pipeline will include excavating approximately 1,700 linear feet of trench along the north and west boundaries of the facility, placement of 18-inch diameter Polyvinyl Chloride pipe, interconnecting with VVWD's exsiting 16-inch line, and backfilling with engineered fill.

SOIL AND WATER IMPACTS - These construction activities would expose disturbed soils to wind and water erosion that could result in offsite impacts if proper control measures are not implemented. Staff recommends the applicant be required to update the erosion control and revegetation plan required in Condition of Certification **SOIL&WATER -16**. This would ensure that appropriate Best Management Practices and control measures would be implemented and pipeline construction activities would not result in any off-site impacts.

BIOLOGICAL CULTURAL AND OTHER ENVIRONMENTAL IMPACTS - Biological Resources staff has some concerns about the proposed pipeline construction since the proposed reclaimed water supply pipeline would be located immediately adjacent to (outside of) the existing fence that surrounds the power plant site. The area adjacent to the existing power plant site is desert tortoise habitat, and desert tortoise were observed in the area during the original construction. Therefore, staff agrees with the project owner's suggested approach that the current High Desert Power Project Biological Resources Mitigation Implementation and Monitoring Plan be implemented during project construction and that the Designated Biologist or a Biological Monitor be present during pipeline construction to make certain that wildlife species are not affected by pipeline construction. Staff and the Compliance Project Manager must also be provided regular project updates during construction; however staff and CDFG must be contacted immediately if a desert tortoise is encountered during pipeline construction. If a desert tortoise is encountered, staff, CDFG, and the project owner will discuss and agree upon impact avoidance measures to be implemented to avoid impacts to desert tortoise. With regard to Cultural Resources, these are of a lower order of concern, since the area of excavation has been previously disturbed, and there were no cultural resources found during the original plant construction. Implementation of the existing construction-related conditions of certification, including the approved Worker Environmental Awareness Training program for all construction workers, will prevent significant impacts on all environmental resources during the pipeline excavation and construction process.

LORS ANALYSIS

As presented in **SOIL AND WATER Table1**, new LORS were evaluated in the assessment. The proposed changes would comply with the following LORS if the new and amended conditions of certification are implemented.

- The Resource Conservation Recovery Act of 1976 by the proper handling and disposal of waste through compliance with Condition of Certification **Waste-1**.
- Title 17 of the California Code of Regulations, through the approval by San Bernardino County for backflow prevention and cross connections of potable and recycled water lines in accordance with Condition of Certification **SOIL&WATER-20**.
- Title 22 of the California Code of Regulations, through the proper use and discharge of recycled water in accordance with Condition of Certification **SOIL&WATER-20**.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

Staff proposes additional changes to Condition of Certification SOIL & WATER-1 that were made in staff's Analysis dated April 20, 2009. These changes are proposed to accommodate the change in water supply and additional information supplied by the project owner as discussed in the analysis above. Staff generally concurs with the changes to Condition of Certification **SOIL&WATER–1** proposed by the project owner, however staff proposes language that would commit the owner to obtaining and using

the maximum amount of recycled water use consistent with Energy Commission water policy.

Staff also previously recommended a copy of an agreement between the City and HDPP for the long term supply and delivery of recycled water be provided to support the proposed amendment. Staff understands the owner is working with the City to develop this agreement. Staff concurs with the owner that an agreement can be supplied as a condition of project certification as long as the agreement is in place before delivery of recycled water. Staff has included Condition of Certification **SOIL&WATER-20** to address this requirement and commitment on the part of the owner. Therefore, staff proposes to modify Condition of Certification **SOIL&WATER–1e** to reflect this change.

Staff generally concurs with the owner proposed changes to Condition of Certification **SOIL & WATER-4.** Staff believes the water banking schedule and requirement for reverse osmosis treatment in the event the schedule cannot be maintained can be stricken. However, staff believes that the owner should be required to bank SWP water when it is available and meets water quality requirements for injection. This will ensure that if water is available it would be banked and could be used for any short term reductions or limitations in recycled water supply discussed above.

SOIL&WATER-1 ~~The only~~ ~~w~~Water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency's (MWA) Ordinance 9 and/or appropriately treated recycled waste water.

a. Whenever SWP water is available to be purchased from ~~MWA~~ the city of Victorville, or recycled waste water is available, the project owner shall use direct delivery of such water for project operation.

b. Whenever water is not available to be purchased from the ~~MWA~~ city of Victorville the project owner may use SWP water banked in the ~~seven~~ four HDPP wells ~~identified in Figure Number 1 of the Addendum Number 1 to the "Evaluation of Alternative Water Supplies for the High Desert Power Project" (Bookman-Edmonston 1998)~~ as long as the amount of water used does not exceed the amount of water determined to be available to the project pursuant to **SOIL&WATER-5.**

c. If there is no SWP water available to be purchased from the ~~MWA~~ city of Victorville, and there is no reclaimed water available, and there is no banked water available to the project, as determined pursuant to **SOIL&WATER-5**, no groundwater shall be pumped, and the project shall not operate. At the project owner's discretion, dry cooling may be used instead, if an amendment to the Commission's decision allowing dry cooling is approved.

~~d. The project shall not use treated water from the Victor Valley Wastewater Authority.~~

e. The project's water supply facilities shall be appropriately sized and utilized to meet project needs. and to make maximum use of recycled waste water for power plant cooling ~~needs~~ given current equipment capabilities. ~~Prior to use of recycled waste water the project owner will provide the CPM with details of the recycled water pipeline and connections, a copy of an agreement with VVWRA or other suppliers that will deliver recycled waste water, and any other information necessary to amend the project for the proposed recycled waste water use.~~

f. The project owner shall continue with the feasibility study and developing the design for eventual conversion to 100 percent recycled water use for evaporative cooling purposes by the 4th quarter of 2012. The intent of this conversion is to eliminate fresh water use for power plant cooling consistent with Energy Commission water policy and California Water Code, section 13550. The project owner shall submit a petition to amend the project because of the changes that would be needed to convert to 100 percent recycled water. The feasibility study shall be completed by the project owner and submitted to the CPM no later than December 31, 2011.

Verification: The project owner shall provide final design drawings of the project's water supply facilities to the CPM, for review and approval, thirty (30) days before commencing project construction.

The project owner shall provide a biannual report on the progress being made on the project design for use of 100 percent recycled water for power plant cooling. The report shall include information related to design and specifications for project modification and any adjustments or changes in the schedule for converting to 100 percent recycled water use. The first report shall be due six months after adoption of this condition of certification. If the schedule for implementation of 100 percent recycled water use goes beyond the 2nd quarter of 2013, the CPM may require the owner to provide an analysis demonstrating why the necessary plant modifications can or cannot be made in a more timely manner. This analysis may be brought to the Energy Commission for consideration and further determination of what action the owner should take to make the facility modifications to 100 percent recycled water use.

Verifying compliance with other elements of Condition **SOIL&WATER-1** shall be accomplished in accordance with the provisions of the Verifications for Conditions 2, 3, ~~and~~ 6, 20, and 21 as appropriate.

SOIL&WATER-4 Injection Schedule:

a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the project's commercial operation.

b. By the end of four years and two months from the start of commercial operation, the project owner shall install and begin operation of a pre-injection ultraviolet (UV) disinfection system.

c. By the end of the fifth year of commercial operation, the project shall submit a report to the CPM demonstrating that HDPP has maintained an average THM concentration level consistent with the WDR permit requirements.

d. After the end of the fifth year of commercial operation, the project owner shall: (i) inject SWP water when it is available in excess of volumes needed to operate the project. The amount of water available to HDPP for extraction is equal to Injection minus Extraction minus Dissipation minus 1000 acre-feet, as defined in SOIL&WATER-6.

~~d. The project shall install and implement a pre-injection reverse osmosis treatment system within one (1) year if any water banking milestone is not met, as defined in the following table.~~

~~Table of Milestones for Calculated Water Bank Reserve~~ ~~(1)~~

~~Water Banking Year~~	~~Anniversary Date (2)~~	~~End of Year Milestones (3)~~	~~Contingency Plan: Criteria for Installation of Reverse Osmosis~~
~~8~~	~~April 21, 2011~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 2,500 ac-ft~~
~~9~~	~~April 21, 2012~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 5,400 ac-ft~~
~~10~~	~~April 21, 2013~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 8,300 ac-ft~~
~~11~~	~~April 21, 2014~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 9,200 ac-ft~~
~~12~~	~~April 21, 2015~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 10,100 ac-ft~~
~~13~~	~~April 21, 2016~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 11,000 ac-ft~~
~~14~~	~~April 21, 2017~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve ≤ 12,000 ac-ft~~
~~15~~	~~April 21, 2018~~	~~Water Banking Goal~~	~~Calculated Water Bank Reserve < 13,000 ac-ft~~

~~(1) Calculated Water Bank Reserve = Injection minus Extraction minus Dissipation. (Amount of water available to HDPP is equal to Injection minus Extraction minus Dissipation **minus** 1000 acre-feet, as defined in **SOIL&WATER-6.**)~~

~~(2) Start of Commercial Operation: April 22, 2003.~~

~~(3) Milestones are designed to determine if injection falls significantly behind schedule.~~

~~e. No later than the end of the fifteenth (15) year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation, minus the amount of dissipated groundwater shall meet or exceed thirteen thousand (13,000) acre-feet.~~

~~f. After the requirement of section e. has been satisfied and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet. Once the limit of one thousand (1,000) acre-feet has been reached, the project owner shall replace banked groundwater used for project operation during aqueduct outages as soon as SWP water is available for sale by MWA.~~

Verification: The project owner shall submit an installation and operation report describing the pre-injection ultraviolet disinfection system (UV) by the end of the fourth year of commercial operation. Forecasted estimates of SWP water to be injected shall be included in the quarterly Aquifer and Storage Recovery Well Report. The project owner shall submit a UV performance report by the fifth year of cornmercial operation. For other related items see the verification to Condition 5. See also the verification to Condition 12.

SOIL&WATER-20: The project owner shall provide the CPM two copies of the executed Recycled Water Purchase Agreement (agreement) with the City of Victorville (City) for the long-term supply (20 – 25 years) and delivery of tertiary treated recycled water to the HDPP. The HDPP shall not connect to the City's recycled water pipeline without the final agreement in place. The project owner shall comply with the requirements of Title 22 and Title 17 of the California Code of Regulations and section 13523 of the California Water Code.

Verification: No later than 60 days prior to the connection to the VVWRA recycled water pipeline, the project owner shall submit two copies of the executed agreement for the long-term supply and delivery of tertiary treated recycled water to the HDPP. The agreement shall specify a maximum delivery rate of ? gpm and shall specify all terms and costs for the delivery and use of recycled water by the HDPP.

No later than 60 days prior to connection to the City's recycled water pipeline, the project owner shall submit to the CPM a copy of the Engineering Report and Cross Connection inspection and approval report from the California Department of Public Health and all water reuse requirements issued by the Los Angeles Regional Water Quality Control Board.

SOIL&WATER-21: Prior to the use of recycled water during the operation of the HDPP, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the volume of recycled water used by the HDPP. The metering devices shall

be operational for the life of the project, and an annual summary of daily water use shall be submitted to the CPM in the annual compliance report.

Verification: At least 30 days prior to use of recycled water for HDPP operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the recycled water line serving the project. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report.

CONCLUSIONS

Staff believes the project should be modified to provide for connection and interim use of the available recycled water supply and supports the eventual conversion to 100 percent recycled water use. The modification is consistent with Energy Commission water policy and California Water Code section 13550 which are intended to protect freshwater supplies for other beneficial uses. This change in water use would not result in any impacts and would be consistent with previous project analysis if the proposed changes to the existing conditions of certification are adopted and implemented. Staff anticipates HDPP will submit a petition to amend the project because of the changes that would be needed to convert to 100 percent recycled water use.

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