DOCKETED	
Docket Number:	09-AFC-05C
Project Title:	Abengoa Mojave Compliance
TN #:	269451
Document Title:	Mojave Solar Project (09-AFC-05C) Staff Analysis for the Petition to Construct Two New Evaporation Ponds
Description:	Staff Analysis for the Mojave Solar Project Petition to Amend to Add Two New Evaporation Ponds (TN 253750, TN 253751, TN 253752 & TN 259278)
Filer:	Ashley Gutierrez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	4/9/2026 11:57:33 AM
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DATE: April 9, 2026

TO: Interested Parties

FROM: Ashley Gutierrez, Compliance Project Manager

SUBJECT: **MOJAVE SOLAR PROJECT (09-AFC-05C)**

CEC Staff Analysis of Petition to Amend the Final Commission Decision

On December 26, 2023, Mojave Solar LLC (project owner) filed a Post Certification Petition for Changes in Project Design, Operation, or Performance and Amendments to the Commission Decision (petition) (TN 253750, TN 253751, TN 253752) with the California Energy Commission (CEC) requesting to amend the Mojave Solar Project (MSP) Final Commission Decision (Decision).

On September 25, 2024, an addendum to the petition was filed to increase the power output of the facility from 250 megawatts (MW) to 275 MW (TN 259278). This increase in power is to update the Decision regarding a 2015 Large Generator Interconnection Agreement (LGIA) Amendment that increased the maximum interconnection allowance at MSP's Point of Interconnection by 25 MW as an "Energy Only" addition. While the amendment to the LGIA did not result in any physical changes to the project, it provides updated information relevant to the project description in the original MSP Commission Decision.

The MSP is a 275-MW solar electric generating facility located at 42134 Harper Lake Road in unincorporated San Bernardino County, about nine miles northwest of Hinkley. The project was certified by the CEC in September 2010 and began commercial operation in December 2014.

Description of Proposed Change

The project owner seeks approval to construct two new permanent evaporation ponds, one at Alpha and one at Beta power blocks, to enhance water storage capacity and to facilitate the maintenance of the four existing evaporation ponds. Additionally, the project owner requests to update the description of the project to a 275 MW plant to reflect a 25 MW increase as a result of an amended LGIA that was approved by the California Independent System Operator (California ISO) and Southern California Edison (SCE) in 2015[1].

1 The amended LGIA is available via the Federal Energy Regulatory Commission's eLibrary portal, https://elibrary.ferc.gov/eLibrary/search, in Docket No. ER15-2718-000, file date Sept. 25, 2015, with description "Southern California Edison Company submits tariff filing per 35.13(a)(2)(iii: Amended LGIA with Mojave Solar LLC to be effective 9/26/2015.

CEC Staff Review and Conclusions

California Code of Regulations, title 20, section 1769 requires a project owner to petition the CEC for the approval of any change the project owner proposes to the project, design, operation, or performance requirements of a certified facility. A change in ownership or operational responsibility also requires approval through the post-certification amendment process. Consistent with these regulations, the CEC staff (staff) has reviewed the petition, including the supplemental petition, for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS) and MSP's conditions of certification (COCs).

Based on the analysis, contained below, staff has concluded that, with the adoption of the new and modified COCs in the area of Biological Resources and the modified COCs in the areas of Soil and Water Resources and Waste Management, the changes to the MSP would not have a significant effect on the environment, or cause the project to fail to comply with any applicable LORS. Staff recommends adopting new and revised COCs in three resource areas. For biological resources, staff recommends revisions and new COCs to ensure consistency with the California Endangered Species Act, incorporate western burrowing owl protection requirements, and as discussed with the project owner, include California Department of Fish and Wildlife take-permit requirements within the CEC's in-lieu certification to ensure conformance with LORS. For soil and water resources, staff recommends revisions to include Lahontan Regional Water Quality Control Board (LRWQCB) staff on COC transmittals, update waste discharge requirements developed in coordination with LRWQCB staff, and revise wastewater collection system reporting. For waste management, staff recommends revisions to include LRWQCB staff on hazardous material reporting submittals and address the evaluation of heat transfer fluid contaminated soil. With these new and revised COCs, the facility would continue to comply with applicable LORS. The proposed project changes would not result in significant impacts to biological resources, soil and water resources or waste management.

Staff concludes that the addition of the evaporation ponds does not meet any of the criteria requiring the preparation of subsequent or supplement review pursuant to Public Resources Code section 21166, and California Code of Regulations, Title 14, sections 15162 and 15163. The existing extensive framework of mitigation covering the original project along with the proposed modifications of biological resources, soil and water resources and waste management COCs and new biological resource COC address potential impacts from the construction and operation of the ponds. Staff also concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) are applicable to the proposed change.

As explained in the Staff Analysis, consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval. Staff intends to recommend approval of the petition at the May 13, 2026, Business Meeting of the CEC.

The CEC's project webpage, [https://www.energy.ca.gov/powerplant/solar-thermal/mojave-solar-project-abengoa] has a link to the petition and the Staff Analysis on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the "Docket Log (09-AFC-05C)" option. If approved, the CEC's Order approving this petition will also be available from the same webpage.

This letter has been mailed to the CEC's list of interested parties and property owners of all parcels within 500 feet of any affected project linears and 1,000 feet of the project site. It has also been emailed to the MSP subscription list. The list is an automated CEC email system by which information about this facility is emailed to parties who have subscribed. To subscribe, go to the CEC's project webpage, cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Any person may comment on the Staff Analysis. Those who wish to submit comments on the analysis prior to the CEC Business meeting may do so by using the CEC's electronic commenting feature. Go to the CEC's project webpage and click on either the "Comment on this Proceeding," or "Submit e-Comment" link. When your comments are filed, you will receive an email with a link to them.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Docket Unit, MS-4
Docket No. 09-AFC-05C
715 P Street
Sacramento, CA 95814-5512

Comments will also be accepted during the scheduled business meeting. All comments and materials filed with the Docket Unit will be added to the facility Docket Log and become publicly accessible on the CEC's project webpage.

If you have questions about this notice, please contact Compliance Project Manager Ashley Gutierrez, Compliance Monitoring and Enforcement Unit, Safety and Reliability Branch, at (916) 839-0400 or via e-mail at ashley.gutierrez@energy.ca.gov.

For information on public participation, please contact the CEC's Office of Public Advisor, Energy Equity, and Tribal Affairs at (916) 957-7910 or email at publicadvisor@energy.ca.gov.

News media inquiries should be directed to the CEC's Media Office at (916) 654-4989, or by e-mail to mediaoffice@energy.ca.gov.

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MOJAVE SOLAR PROJECT (09-AFC-05C)
Petition to Amend the Commission Decision
EXECUTIVE SUMMARY

Ashley Gutierrez

INTRODUCTION

On December 26, 2023, Mojave Solar, LLC (project owner) filed a post certification Petition (TN 253750, TN 253751, and TN 253752) with the California Energy Commission (CEC) requesting to amend the Mojave Solar Project (MSP) CEC Final Decision (Decision) to construct and operate two new permanent evaporation ponds at the facility. On September 25, 2024, an addendum to the petition was also filed (TN 259278) to update the power output of the facility from 250 megawatts (MW) to 275 MW. The CEC staff (staff) has completed its review of all materials received.

The nominal 275 MW[2] solar electric generating facility is located at 42134 Harper Lake Road in unincorporated San Bernardino County on approximately 1,765 acres, halfway between Barstow and Kramer Junction and about nine miles northwest of Hinkley. The MSP was certified by the CEC in September 2010 and began commercial operation in December 2014.

DESCRIPTION OF PROPOSED CHANGE(S)

The project owner seeks approval to construct two new permanent evaporation ponds, one at Alpha and one at Beta power blocks (A-3 and B-3), to enhance water storage capacity and facilitate the maintenance of the four existing evaporation ponds.

MSP includes two evaporation pond areas, one at Alpha block located in the northern portion of the site and one at Beta block located at the southern part of the site. The Alpha and Beta Pond areas have two existing ponds (east and west ponds) with four sumps, two sumps in the east pond and two sumps in the west pond. The Alpha and Beta Pond systems are identical.

The existing evaporation ponds were constructed in 2012 and began receiving wastewater in August 2014. Over the years the wastewater has increased steadily, and the evaporation rate gradually decreased. The decreased evaporation rate is a result of the normal water evaporation process which increases the salt concentration at the ponds, slowing the evaporation rate.

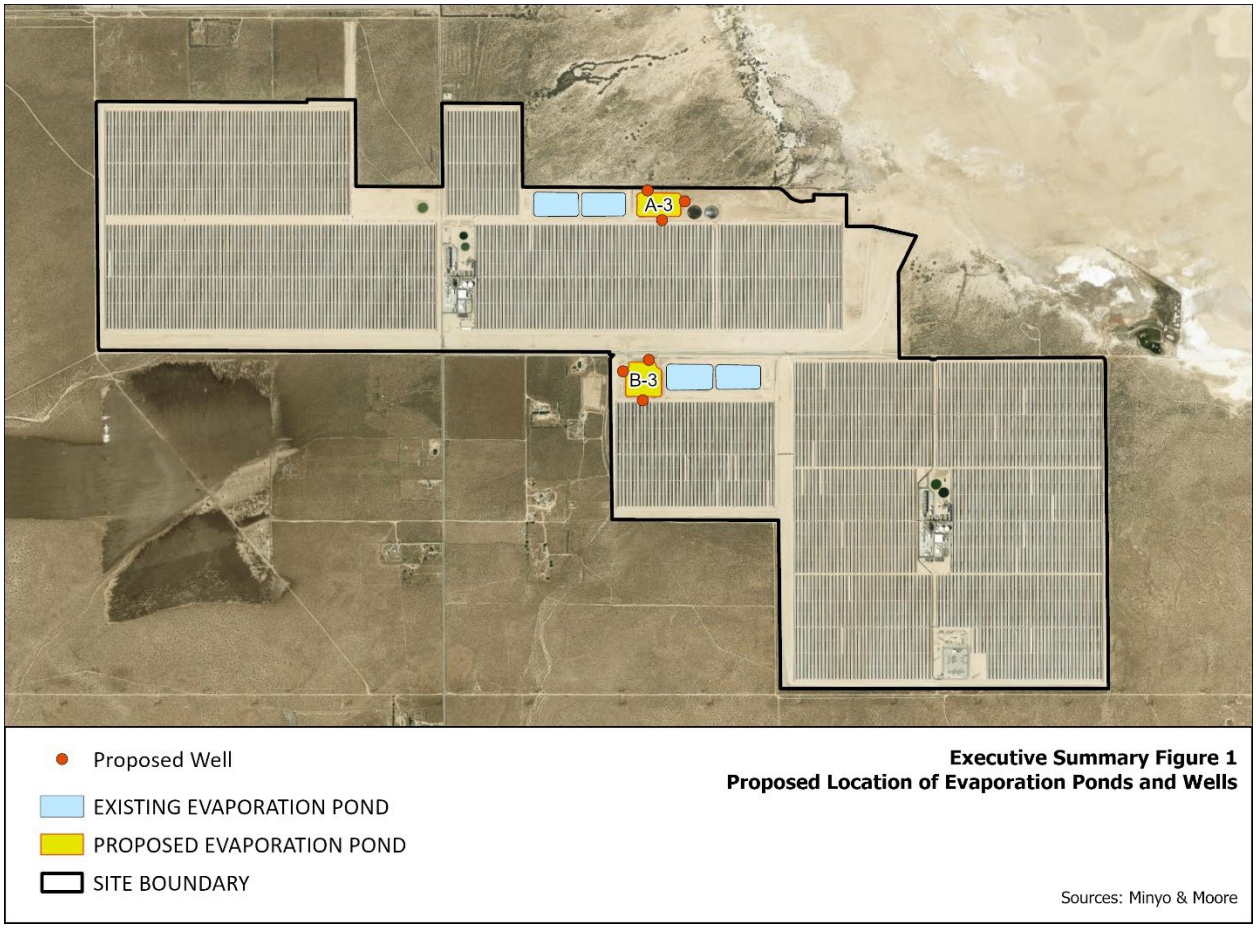
2 On September 25, 2024, MSP requested a retroactive increase in megawatt output from 250 MWs to 275 MWs and the request to update the project description is included in this petition (TN 259278).

MSP's subcontractor, Hushmand Associates, Inc. (HAI), prepared design plans for the construction of the new evaporation ponds to replicate the design of the existing ponds by utilizing a containment system of a lower 40-one thousandth of an inch (mil) high density polyethylene (HDPE) geomembrane, geonet interstitial drainage layer, and upper 60-mil HDPE geomembrane. The ponds would include the same leak detection system as the existing evaporation ponds. The design includes neutron probe monitoring pipes and perched groundwater monitoring wells for enhanced detection monitoring beyond the liner system. The basic design criteria include:

- Ponds would be roughly 250,000 square feet
- The depth of each pond would be nominally 10-feet, which includes the 2-feet of freeboard
- A 40-mil HDPE lower geomembrane, interstitial leak collection geonet, and upper 60-mil HDPE geomembrane
- A leak detection sump, piping, and manhole system
- Neutron probe test pipes and ground water detection monitoring wells; and
- Six new groundwater monitoring wells (three at A-3 and three at B-3).

The proposed area of the new A-3 pond's elevation ranges from 2,041-feet mean sea level (MSL) in the southwest corner, to 2,037-feet MSL in the northeast corner. The average grade is approximately 0.5%. The A-3 site has little vegetation due to prior ground disturbance related to the original construction of the project. The proposed area of the new B-3 pond is flat with elevations ranging from 2,063-feet MSL in the southwest corner to 2,057-feet MSL in the northeast corner. The B-3 site is located in the area where the assembly building was formally located and used to construct the solar panels during the original construction of MSP. The building structure was removed; however, the building's concrete slab and surrounding asphalt pavement remain in place. Since the site is paved, there is little to no vegetation. The concrete slab and asphalt paving would be removed prior to construction of the B-3 pond. **Executive Summary Figure 1** shows where the new evaporation ponds and monitoring wells would be located.

Executive Summary Figure 1
Proposed Location of the Two New Evaporation Ponds and Monitoring Wells



Lastly, MSP has proposed to update the CEC Decision to reflect a 2015 amendment to the facility's LGIA which changed power output of the facility from 250 MW to 275 MW, an increase of 25 MW. No physical changes to the MSP have occurred as a result of this MW increase.

The purpose of the CEC's review process is to assess whether the project changes proposed in the petition would have a significant impact on the environment or cause the project to not comply with applicable LORS (Cal. Code Regs., tit. 20, § 1769).

NECESSITY FOR THE PROPOSED CHANGE(S)

The primary purpose and need for this amendment are to enhance water storage capacity to facilitate the maintenance of the four existing evaporation ponds and update the project output capacity to 275 MW to reflect the plant's actual power output.

CEC STAFF REVIEW AND CONCLUSION

Consistent with the California Code of Regulations, title 20, section 1769, staff has reviewed the petition for potential environmental effects and consistency with LORS. Based on staff's analysis, contained below, staff has concluded that the proposed changes to the MSP would not have a significant effect on the environment, or cause the project to fail to comply with any applicable LORS, with the adoption of new and modified COCs in the areas of Biological Resources, Soil and Water Resources, and Waste Management. Consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval.

Staff concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) apply to the proposed change.

Lastly, based on the analysis below, staff concludes the proposed change does not meet any of the criteria requiring the production of subsequent or supplemental review pursuant to Public Resources Code section 21166 and California Code of Regulations, Title 14, sections 15162 and 15163. The existing extensive framework of mitigation covering the original project along with the proposed modifications of biological resources, soil and water resources and waste management COCs and new biological resource COC address potential impacts from the construction and operation of the ponds.

STAFF'S ASSESSMENT OF THE PROPOSED PETITION

Staff's assessment of the proposed changes considered the potential impacts to the population within the disadvantaged community, including the environmental justice population within a six-mile radius of MSP.

Staff reviewed the petition for potential environmental effects and consistency with applicable LORS. Staff's conclusions for all technical and environmental areas are summarized in **Executive Summary Table 1.**

Executive Summary Table 1
Summary of Conclusions for all Technical and Environmental Areas

Technical Areas Reviewed	CEQA				Conforms with applicable LORS
	Potentially Significant Impact	Less Than Significant Impact with Mitigation (with Revised or New COCs)	Less Than Significant Impact (with or without Existing COCs)	No Impact	
Air Quality			X		X
Biological Resources		X			X
Cultural Resources			X		X
Efficiency				X	
Facility Design			X		X
Geological and Paleontological Resources			X		X
Hazardous Materials Management			X		X
Land Use				X	X
Noise and Vibration			X		X
Public Health			X		X
Reliability					
Socioeconomics			X		
Soil and Water Resources		X			X
Traffic and Transportation			X		X
Transmission Line Safety and Nuisance				X	X
Transmission System Engineering					X
Visual Resources				X	X
Waste Management		X			X
Worker Safety and Fire Protection			X		X

Areas shown in gray are not subject to CEQA consideration or have no applicable LORS the project must comply with.

For the technical areas of Biological Resources, Soil and Water Resources, and Waste Management, staff has proposed new and/or revised COCs. With the revisions of COCs **BIO-1, BIO-13, BIO-19, SOIL & WATER-2**, **SOIL & WATER-8** and **WASTE-10** in addition to the inclusion of the new COC, **BIO-22**, the project would continue to comply with all applicable LORS. The proposed project change would not result in significant impacts to Biological Resources, Soil and Water Resources, and Waste Management. The details of the revised COCs can be found under the Biological Resources, Soil and Water Resources, and Waste Management sections at the end of this Staff Analysis.

For the remaining environmental and technical areas, staff has determined that the modified project would continue to comply with applicable LORS, and the project change would not result in any significant adverse environmental impacts or require a change to any COCs. The basis for each of staff's conclusions are provided below:

AIR QUALITY

The construction of two evaporation ponds would include some grading activities, which would result in emissions from the vehicles and fugitive dust. However, these emissions would be classified as short term (five to seven months) and are expected to be much lower than those from construction of the original project. Existing COCs **AQ-SC3** through **AQ-SC5** in the Decision, which address all project construction activities, would continue to apply to the proposed project change.

In addition, any construction equipment used for the proposed project change would be temporary, and stationary source air permits would not be required through the local air district. Any diesel equipment used would still be required to meet the State of California diesel requirements. As applicable, the diesel equipment used would need to be registered through the Statewide Portable Equipment Registration Program or Diesel Off-road On-line Reporting System and associated equipment permits would be retained onsite.

The increased interconnection capability is not associated with a change in emissions from the project and therefore does not cause any air quality/greenhouse gas impacts.

Therefore, impacts to air quality and greenhouse gas emissions would remain less than significant with existing COCs. The modified MSP would continue to comply with applicable LORS related to air quality and greenhouse gas emissions.

BIOLOGICAL RESOURCES

As discussed in the Biological Resources staff analysis located at the end of this document, the proposed project change requires modifications to existing COCs due to changes in LORS related to the addition of two new permanent evaporation ponds at the facility. Since the project was originally licensed, the western burrowing

owl (*Athene cunicularia hypugaea*) has been designated as a candidate species for listing under the California Endangered Species Act.

Staff has conducted further analysis, which includes recommending proposed changes to existing COCs **BIO-1** (Designated Biologist), **BIO-13** (Burrowing Owl Impact Avoidance, Minimization and Mitigation Measures), and **BIO-19** (Evaporation Pond Monitoring and Adaptive Management Plan), and the addition of a new COC **BIO-22** (Burrowing Owl Habitat Enhancement and Maintenance) for the take authorization of western burrowing owl under the CEC's in-lieu permitting authority, as detailed in the Biological Resources section below.

Staff concludes that implementation of existing, modified, and new COCs would ensure that impacts would remain less than significant. Implementation of existing COCs **BIO-2** through **BIO-8**, together with modified COCs **BIO-1**, **BIO-13** and **BIO-19** and new COC **BIO-22**, would ensure compliance with applicable LORS for biological resources during construction and operation.

CULTURAL RESOURCES

The project owner indicates soil disturbances are anticipated with the following project elements:

- Removal of existing concrete foundation and pavement at the former mirror assembly building location, resulting in soil disturbances 4-10 inches below existing ground surface
- Cuts for Alpha and Beta Ponds to 6.5 and 7-feet below existing grade, respectively
- Excavation for Leachate Collection and Removal System (LCRS) collection manholes at Alpha Pond to approximately 10-feet below existing ground surface
- Excavation of LCRS collection manholes at Beta Pond to approximately 12-feet below existing ground surface
- Excavation for Alpha and Beta Pond leak detection drainpipes, extending a maximum of 5-feet below pond bottom
- Wastewater force main pipeline and control valves, 4-feet below existing grade
- Cut for a stormwater runoff retention basin to 5-feet below existing ground surface
- Perched groundwater wells drilled with an 8-inch diameter auger to 35 to 45-feet in depth

Previous studies (EDAW 2009, pages 29–32; SWCA 2009, page 29) have indicated that three previously recorded historic-era archaeological resources were identified within the MSP area of analysis, and that the project area has high potential to contain buried archaeological deposits. The MSP license contains seven COCs pertaining to the inadvertent discovery of cultural resources (**CUL-1** through **CUL-7**). These COCs

include contingencies for the identification, evaluation, and mitigation of inadvertent impacts on buried cultural resources. Staff concludes that implementation of the existing cultural resources COCs (**CUL-1** through **CUL-7**) would reduce any impacts resulting from inadvertent, construction-phase discoveries of cultural resources to a less-than-significant level.

Staff consulted the County of San Bernardino County Plan and has determined that the modified facility would continue to comply with applicable LORS regarding cultural resources (see County of San Bernardino 2020). Staff concludes that the activities described in the petition would not cause significant impacts to cultural resources.

EFFICIENCY

There would be no impact to the original level of thermal efficiency of the power plant as the result of this petition. The PTA aims to restore the project's original reliability and power output by expanding water storage capacity and enabling maintenance of the existing evaporation ponds. Although wastewater has increased and evaporation has declined over time—reducing reliability and efficiency—the update would align the plant's stated capacity with its actual 275-MW performance, restoring the project's original efficiency level.

FACILITY DESIGN

Construction of the new evaporation ponds at the MSP must be conducted in accordance with the 2025 edition of the California Building Standards Code (CBSC) and the California Code of Regulations, Title 27, including all applicable Title 27 requirements for the design, construction, and operation of surface impoundments. Implementation of the existing Facility Design COCs adopted in the Decision, along with construction compliance oversight by the CEC's delegate Chief Building Official (DCBO), will ensure compliance with the CBSC. In addition, the Lahontan Regional Water Quality Control Board (LRWQCB) will provide regulatory oversight, in coordination with the CEC's Compliance Project Manager (CPM), to ensure that the surface impoundments are designed and constructed in full compliance with Title 27 standards.

GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The new ponds are planned with the same design as the original four ponds. The depth of each pond is expected to be about 10-feet below the existing grades. Grading cuts and fills at the pond sites are expected to be balanced to minimize the need to export excess material to on-site stockpiles.

Potential impacts from geologic hazards, and the project's impacts on geologic hazards would be mitigated by conformance of the construction and operation of the proposed project modification with the 2025 CBSC, existing LORS, and existing COCs **CIVIL-1**, **CIVIL-2**, **GEN-1**, **GEN-5, SOIL & WATER-1, SOIL & WATER-2,** and **SOIL &**

WATER-3. With the implementation of the COCs, the impact of geologic hazards would remain less than significant.

Cuts into undisturbed native materials below a depth of 2-feet have a high potential to encounter paleontological resources. Compliance with applicable LORS and existing paleontological resource COCs **PAL-1** through **PAL-7** would mitigate potential impacts related to paleontological resources. Therefore, impacts would remain less than significant.

HAZARDOUS MATERIALS MANAGEMENT

The proposed construction of two new permanent evaporation ponds at each power block would not use extremely hazardous materials during construction. The only hazardous materials used during the construction phase would be paints, cleaners, solvents, gasoline, motor oil, welding gases, and lubricants. Hazardous materials would be stored, handled, and used in accordance with applicable LORS. When not in use, any hazardous materials would be stored in designated construction areas in compliance with LORS. Therefore, the proposed project modification would not have a significant impact on the offsite public or the environment.

LAND USE

The two new evaporation ponds would be installed on previously disturbed land within the MSP plant property boundary in very close proximity to the MSP's existing evaporation ponds. The use of evaporation ponds to store reject cooling tower water is an existing feature of the facility. The MSP would continue to meet all applicable COCs and LORS. The proposed change would not physically divide an established community or cause a significant environmental impact due to a conflict with LORS adopted for the purpose of avoiding or mitigating an environmental effect. Further, the change would not result in the conversion of farmland or forest land. Therefore, no impact to land use would occur.

NOISE AND VIBRATION

The nearest sensitive receptors (residences) are located approximately 2,400-feet from the project site. Construction activities associated with this petition would be temporary and would occur during daytime hours that are consistent with the local noise ordinance, San Bernadino County General Performance Standard Section 83.01.080(g)(3) (San Bernardino 2007). Any noise generated during construction activities would result in a less-than significant impact with implementation of the existing Noise and Vibration COC in the Decision.

The operational noise would not be affected as a result of this petition.

PUBLIC HEALTH

The construction of two evaporation ponds would include some grading activities. Any construction equipment used would be temporary and stationary source air permits

would not be required through the local air district. Any diesel equipment used would still be required to meet the State of California diesel requirements. The public health impacts of the proposed construction activities would remain less than significant.

The increased interconnection capability would have no impact on public health as there would be no emissions change compared with existing levels. The modified MSP would continue to conform with the applicable LORS related to public health.

RELIABILITY

There would be no impact to the power plant's original reliability level as the result of this petition. The petition aims to restore the project's original reliability and power output by expanding water storage capacity and enabling maintenance of the existing evaporation ponds. Although wastewater has increased and evaporation has declined over time—reducing reliability and efficiency—the update would align the plant's stated capacity with its actual 275-MW performance.

SOCIOECONOMICS

The proposed installation of the two new evaporation ponds would take approximately five to seven months to complete and require a maximum of 20 workers. The modification would not require any changes in the operations workforce. There are no socioeconomics-related LORS or COCs applicable to the change, and there would be less than significant workforce-related impacts on population, housing, and public services.

SOIL AND WATER

As discussed in the Soil and Water Resources staff analysis located at the end of this document, the proposed project change would require modification to COC **SOIL & WATER-8** to better monitor the water balance between water treatment plant intake and discharge to all the evaporation ponds, including the two additional ponds proposed in this amendment. The evaporation ponds would be designed and constructed in accordance with the updated waste discharge requirements (WDRs) prepared in cooperation with the LRWQCB and incorporated into COC **SOIL & WATER-2** as Attachments A, B, and C, which are included at the end of this document. It should be noted that no LORS applicable to the project associated with soil and water resources have changed since the Decision was published in September 2014.

TRAFFIC AND TRANSPORTATION

The installation of the two new evaporation ponds would require approximately 12 truck trips for the delivery of materials and approximately three 17-ton dump trucks for onsite use for temporary placement of the soil piles onsite. All other materials would be delivered by normal mail carriers, such as FedEx or United Parcel Service (UPS). The evaporation ponds would be constructed in the same general locations as the existing evaporation ponds. The modification would not require any changes in the operations

workforce. The proposed change would generate a negligible amount of temporary vehicle trips and would comply with all applicable LORS. There are no transportation COCs in the Decision applicable to the change. The proposed change would not conflict with LORS addressing the circulation system, substantially increase hazards, or result in inadequate emergency access. Therefore, the construction of the two new evaporation ponds would continue to have a less than significant impact to transportation.

TRANSMISSION LINE SAFETY AND NUISANCE

The proposed modifications would have no impact on Transmission Line Safety and Nuisance. No modifications to the previously analyzed and approved transmission lines associated with the project would be needed as a result of this petition.

TRANSMISSION SYSTEM ENGINEERING

The MSP Addendum to Petition for Modification – LGIA Amendment proposed to increase the plant output from 250 MW to 275 MW. The additional power output to the existing transmission grid was approved by the California ISO that the total MSP generation would not exceed the approved capacity of 275 MW.

The proposal to increase generation by 25 MW would not cause additional downstream transmission impacts. The project will comply with applicable LORS and would not require a change to any of the COCs.

VISUAL RESOURCES

The proposed evaporation ponds would be installed on disturbed land within the MSP plant boundary in the same general location as the existing evaporation ponds. The change would not be perceptible from the public views of the site. There are no visual resources COCs in the Decision applicable to the change. The MSP would remain in compliance with LORS pertaining to visual resources. The requested change would not have a substantial adverse effect on a scenic vista, scenic resources, or the existing visual character or quality of public views of the MSP site and its surroundings and would not create a new source of substantial light or glare adversely affecting day or nighttime views in the area. Therefore, the construction and operations of the two additional ponds would have no impact to visual resources.

WASTE MANAGEMENT

The purpose of adding two new evaporation ponds is to increase water treatment capacity to compensate for decreasing evaporation potential due to rising salinity and recently installed bird netting. According to the petition, evaporation pond construction activities would not increase the generation of solid waste. Wastes generated during construction of the evaporation ponds would be managed in accordance with the Operations Waste Management Plan prepared per COC **WASTE-9**. In addition, LRWQCB staff requested to be included in transmittals for COC **WASTE-10** to ensure

consistency with the revised WDRs included in COC **SOIL & WATER-2**, in Attachments A, B, and C, found at the end of this document.

WORKER SAFETY AND FIRE PROTECTION

During the construction of the two new permanent evaporation ponds for each power block, continued compliance with existing COCs **WORKER SAFTEY-1** and **WORKER SAFETY-3** would ensure that the project modification would comply with applicable LORS. Therefore, the proposed project modification would not have a significant impact on worker safety and health or the offsite public.

ENVIRONMENTAL JUSTICE

CALENVIROSCREEN

Staff reviewed CalEnviroScreen 4.0 data to determine whether the United States census tract where the MSP is located (06071011600) is identified as a disadvantaged community. This science-based mapping tool is used by the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria pursuant to Health and Safety Code section 39711 as enacted by Senate Bill 535 (De León, Chapter 830, Statutes of 2012). The CalEnviroScreen 4.0 overall percentile score for this census tract is 56.86 and, thus, is not identified as a disadvantaged community[3].

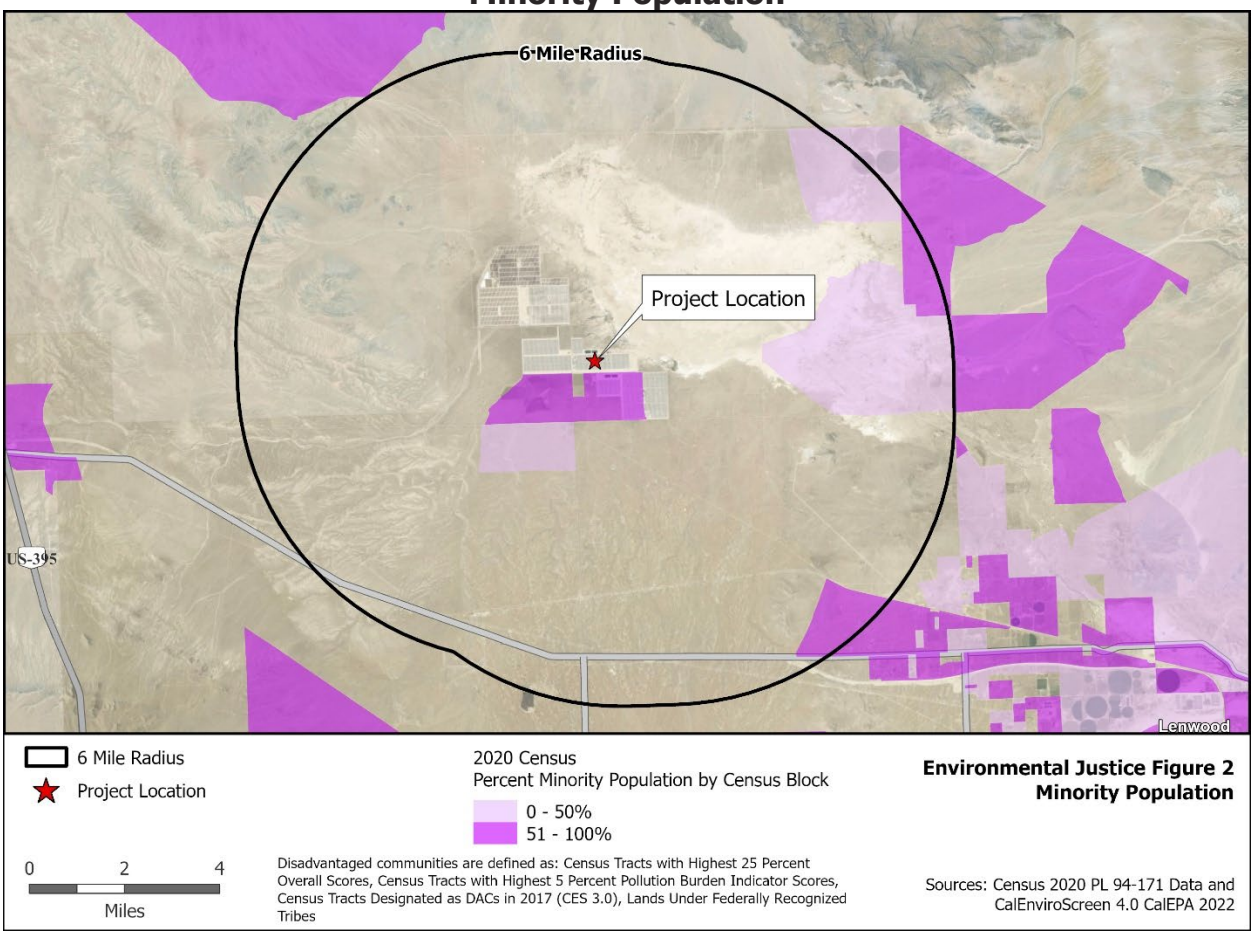
ENVIROMENTAL JUSTICE

Environmental Justice Figure 2 shows 2020 census blocks in the six-mile radius of the Mojave Solar Project with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population based on race and ethnicity as defined in the United States Environmental Protection Agency's *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. Staff conservatively obtains demographic data within a six-mile radius around a project site based on the parameters for dispersion modeling used in staff's air quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts

3 The four categories of geographic areas identified by CalEPA as disadvantaged are: 1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0, 2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores, 3) Census tracts identified in the 2017 DAC designation, regardless of their scores in CalEnviroScreen 4.0, and 4) Lands under the control of federally recognized Tribes. Source: CalEPA Final Designation of Disadvantaged Communities: May 2022 https://calepa.ca.gov/envjustice/ghginvest/

would not extend this far from the project site for most other technical areas included in staff's EJ analysis.

Figure 2 Environmental Justice
Minority Population



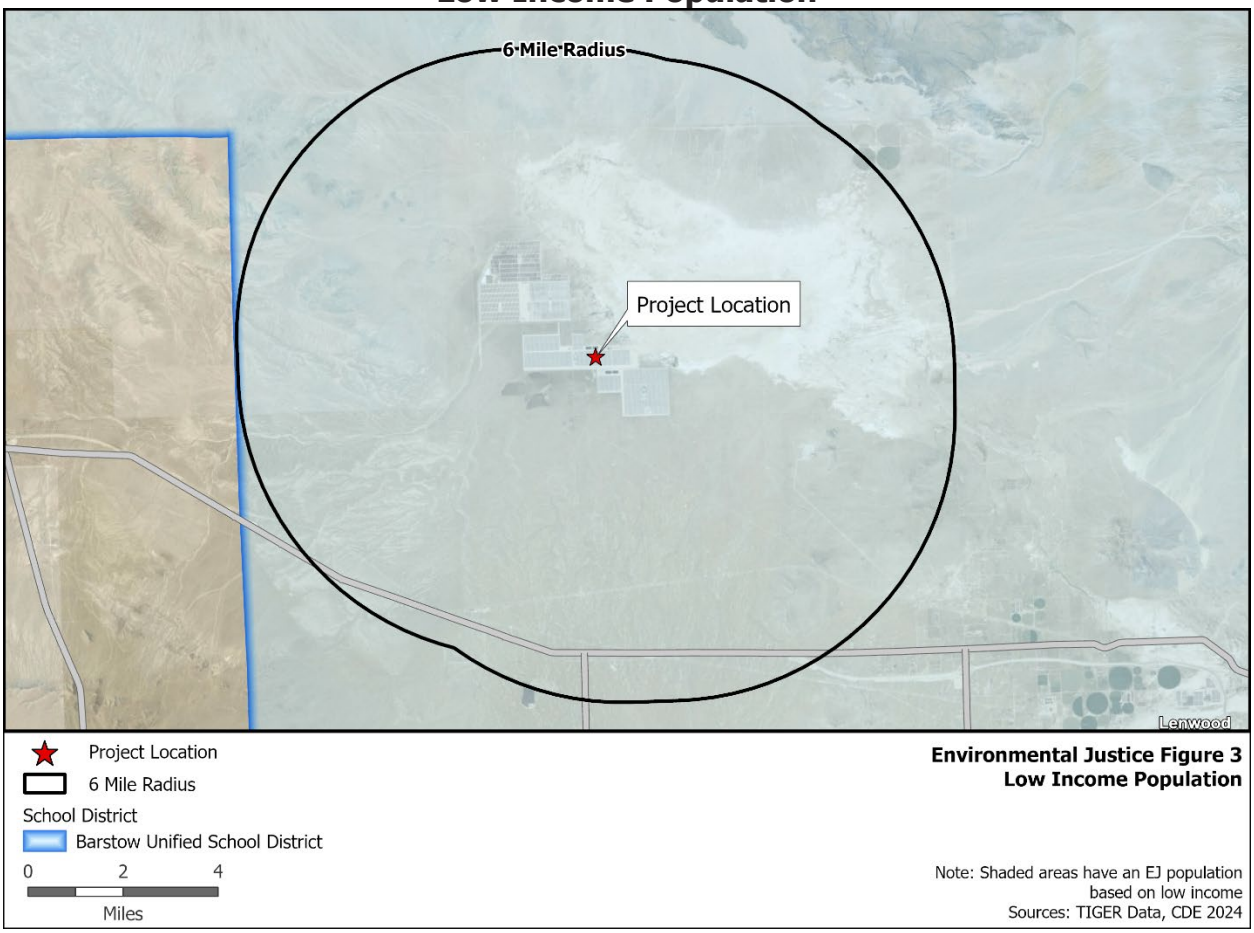
Environmental Justice – Table 1
Low Income Data within the Project Area

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Barstow Unified	6,396	4,793	74.9%
REFERENCE GEOGRAPHY			
San Bernardino County	397,426	278,213	70.0%
Source: CDE 2023. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2022-2023, http://dq.cde.ca.gov/dataquest/.			

Based on California Department of Education data in the **Environmental Justice Table 1**, staff concluded that the percentage of those living in the Barstow Unified School District (in a six-mile radius of the project site) and enrolled in the free or reduced-price meal program is larger than those in the reference geography. Thus, it is

considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. **Environmental Justice – Figure 3** shows where the boundaries of the school district are in relation to the six-mile radius around the Mojave Solar Project site.

Figure 3 Environmental Justice
Low Income Population



Environmental Justice Conclusions

For this petition, the following technical areas (if affected) consider impacts to EJ populations: Air Quality, Cultural Resources (indigenous people), Hazardous Materials Management, Noise and Vibration, Public Health, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, and Worker Safety and Fire Protection. For these technical areas, staff concludes that impacts would be less than significant as a whole and thus would be less than significant on the EJ population represented in **Environmental Justice Figure 2**, **Figure 3**, and **Table 1**.

In the Soil and Water Resources and Waste Management analysis located at the end of this document, staff proposes changes to existing COCs to ensure consistency with

LORS for protection of water quality. Staff has determined that by adopting the proposed changes to the existing COCs, the proposed project changes would not cause significant impacts for any population in the project's six-mile radius, including the EJ population. Impacts to the EJ population are less than significant.

CEC STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff reviewed the petition, and all the information provided to staff related to the petition pursuant to California Code of Regulations, title 20, section 1769 for potential environmental effects and consistency with applicable LORS. Consistent with these regulations, staff has reviewed the petition for potential environmental effects, and consistency with applicable LORS, and MSP's COCs.

Staff concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) are applicable to the proposed change. Staff also concludes the addition of the evaporation ponds and proposed modifications and new COCs for Biological Resources and Soil and Water Resources needed for LORS consistency do not meet any of the criteria requiring the preparation of subsequent or supplement review pursuant to Public Resources Code section 21166 or California Code of Regulations, title 14, sections 15162 and 15163.

Consistent with California Code of Regulations, title 20, section 1769(a)(4), staff is bringing this petition to the Commission for approval.

Staff has recommended the modification of three existing COCs, **BIO-1** (Designated Biologist), **BIO-13** (Burrowing Owl Impact Avoidance, Minimization and Mitigation Measures), and **BIO-19** (Evaporation Pond Monitoring and Adaptive Management Plan); and a new COC **BIO-22** (Burrowing Owl Habitat) for consistency with the California Endangered Species Act (CESA) for biological resources.

For Soil and Water Resources, staff has recommended modifications to two COCs, **SOIL & WATER-2** (WDRs) and **SOIL & WATER-8** (Wastewater Collection System Requirements) to ensure consistency with the LRWQCB WDR requirements and to better monitor the water balance between water treatment plant intake and discharge to the evaporation ponds.

Lastly, staff has recommended modification to **WASTE-10** (Heat Transfer Fluid (HTF) Contaminated Soil Testing) to ensure LRWQCB staff is included in the notification submittal for hazardous material reporting as well as an update to the US EPA testing method for consistency with the revised WDRs included in **SOIL & WATER-2**.

Staff concludes with regard to the proposed changes to the MSP (1) there would continue to be a less than significant effect on the environment, (2) the changes would not cause the project to fail to comply with any applicable LORS, and (3) the changes would not require a change to, or deletion of, any COCs as adopted in the Decision or

previous amendments to that decision, except for those related to Biological Resources, Soil and Water Resources, and Waste Management.

For the modifications to the Biological Resources, Soil and Water Resources, and Waste Management COCs in the Decision and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), in addition to the conclusions made above, staff concludes the construction and operation of the two new evaporation ponds at MSP would not result in significant impacts with the proposed revisions of existing COCs **BIO-1**, **BIO-13**, **BIO-19, SOIL AND WATER-2, SOIL AND WATER-8** and **WASTE-10** and the incorporation of the new COC **BIO-22**, to conform with the updates to the CESA and WDRs issued by the CDFW and the LRWQCB, the effect on the environment would be less than significant.

REFERENCES

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MOJAVE SOLAR PROJECT (09-AFC-5C)
Petition to Amend – Two New Evaporation Ponds
BIOLOGICAL RESOURCES

Alex Single

INTRODUCTION

The project owner proposes to construct two new evaporation ponds within the existing footprint of the MSP. Each pond would be approximately 250,000 square feet (5.74 acres) and one pond would be located adjacent to each of the two existing pond systems, Alpha pond system and Beta pond system (TN 253750, TN 253751, and TN 253752). This change in project design, and changes in applicable laws, ordinances, regulations, and standards (LORS) described below, would require modifications to existing COCs **BIO-1** (Designated Biologist Selection), **BIO-13** (Burrowing Owl Impact Avoidance, Minimization and Mitigation Measures) and **BIO-19** (Evaporation Pond Monitoring and Adaptive Management Plan), as well as addition of a new COC, specifically **BIO-22** (Construction and Maintenance of Artificial Burrowing Owl Burrows), to comply with LORS.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

The California Fish and Game Commission approved the western burrowing owl (*Athene cunicularia hypugaea*) as a candidate for potential listing as a protected species under the California Endangered Species Act (CESA) on October 10, 2024. As a candidate for listing, the species is afforded the same protections as a state-listed endangered or threatened species under CESA.

On July 10, 2023, the Governor signed the Western Joshua Tree Conservation Act (WJTCA) into law. The WJTCA prohibits take of western Joshua tree (*Yucca brevifolia*) unless authorized by the California Department of Fish and Wildlife (CDFW) and allows CDFW to issue permits for the incidental take of western Joshua trees. The WJTCA does not apply to MSP as there were no Joshua trees known to occur in the project area, comprising the project footprint plus a one-mile buffer, prior to construction. The project area consisted of fallow and active agriculture, ruderal vegetation, saltbush scrub, tamarisk scrub, developed land, disturbed areas, and dry lakebed (Atlantica 2023). As such, no changes to COCs are required to comply with the WJTCA.

ANALYSIS

Staff reviewed the petition for potential environmental effects and consistency with applicable LORS. Based on this review, staff determined that, given the existing level of development at this location, significant impacts to biological resources are unlikely to occur during construction and operation of the two new evaporation ponds with implementation of existing COCs as well as proposed modifications and new COCs.

As previously analyzed in the Decision, potential impacts to wildlife could occur if excavations are left open overnight without being backfilled or providing escape ramps during construction and impacts to nesting birds near the pond sites could occur due to noise and increased presence of workers and equipment at the site. Implementation of existing COCs **BIO-2** (Designated Biologist Duties), **BIO-3** (Biological Monitor Selection, Qualifications, and Duties), **BIO-4** (Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (Impact Avoidance and Minimization Measures), and **BIO-8** (Pre-Construction Nest Surveys and Impact Avoidance and Minimization Measures for Breeding Birds), together with the proposed modified and new COCs discussed below, would ensure impacts remain less than significant and the project remains in compliance with applicable LORS for biological resources during construction and operation. To address species-specific considerations, the existing Worker Environmental Awareness Program (WEAP) would require updates to reflect the current status of western burrowing owl, per **BIO-5**, Item 2, which requires the WEAP provide a discussion of the locations and types of sensitive biological resources on the project site and adjacent areas, if present.

Impacts to burrowing owl could occur due to vehicle or equipment collisions, crushing or entombment in soil during ground moving, disturbance during the nesting season resulting in loss of a clutch, attraction to roosting or nesting sites (e.g., soil piles, open pipes, or cavities) created during construction and subsequently removed, reaction to increased human presence and disturbance at the site, increased amounts of litter attracting predators such as ravens, and disruption of existing burrowing owl territory structure resulting in owls moving to lower-quality habitat. Impacts causing mortality of burrowing owl would be considered significant under the California Environmental Quality Act (CEQA) unless reduced to less than significant by implementation of COCs, and as discussed below, such mortality would be considered illegal "take" under the Fish and Game Code if not previously authorized.

As described above, western burrowing owls are now a candidate species for listing under CESA. As a candidate species, western burrowing owl is afforded the same protection under CESA as a state-listed endangered or threatened species (Cal. Code Regs., tit. 14, § 783.1), therefore take authorization under CESA would be required before the project owner could take the species. Take is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and G. Code, § 86). Take associated with the project may occur in the form of vehicle or equipment collisions, crushing or entombment in burrows, pursuing, catching, capturing, or attempting to do so related to burrow excavation, transporting injured burrowing owls, and capture and relocation of burrowing owl. Take authorization for a project would typically be issued by CDFW through an Incidental Take Permit (ITP), however, under the Warren-Alquist Act, the CEC retains in-lieu permitting authority and may issue take authorization pursuant to CESA. To issue an ITP, CDFW requires an

applicant to minimize and fully mitigate the impacts of the take authorized under the permit (Cal. Code Regs., tit. 14, § 783.4).

Three fatalities of burrowing owl have been reported during the operation of MSP. This includes two burrowing owls found dead near the northern perimeter fence of Beta East (MS LLC 2023), and one burrowing owl found dead outside the project area (MS LLC 2018). The latter owl was found on Harper Lake Road, a public road used to access MSP, and was likely killed by a vehicle strike (MS LLC 2018). It is unknown if this mortality was caused by project traffic or if the death is unrelated to MSP. As burrowing owls are known to be intermittently present on the project site, and at least two burrowing owl mortalities have occurred on the project site since the start of operation, CEC staff has determined that the project owner should obtain in-lieu CESA take authorization for western burrowing owl in order to proceed with the proposed modifications and continued operation. CEC and CDFW staff met with representatives of the project owner on March 3, 2026, to recommend take authorization and outlined the conditions that would likely be required for such authorization. The project owner did not object to receiving take authorization for the project.

As a COC, the project has previously placed 118.2 acres of land, known as the Lockhart Ecological Reserve, under a conservation easement with an endowment and land management plan to manage the land in perpetuity (Abengoa Solar 2011). This land was preserved to complete permitting requirements associated with MSP, including fulfilling COC **BIO-15**, which required preservation of no less than 118.2 acres of land suitable for Mojave ground squirrel, desert tortoise, and burrowing owl as mitigation for land converted during construction of MSP (Abengoa Solar 2011). The evaporation ponds considered in this petition to amend would be built in the footprint of the MSP project, and conversion of this land from natural burrowing owl habitat to a developed condition has been mitigated for by the establishment of the Lockhart Ecological Reserve. Burrowing owls have not been observed on the Lockhart Ecological Reserve; however, suitable habitat is present and burrowing owl sign has been observed approximately 1,000-feet east of the Reserve (Abengoa Solar 2011). In coordination with CDFW, staff has determined that providing additional lands as compensatory mitigation is not warranted, however the project owner must provide uplift for existing mitigation lands to fully mitigate impacts to burrowing owl.

Staff consulted with CDFW to determine appropriate protective measures and ensure that the project continues to comply with CESA. Based on this coordination, staff has determined that the current COCs do not meet the standard of fully mitigating take, and therefore staff has proposed new and modified COCs. Staff has proposed changes to the existing COCs including requirements for conducting preconstruction burrowing owl survey in the area where new ponds would be constructed (**BIO-13**, Item 1A). In addition, the changes include requiring updates to the existing Burrowing Owl Monitoring and Mitigation Plan (Burrowing Owl Plan) (**BIO-13,** Items 1B, 1C, 4 and 5) to clarify procedures for establishing no-disturbance buffers, excavation and exclusion

of burrows that cannot be avoided, monitoring requirements, and restrictions on handling owls or eggs. Additional provisions address injury or mortality reporting and care for impacted burrowing owls. Finally, the changes include requiring additional qualification for Designated Biologist(s) when conducting work related to burrowing owl (**BIO-1**). These edits to **BIO-1** ensure that the Designated Biologist possesses the necessary expertise to implement take measures for burrowing owl, including specialized knowledge, experience with exclusion and monitoring techniques, and experience with ensuring compliance with CDFW Incidental Take Permit requirements. Staff's proposed edits to the COCs are presented in the section "Proposed Modifications to Conditions of Certification" below.

To ensure impacts to western burrowing owl are fully mitigated and take is authorized through the amended CEC Decision, staff has proposed COC **BIO-22**, which includes requirements to construct and maintain artificial burrows on existing habitat management land and provide a contribution to the endowment to pay for ongoing maintenance of artificial burrows; and prepare a supplemental Property Analysis Record (PAR)-like analysis of maintenance costs required for installation and perpetual maintenance of the artificial burrows. Creating artificial burrows and providing for their monitoring and upkeep in perpetuity would enhance habitat for burrowing owl and would ensure that impacts caused by loss of habitat would meet the standard of full mitigation required by CESA.

With implementation of staff's proposed changes, impacts to western burrowing owl would be avoided and minimized to the maximum extent practicable. Staff's proposed COCs outline full mitigation as necessary pursuant to CESA, therefore CEC's issuance of in-lieu take authorization for western burrowing owl for the construction of the two new evaporation ponds and for the ongoing operation of MSP would be consistent with applicable LORS (namely CESA).

Additionally, during operation, the evaporation ponds could potentially impact protected bird species, desert kit fox, as well as other protected species known to occur on site. Desert kit fox (*Vulpes macrotis arsipus*) is protected under the California Code of Regulations, Chapter 5, Section 460, which prohibits "take" of the species for any reason. Wildlife could access the wastewater in the evaporation ponds, which is known to have high levels of salts, selenium and other contaminants. If the ponds are not netted, operation of the evaporation ponds would likely result in adverse impacts to these species from access to the wastewater. The project owner has proposed to net the new evaporation ponds as part of the project modifications. The existing evaporation ponds at the site are all netted. The netting on the existing evaporation ponds was installed over a period of several years and completed April 2024.

Staff have proposed modifications to existing COC **BIO-19** (Evaporation Pond Monitoring and Adaptive Management Plan) to include the requirement to net all additional evaporation ponds constructed at MSP. The existing COC does not require

the immediate netting of the evaporation ponds but instead provides adaptive management triggers and if those actions failed to reduce bird mortality below an established threshold, then the project owner would be required to net the ponds. For the four existing evaporation ponds, the triggers were met, per **BIO-19**, all ponds were required to be netted. Per the Annual Compliance Reports submitted by the project owner, prior to netting the existing evaporation ponds, several bird species nested on the banks of the ponds, including American avocet (*Recurvirostra americana*) and black-necked stilt (*Himantopus mexicanus*), and numerous bird species swam and foraged in the contaminated wastewater. This resulted in the documented deaths of hundreds of birds and several mammals likely due to exposure to wastewater in the unnetted ponds as well as other factors, such as mortality from the bird deterrents installed around the ponds. Once the threshold was met, per **BIO-19,** the ponds were netted and the mortalities were greatly reduced.

To ensure all newly constructed ponds are netted, staff has proposed modifications to **BIO-19**, which would require netting be installed before the discharge of wastewater, eliminating any need for a threshold criterion. In addition, monitoring of the ponds would continue per the requirements of **BIO-19**. These measures would ensure avoidance and minimization of impacts to special status and common wildlife species.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that impacts would remain less than significant through implementation of existing, modified, and new COCs. Implementation of existing COCs **BIO-2** through **BIO-8**, together with modified COCs **BIO-1**, **BIO-13** and **BIO-19** and new COC **BIO-22**, would ensure compliance with applicable LORS for biological resources during construction and operation.

Staff's proposed modifications to COCs **BIO-1** and **BIO-13** incorporate several changes to ensure that burrowing owl eviction procedures meet current CDFW standards. Staff proposed a new COC **BIO-22** to ensure habitat uplift of existing mitigation lands through construction of artificial burrowing owl burrows and ensure long-term maintenance for the burrows.

Staff agrees with the project owner's recommendation that the ponds be netted before operation. Modified COC **BIO-19** would ensure all evaporation ponds will be netted upon buildout and prior to use.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

Existing Biological Resources COCs will not be sufficient to ensure compliance with applicable LORS for biological resources during construction and operation.

BIO-1 The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at

least three references and contact information, to the Energy Commission Compliance Project Manager (CPM), **for approval** ~~CDFG,~~ **in coordination with CDFW** and U.S. Fish and Wildlife Service (USFWS) ~~for approval~~.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field; and
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. At least one year of field experience with biological resources found in or near the project area;
4. Meet current USFWS Authorized Biologist criteria and demonstrate familiarity with protocols and guidelines for the desert tortoise; and
5. Possess a recovery permit for desert tortoise and a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise and Mohave ground squirrel or have adequate experience and qualifications to obtain these authorizations. It is possible that two biologists may be utilized – each with an MOU for desert tortoise or **Mohave ground squirrel** ~~MGS.~~

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the COCs.

For work related to burrowing owl, the above qualifications shall also apply. In addition, the Designated Biologist(s) must be knowledgeable in the biology and natural history of burrowing owl, have demonstrable experience implementing exclusion and/or monitoring techniques and construction and operational impact monitoring for burrowing owl, and have demonstrable experience implementing conditions of a CDFW Incidental Take Permit or acting as a Designated Biologist, or other experience implementing a CDFW Incidental Take Permit as a Biological Monitor.

Verification: The project owner shall submit the specified information at least 60 days prior to the start of any pre-construction site mobilization. ~~The CPM, CDFG, and USFWS have 30 days to approve or deny proposed Designated Biologist(s).~~ No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

BIO-13 Prior to preconstruction surveys, a Burrowing Owl Monitoring and Mitigation Plan (Burrowing Owl Plan) shall be developed by the project owner **and submitted to the CPM for review and approval** in consultation with ~~the CPM and CDFG~~ **CDFW**. This plan shall include detailed measures to avoid and minimize impacts to burrowing owls in and near the construction areas (if ~~indentified~~ **identified** during surveys) and shall be consistent with ~~CDFG~~ **CDFW** guidance (~~CDFG 1995~~**CDFW 2012**). In addition, the plan shall identify the optimal time to concurrently relocate both desert tortoise and burrowing owl. At a minimum, the following measures shall be included in the plan and implemented by the project owner to manage their construction site, and related facilities, in a manner to avoid, minimize, or mitigate impacts to breeding and foraging burrowing owls.

The project owner shall revise the currently approved Burrowing Owl Plan to include all relevant changes below, to be reviewed and approved by the CPM.

1. Pre-Construction Surveys and Nest Avoidance. The Designated Biologist shall conduct pre-construction surveys for burrowing owls within the project site and a ~~160 foot~~ **500-foot** buffer. These surveys shall be conducted concurrent with desert tortoise clearance surveys, to the maximum extent possible. The following shall be included in the Plan and implemented to avoid and minimize impacts to burrowing owls onsite:

A. Pre-construction surveys shall be conducted **within 15 calendar days** prior to **start of any new site mobilization or ground disturbance, including construction of the two new evaporation ponds. Project activities conducted in previously-disturbed areas may not require a pre-construction survey, at the direction of the CPM.** ~~the nesting season (February 1 through August 31) and all burrowing owls will be passively relocated using one-way trap doors. Once the Designated Biologist has verified that all burrowing owls have vacated an occupied burrow, the Designated Biologist shall collapse the burrow, preventing re-occupation.~~ **The project owner shall provide a proposed survey methodology for CPM approval at least 30 days before surveys begin. After surveys are complete, the project owner shall provide a report including but not limited to methodology, survey date, apparent status of each burrow (potential, known, or nesting), and a map of burrows if present, to the CPM.**

B. ~~If ground disturbance cannot be avoided in areas where nesting burrowing owls are active, a 250-foot exclusion area around occupied burrows will be flagged and this area will not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through~~

~~non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. The exclusion area shall remain connected to natural area(s) to the extent possible, to avoid completely surrounding the owl with construction activities and/or equipment.~~ **The project owner shall establish no-disturbance buffer zones around known and nesting burrowing owl burrows according to the following guidelines:**

If a known burrowing owl burrow (a burrow that shows evidence of current or past use within the last 3 years or is known based on observation to have been used in the past) or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) is discovered, the project owner shall establish a minimum no-disturbance buffer. A no-disturbance buffer as described in the Burrowing Owl Plan shall be established around known burrowing owl burrows. Routine project activities on the project site such as driving vehicles for site access and washing solar troughs do not require buffers unless recommended by the Designated Biologist, in coordination with the CPM.

If a burrowing owl burrow used for nesting (e.g., known burrowing owl burrow with indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation) is discovered within or immediately adjacent to MSP, the project owner shall follow procedures outlined in the Burrowing Owl Plan.

If burrowing owl burrows cannot be avoided as described above, then the project owner shall follow the procedures outlined in section C below.

If burrowing owl are visibly stressed by equipment or workers in the vicinity after no-disturbance buffers are established, all work in the vicinity shall immediately cease and increased no-disturbance buffers will be determined by the Designated Biologist(s) based on their behavioral observations of the affected burrowing owl. The Designated Biologist(s) shall report to CPM any buffers that were increased due to behavioral observations for evaluation and determination of buffer effectiveness.

C. The Designated Biologist, or Biological Monitor under direct supervision of the Designated Biologist, shall excavate known or potential burrows that exhibit signs of current or past burrowing owl use or characteristics suggestive of burrowing owl burrow

(including burrows in natural substrate and in/under man-made structures) that cannot be avoided and that are within the footprint of ground-disturbing activities. Exclusion shall occur outside the breeding season unless otherwise approved by the CPM in advance in writing. Burrows to be destroyed shall be fully excavated, filled with dirt, and compacted to ensure that burrowing owl cannot reenter or use the burrow during the period that work occurs near the burrows. An established burrowing owl burrow no-disturbance buffer may be removed once the burrow is collapsed and the burrowing owl(s) is/are no longer using the burrow.

- **Potential burrowing owl burrows (any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or has been used by a burrowing owl) without any signs of burrowing owl use or characteristics suggesting it is a burrowing owl burrow may be excavated immediately by the Designated Biologist(s) or Biological Monitor(s) under the direct supervision of the Designated Biologist without prior camera monitoring.**
- **Excavation of known burrowing owl burrows shall only occur after the Designated Biologist(s) have determined that burrowing owl is not currently present after 4 consecutive 24-hour period of monitoring with infrared cameras. Burrowing owl burrows shall be carefully excavated with hand tools, or by mechanical means if a specific methodology is approved in writing by the CPM, until it is clear no burrowing owl individuals are inside. Excavation shall be conducted by at least two biologists, lead by an Authorized Biologist, with one individual always having a line of sight on the burrow, while the other always has line of sight on the shovel. If during the excavation process, evidence of current use by burrowing owl is discovered, then burrow excavation shall cease immediately, and camera monitoring as described above shall be conducted/resumed and the CPM shall be notified immediately.**
- **Burrowing owl burrows used for nesting shall not be excavated until biological and camera monitoring confirm that the chicks have fledged and are no longer dependent on the nest and then only after written concurrence from the CPM in coordination with CDFW.**

2. Artificial Burrow Installation. Prior to any ground-disturbing activities, the project owner shall install five artificial burrows for each identified burrowing owl burrow in the project area that would be destroyed, within the approved compensatory habitat area. The Designated Biologist shall survey the site

selected for artificial burrow construction to verify that such construction will not affect desert tortoise or Mohave ground squirrel or existing burrowing owl colonies in the relocation area. Installation of the artificial burrows shall occur after baseline surveys of the relocation area and prior to ground disturbance or heavy equipment staging. Design of the artificial burrows shall be consistent with ~~CDFG~~ **CDFW** guidelines (CDFG ~~1995~~**2012**) **or more recent guidance** and shall be approved by the CPM in consultation with ~~CDFG~~ **CDFW**.

3. Passive Relocation. Prior to passive relocation, any owls that will be relocated shall be color banded with air-craft aluminum bands in accordance with the guidance provided by USGS bird banding lab (http://www.pwrc.usgs.gov/bbl) to monitor relocation success. Color banding shall not be conducted during the breeding season. During the non-breeding season, owls would be given a minimum of three weeks to become familiar with the new artificial burrows, after which eviction of owls within the project site could begin. Use of one-way doors described by Trulio (1995), and Clark and Plumpton (2005) would be used to facilitate passive relocation of owls.

A. Monitoring and Success Criteria. The Designated Biologist shall survey the compensatory mitigation area and a suitable habitat within a 600-meter radius from the project site to assess use of the artificial burrows by owls and relocation success after exclusion from the project area. Surveys shall be conducted using methods consistent with Phase II and Phase III California Burrowing Owl Consortium guidelines (CBOC 1993). Surveys shall be conducted two times in the spring and two times in the winter following eviction. The second survey within a season shall be conducted within 30 days of the first. Surveys shall continue for a period of two years to encompass a total of two spring seasons (4 total spring surveys) and two winter seasons (4 total winter surveys).

   Surveys and monitoring shall be conducted using non-invasive methods (i.e., high-powered binoculars, spotting scope, or camera). Owls shall not be trapped or otherwise handled to read the color band.

   If survey results indicate burrowing owls are not nesting within the surveyed area, remedial actions may be developed and implemented in consultation with the CPM, ~~CDFG~~ **CDFW** and USFWS to correct conditions at the site that might be preventing owls from nesting there. A report describing survey results and any remedial actions taken shall be submitted to the CPM, ~~CDFG~~ **CDFW** and USFWS no later than January 31 of each year for two years.

4. Burrowing Owl Injury. If a burrowing owl is injured or found dead within the vicinity of the Project Area, the project owner shall notify

the CPM of the injury or mortality to the Burrowing Owl immediately by e-mail. The Designated Biologist shall follow the Burrowing Owl Plan to either immediately: transport injured individuals to a CDFW-approved wildlife rehabilitation center or veterinary facility; or follow approved collection and storage procedures for deceased animals. Permittee shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

5. **Only the Designated Biologist or personnel following directions from and under the supervision of the Designated Biologist, shall handle and transport injured burrowing owl for treatment or impacted burrowing owl eggs for salvage. All other burrowing owl handling is prohibited.**

6. Preserve and Manage Compensatory Habitat. For each individual owl or pair identified on the project site during pre-construction surveys, off-site mitigation shall be required as described in the California Burrowing Owl Consortium guidelines (CBOC 1993). Determining which ratio to apply depends on whether the proposed compensatory habitat is occupied or unoccupied.

   A. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair of single bird

   B. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair of single bird.

   Compensatory habitat shall be suitable for occupation by burrowing owls and preserved and managed in perpetuity for this purpose. Compensatory mitigation may be within the 118.2 acres proposed for desert tortoise and MGS (refer to BIO-15), provided that it also meets the criteria for suitable burrowing owl habitat. The compensatory habitat shall be managed for the benefit of burrowing owls, with the specific goals of:

   A. Maintaining the functionality of artificial and natural burrows; and

   B. Minimizing the occurrence of weeds (species considered "moderate" or "high" threat to California wildlands as defined by CAL-IPC [2006] and noxious weeds rated "A" or "B" by the California Department of Food and Agriculture [Cal. Code Regs. Tit. 3, § 4500] and any federal-rated pest plants [USDA 2026]) at less than 10% cover of the shrub and herb layers.

   The Burrowing Owl Plan shall also include monitoring and maintenance requirements for the compensatory habitat, details on methods for

measuring compliance goals, and remedial actions to be taken if management goals are not met.

The final **revised** Burrowing Owl Plan is due ~~before preconstruction surveys begin~~ **within 90 days of the CEC's approval of this amendment (TN# 253750, TN# 253751, and TN# 253752)** to ensure that an approved relocation methodology will be followed for any owls occurring within the project area. ~~Therefore, it is understood that the compensatory mitigation acreage (if required) may not be identified in the Burrowing Owl Plan. However, the Plan shall propose a location for compensatory mitigation land and the acreage required, quantified according to the California Burrowing Owl Consortium methods outlined above.~~ **The revised Burrowing Owl Plan shall not include revisions to the acreage and location of the compensatory mitigation lands (i.e. Lockhart Preserve), however it shall include plans to create and maintain in perpetuity the four artificial burrowing owl burrows required by BIO-22.**

If owls are identified during the pre-construction survey, the project owner shall submit an addendum to the Burrowing Owl Plan, which ~~identifies~~ **shall identify** the number of owls **and occupied burrows** ~~identified~~ **located** and the exact ~~acreage to be preserved~~ **number of artificial burrows to be built** and managed in perpetuity for burrowing owl based on the results of the preconstruction survey and as agreed to in consultation with ~~CDFG~~ **CDFW**.

Verification: ~~At least 45 days prior to start of any pre-construction site mobilization,~~ **Within 90 days of the CEC's approval of this amendment (TN# 253750, TN# 253751, and TN# 253752) and/or at least 45 days prior to start of construction of the two new evaporation ponds, whichever comes first** the project owner shall provide the CPM and ~~CDFG~~ **CDFW** with the final **revised version** of the Burrowing Owl ~~Monitoring and Mitigation~~ Plan that has been reviewed and approved by the CPM in consultation with ~~CDFG~~ **CDFW**. An addendum to the plan, which includes the pre-construction survey results, (e.g., number of owls identified onsite) ~~and the CDFG **CDFW** approved amount of compensatory mitigation,~~ shall be submitted within 10 days of completing the burrowing owl pre-construction surveys. **No discussion of additional mitigation lands is required in the addendum.** ~~The CPM will determine the acceptability of the Plan and addendum within 15 days of their receipt.~~ All modifications to the approved Plan may be made by the CPM after consultation with ~~CDFG~~ **CDFW**. The project owner shall notify the CPM no less than five working days before implementing any CPM-approved modifications to the Burrowing Owl Monitoring and Mitigation Plan.

BIO-19 The project owner shall design and implement an Evaporation Pond Monitoring ~~and Adaptive Management~~ Plan that meets the requirements of the **CPM, in coordination with** USFWS, ~~CDFG~~**CDFW**, **and L**RWQCB ~~and the CPM~~. The objective of the Plan is to define the monitoring and reporting procedures ~~as well as triggers~~ for ~~adaptive~~ management strategies that shall be implemented to prevent wildlife mortality at the **netted** evaporation ponds. The plan shall include:

- **A detailed description of the netting system for the evaporation ponds, including materials, design, and installation specifications;**
- **The netting shall completely enclose the evaporation pond structure, preventing birds and other wildlife from accessing the water in the ponds;**
- **The netting shall be a CPM-approved mesh size to minimize entanglements with wildlife;**
- A description of evaporation pond design features such as side slope specifications, freeboard and depth requirements, which will prevent use by wildlife;
- ~~A detailed description of the wildlife monitoring procedures and schedule. For the initial implementation of a new technology, daily monitoring shall be conducted both at the project evaporation ponds and the wetlands within the Harper Lake ACEC. Monitoring may be reduced to weekly and potentially bi-weekly or monthly depending on the results of initial monitoring period;~~
- A detailed description of the water quality and water level monitoring procedures and schedule. ~~Water quality and water level monitoring shall coincide with wildlife monitoring to provide a basis for comparative analysis;~~
- ~~A description of wildlife exclusion/deterrent technologies and adaptive management strategies. Technologies shall include, but are not limited to netting, and shall not disturb or harass non-target wildlife adjacent to the project area~~;
- ~~Triggers for adaptive management (i.e., modifications to existing technology or replacement with new technology). Adaptive management shall be necessary if: 1) more than one dead bird per quarter is discovered at the evaporation ponds; or 2) one special-status animal is discovered at the evaporation ponds; or 3) noise levels attributable to the technology exceed 60dB at the Harper Lake ACEC wetlands. After three failed attempts at new technology or modification of existing technology, the ponds shall be netted;~~
- Reporting requirements, to include monthly reporting ~~for the first year if a technology other than netting is used~~ **for the first year of operation of the new evaporation ponds.** Reporting may be reduced to ~~monthly or~~ quarterly **or annually** thereafter if no bird or wildlife deaths are reported

during the ~~first~~ **most recent** year**. Reporting for existing ponds is currently quarterly but may be reduced to annually thereafter if no bird or wildlife deaths are reported during the most recent year;**

- If wildlife mortality occurs at the ponds ~~or if birds are disturbed at the marsh as described above,~~ the CPM shall be notified within ~~10 days~~**24 hours or on a Monday if the event occurs on the weekend** of the incident **occurrence** ~~and the accompanying adaptive management action to be implemented~~.

Evaporation pond monitoring and reporting shall continue for the life of the project. ~~The draft Plan submitted by the Applicant (AS 2009d) shall provide the basis for the final plan, subject to review and revisions from the CPM in coordination with USFWS, CDFG, and RWQCB~~.

The project owner shall update the approved Evaporation Pond Plan to include the additional evaporation pond specifications and netting requirements. The updated Plan shall remove the "Adaptive Management" section of the document.

The project owner shall provide reporting once built as part of the Evaporation Pond Plan. This report shall be included in the annual compliance report.

Verification: At least 30 days prior to operation of the **new** evaporation ponds the project owner shall provide the CPM, USFWS, **L**RWQCB, and ~~CDFG~~**CDFW** with the final version of the Plan that has been reviewed and approved by the CPM in consultation with USFWS, **L**RWQCB, and ~~CDFG~~**CDFW**. The project owner shall first submit a draft plan to the CPM that incorporates the guidance in this condition. ~~The CPM, in coordination with USFWS, RWQCB, and CDFG, shall provide written comments to the project owner within 30 days of receipt of the draft plan and shall determine the acceptability of the final plan within 15 days of its receipt~~. All modifications to the approved Plan may be made by the CPM, ~~after consultation~~ in consultation the with USFWS, **L**RWQCB, and ~~CDFG~~**CDFW**. The project owner shall notify the CPM no less than five working days before implementing any CPM-approved modifications to the Evaporation Pond Plan.

BIO-22 Burrowing Owl Habitat Enhancement and Maintenance. The project owner shall construct four artificial burrowing owl burrows on existing habitat management lands at the Lockhart Preserve. These burrows shall be built according to the designs suggested in the Users Guide to Installation of Artificial Burrows for Burrowing Owls, 2013; by D. Johnson, D. Gillis, M. Gregg, J. Rebholz, J. Lincer, and J. Belthoff, modified to have two entrances, or use an alternative design approved by the CPM.

Burrows shall be constructed before the start of ground disturbance associated with construction of the two new evaporation ponds, and if possible before start of construction of the Overnight Solar Project. In addition, per BIO-13, the project owner shall construct five additional burrows per burrowing owl burrow removed within Mojave Solar Project.

The project owner, or designee, shall maintain the artificial burrowing owl burrows. Maintenance shall include annually removing brush from near the entrance, documenting the burrows in yearly annual reports for the Lockhart Preserve, and removing excess soil from underground portions, which may require excavation and replacement of cleaned components every five years or at an interval approved by the CPM.

Prior to construction of the new evaporation ponds, the project owner shall provide a supplemental Property Analysis Record (PAR)-like analysis describing the start-up (i.e., installation) and maintenance costs required for installation and maintenance of the artificial burrows. The supplemental PAR-like analysis shall be reviewed and approved by the CPM.

Prior to construction of the new evaporation ponds, the project owner shall provide funding for the long-term management of artificial burrowing owl burrows at the Lockhart Preserve through a supplemental endowment provided to the endowment manager for the Lockhart Preserve. The amount of funding shall be based on the supplemental PAR-like analysis, and shall be approved by the CPM.

The project owner and the CPM shall ensure that an agreement is in place with the endowment holder/manager to ensure the following:

- **Interest. Interest generated from the initial capital endowment shall be available for reinvestment into the principal and for the long-term maintenance of burrowing owl burrows.**
- **Withdrawal of Principal. The endowment principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party endowment manager to ensure the continued viability of the species on the Lockhart Preserve.**
- **Pooling Endowment Funds. CDFW, or a CPM-approved, in consultation with CDFW and USFWS, non-profit organization qualified pursuant to California Government Code section 65965 to hold endowments may pool the endowment with other endowments for the operation, management, and protection of the 118.2 acres for local populations of western burrowing owl. However, for**

reporting purposes, the endowment fund must be tracked and reported individually.

Verification: No less than 45 days prior to construction of the new evaporation ponds, the project owner shall provide CEC with a report including a supplemental PAR-like analysis and the design and location of the burrows. The endowment described in the supplemental analysis shall be provided to the third-party endowment manager prior to start of construction of the new evaporation ponds.

No less than 15 days prior to construction of the new evaporation ponds, the project owner shall provide CEC with written verification that the four new artificial burrows have been constructed.

Annual monitoring of the artificial burrows shall be included in the annual monitoring reports for the Lockhart Preserve required by COC BIO-15.

REFERENCES

Abengoa Solar 2011 – Abengoa Solar. Land Management Plan for Lockhart Ecological Reserve San Bernardino County, dated June 2011.

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CBOC 1993 – The California Burrowing Owl Consortium. Burrowing Owl Survey Protocol and Mitigation Guidelines. April 1993. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83842&inline

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MOJAVE SOLAR PROJECT (09-AFC-5C)
Petition to Amend – Two New Evaporation Ponds
SOIL AND WATER RESOURCES

James Ackerman

INTRODUCTION

This petition proposes to construct two new evaporation ponds, one at Alpha and another at Beta power blocks (A-3 and B-3) of the MSP. The purpose of adding the two new evaporation ponds is to increase water treatment capacity to compensate for decreasing evaporation potential due to rising salinity and recently installed bird netting. Both new evaporation ponds would be designed in a similar manner to the existing ponds with respect to surface area, capacity, liner containment, leachate collection systems, and neutron probe soil moisture monitoring systems. Three new monitoring wells would be installed at each location (six total) to monitor perched groundwater quality in support of the existing detection monitoring program as one of the waste discharge requirements (WDRs) per COC **SOIL & WATER-2**. Updated WDRs have been prepared in cooperation with the Lahontan Regional Water Quality Control Board (LRWQCB) as **SOIL & WATER- 2**. Attachments A, B, and C are presented at the end of this section. The WDRs serve as if they were prescribed by the LRWQCB.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project with respect to water use and quality have changed since the Commission Decision was published in September 2014. For water quality, that generally includes the Federal Clean Water Act (33 USC § 1257 et seq.), the State Porter-Cologne Water Quality Act (California Water Code [CWC] Sec. 13000 et seq.), and CWC sections 13240-13243 that establishes Basin Plans and water quality objectives, such as the Lahontan Basin Plan where the project resides. Specifically, regarding erosion control, the Lahontan Basin Plan and San Bernardino County Development Code (Sec. 82.13.080). Regarding protection of groundwater resources from discharges to land associated with the evaporation ponds and land treatment units (LTUs), the Porter-Cologne Act (CWC Sec. 13260), California Code of Regulations (CCR) Title 27 and Title 23, Division 3, Chapter 15, the California Safe Drinking Water and Toxic Enforcement Act (Health and Safety Code Sec. 25249,5), and various SWCRB policies; Antidegradation (No. 68-16) and groundwater as a possible domestic water supply (88-63). For judicious and appropriate use of water resources, the California Constitution (Article 10, Sec. 2) requiring beneficial use of water to the fullest extent possible without waste or unreasonable use, SWRCB policy 75-58 requiring that fresh inland waters should only be used for power plant cooling if other alternatives are environmentally undesirable or economically unsound, the Warren-Alquist Act (Sec. 25008) requiring the CEC to promote feasible means of water conservation and use of alternative water supply, and the adjudication of the Mojave Groundwater Basin under

the jurisdiction of the Mojave Water Agency. In addition, no new LORS have been introduced that apply to the project.

ANALYSIS

Staff have reviewed the petition for potential environmental effects and consistency with applicable LORS. Based on this review, staff determined that **SOIL & WATER-2** and **SOIL & WATER-8** require modification to improve the monitoring required by LORS, which continues to limit impacts to less than significant with mitigation related to soil and water resources. The WDRs (SOIL & WATER Attachments A, B, and C) associated with **SOIL & WATER-2** have been updated to reflect current State Water Resources Control Board (SWRCB) and LRWQCB implementation of LORS (California Code of Regulations (CCR) Title 27 requirements) regarding surface impoundments, such as the evaporation ponds proposed in this petition. COC **SOIL & WATER-8** has been modified to better monitor the water balance between treatment plant intake and discharge to the evaporation ponds.

Construction of the evaporation ponds would result in an estimated soil disturbance of 23-acres total and necessitate coverage under the State Water Resources Control Board's (SWRCBs) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) as specified in COC **SOIL & WATER-2**, Attachment B, Requirements for Waste Discharge I. A. As such, stormwater best management practices must be implemented throughout the duration of the construction project, in compliance with the WDRs outlined in Attachment B, and must comply with the existing site-specific drainage erosion and sedimentation control plan (DESCP) per COC **SOIL & WATER-1**. In addition, the channel maintenance program per COC **SOIL & WATER-3** shall be implemented during construction if applicable, as an additional means to control stormwater runoff. The evaporation ponds would be designed and constructed in accordance with the updated WDRs, which incorporate the provisions outlined in CCR Title 27. Six new detection monitoring wells would be installed per requirements of COC **SOIL & WATER-2** and would become part of the current groundwater monitoring well network established in compliance with COC **SOIL & WATER-6** and COC **SOIL & WATER-7**.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that by constructing the proposed evaporation ponds in accordance with existing Soil & Water COCs, as well as the updated WDRs associated with COC **SOIL & WATER-2**, potential impacts related to water quality degradation from uncontrolled stormwater runoff and surface impoundment release to either surface waters or groundwater would remain less than significant with mitigation. The proposed modification to COC **SOIL & WATER-8** would enable staff to better track wastewater treatment plant output and the impact to evaporation pond capacity.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

To ensure consistency with the LRWQCB updated WDRs and better monitor the water balance between treatment plant intake and discharge to the evaporation ponds, staff proposes to modify COCs **SOIL & WATER-2** and **SOIL & WATER-8.** The revised WDRs for SOIL & WATER-2 are included in Attachments A, B and C at the end of this document. The COC revisions are as follows:

WASTE DISCHARGE REQUIREMENTS

SOIL & WATER-2 The project owner shall comply with the Waste Discharge Requirements (WDRs) established in Soil and Water Resources ~~Appendices~~ **Attachments** ~~C~~**A**, ~~D~~**B**, and ~~E~~**C** for the construction and operation of the surface impoundments (evaporation ponds), land treatment units, and storm water management system. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). ~~It is the Commission's intent that these requirements be enforceable by both the Commission and Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Coade Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c).~~ **The WDRs established in the attachments serve as if they were prescribed under Water Code section 13263 by the Water Boards. These requirements are enforceable by both the CEC and the Water Boards. The Water Boards are authorized to verify compliance of these WDRs, including conducting investigations and inspections and requiring technical and monitoring reports. The Water Boards are also authorized, in coordination with the CEC, to enforce the WDRs pursuant to but not limited to Water Code sections 13300, 13301, 13304, and 13350. The CEC and the Water Boards shall confer with each other and coordinate, as needed, in the enforcement of the requirements, consistent with Public Resources Code section 25532. The project owner shall pay the annual waste discharge permit fee associated with the Mojave Solar Project to the Water Boards. The project owner shall make payments to the State Water Resources Control Board, based upon a fee schedule in California Code of**

Regulations, Title 23, section 2200 for a Discharge to Land with a Threat to Water Quality Rating of 2 and Complexity Rating of B.

Verification: No later than sixty (60) days prior to any wastewater or storm water discharge or use of land treatment units, the ~~AMS~~**MSP** project shall provide documentation to the CPM, with copies to the ~~Lahontan~~ **L**RWQCB, demonstrating compliance with the WDRs established in ~~Appendices~~ **Attachments** ~~C~~**A**, ~~D~~**B**, and ~~E~~**C**. Any changes to the design, construction, or operation of the ponds, treatment units, or storm water system shall be requested in writing to the CPM, with copies to the ~~Lahontan~~ **L**RWQCB, and approved by the CPM, in consultation with the ~~Lahontan~~ **L**RWQCB, prior to initiation of any changes. The ~~AMS~~**MSP** ~~project~~ **staff** shall provide to the CPM, with copies to the ~~Lahontan~~ **L**RWQCB, all monitoring reports required by the WDRs, and fully explain any violations, exceedances, enforcement actions, or corrective actions related to construction or operation of the **evaporation** ponds, **land** treatment units, ~~or~~ storm water system**, and groundwater monitoring network.**

(Please note the amended WDRs, Attachments A, B, and C, are located at the end of this document. The revisions are needed to obtain consistency with the LRWQCB's current implementation of Title 27 requirements. Because the revisions are extensive, they are not displayed in tracked changes format.)

WASTEWATER COLLECTION SYSTEM REQUIREMENTS

SOIL & WATER-8 The project owner shall recycle and reuse all process wastewater streams to the extent practicable. **The project owner shall report monthly the freshwater intake, discharge through conveyance, and discharge by other means of each water treatment plant (such as a pump truck)**. Prior to transport and offsite disposal of any facility operation wastewaters that are not suitable for treatment and reuse on-site, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).

Verification: The project owner shall include separate historic monthly Alpha and Beta water treatment plant data. Freshwater intake shall be designated by production well source. Conveyance discharge shall be identified by evaporation pond destination. Discharge by other means shall be identified by discharge source, and evaporation pond destination. This information shall be included in the text of the semi-annual and annual Detection Monitoring Program/Groundwater Monitoring Plan Reports where applicable, as well as the Water Treatment Plant Water Records included in Appendix C of the Semi-

Annual report. Prior to transport and offsite disposal of any facility operation wastewaters that are not suitable for treatment and reuse on-site, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. All records of this testing and classification shall be maintain**ed** at the project site. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).

MOJAVE SOLAR PROJECT (09-AFC-5C)
Petition to Amend – Two New Evaporation Ponds
WASTE MANAGEMENT

James Ackerman

INTRODUCTION

This petition proposes to construct two new evaporation ponds, one at each of the water treatment areas, Alpha and Beta, of the MSP facility. The purpose of adding two new evaporation ponds is to increase water treatment capacity to compensate for decreasing evaporation potential due to rising salinity and recently installed bird netting. According to the petition, evaporation pond construction activities would not increase the generation of solid waste.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

No LORS applicable to the project have changed since the Commission Decision was published in September 2014 for the proper handling and disposal of non-hazardous waste, that includes the Federal Resource Conservation and Recovery Act (RCRA) (CFR Title 40, Subtitle D), the California Integrated Waste Management Act (PRC Section § 40000) and Mandatory Commercial Recycling Law (PRC Section § 42920), as well as San Bernardino County ordinances (Title 3, Chapter 8). Regarding the proper storage of wastewater, the Federal Clean Water Act (33 USC § 1257 et seq.), the State Porter-Cologne Water Quality Act (California Water Code [CWC] Sec. 13000 et seq.), and CWC sections 13240-13243 that establishes Basin Plans and water quality objectives, such as the Lahontan Basin Plan where the project resides, and requirements for surface impoundments (CCR Title 27, Chapter 3). For the proper handling and disposal of HTF impacted soil, Federal RCRA (CFR Title 40, Subtitle C) and California regulation (CCR Title 22, Division 4.5). In addition, there are no new LORS that apply to the project.

ANALYSIS

Wastes generated during construction of the evaporation ponds would be managed in accordance with the Operations Waste Management Plan prepared per COC **WASTE-9**. Solid waste transported to disposal facilities would be documented per COC **WASTE-7**. In addition, COC **WASTE-10** shall be modified to facilitate better management of HTF contaminated soil as suggested below.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that construction of the additional evaporation ponds would comply with LORS. By constructing the proposed evaporation ponds in accordance with existing waste management COCs, as well as the modifications to COC **WASTE-10,** impacts related to managing solid waste would remain less than significant with mitigation.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

As part of this PTA, COC **WASTE-10** shall be modified as follows to include the LRWQCB regarding notification and evaluation of HTF contaminated soil, as well as upgrading the USEPA method for analysis of HTF contaminated soil:

WASTE-10 The project owner shall submit to the CPM**,** **LRWQCB,** and DTSC for approval the Applicant's assessment of whether the HTF contaminated soil is considered hazardous or non-hazardous under state regulations. HTF-contaminated soil that exceeds the hazardous waste levels must be disposed of in accordance with California Health and Safety Code (HSC) Section 25203. HTF-contaminated soil that does not exceed the hazardous waste levels may be discharged into the land treatment unit. For discharges into the land **treatment unit** ~~farm~~, the project owner shall comply with the Waste Discharge Requirements contained within in the Soil & Water Resources section of this Decision.

Verification: The project owner shall document all releases and spills of HTF as described in Condition of Certification WASTE-9 and as required in the Soil & Water Resources section of this Decision. Cleanup and temporary staging of HTF-contaminated soils shall be conducted in accordance with the approved Operation Waste Management Plan required in Condition of Certification of WASTE-6.

The project owner shall sample HTF-contaminated soil in accordance with the United States Environmental Protection Agency's (USEPA) current version of "Test Methods for Evaluating Solid Waste" (SW-846). Samples shall be analyzed in accordance with USEPA Method **8270E**~~1625B~~ or other method to be reviewed and approved by DTSC and the CPM.

Within 28 days of an HTF spill the project owner shall provide the results of the analyses and their assessment of whether the HTF-contaminated soil is considered hazardous or non-hazardous to DTSC**,** LRWQCB**,** and the CPM for review and approval.

If DTSC, **LRWQCB**, and the CPM determine the HTF-contaminated soil is considered hazardous it shall be disposed of in accordance with California Health and Safety Code (HSC) Section 25203 and procedures outlined in the approved Operation Waste Management Plan required in Condition of Certification WASTE-9 and reported to the CPM in accordance with Condition of Certification WASTE-12.

If DTSC**,** **LRWQCB**, and the CPM determine the HTF-contaminated soil is considered non-hazardous it shall be retained in the land **treatment unit** ~~farm~~ and treated on-site in accordance with the Waste Discharge Requirements contained in the Soil & Water Resources section of this Decision.

Mojave Solar Project
Soil and Water Resources – Attachment A

MOJAVE SOLAR PROJECT
SOIL AND WATER RESOURCES
ATTACHMENT- A
FACTS FOR WASTE DISCHARGE REQUIREMENTS

1. Applicant

For the purposes of these Waste Discharge Requirements (WDRs), Mojave Solar LLC, a subsidiary of Atlantica Sustainable Infrastructure PLC, as landowner and operator, is referred to as "Applicant".

2. Definition of Waste

"Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal (California Water Code (Water Code), Section 13050[d]).

3. Facility

The Mojave Solar Project (Facility) is a cogeneration solar facility located in the town of Hinkley, San Bernardino County (Figure 1). The Facility has two independently operating solar fields, referred to as Alpha and Beta, each feeding a 137.5-megawatt (gross) power island (275-megawatt total output) (Figure 2). Each solar field has 1,280 parabolic trough collectors, consisting of support structures, mirrors, receiver tubes and drive systems. Energy from the sun supplies power to the project through solar-thermal collectors.

The Facility uses parabolic trough technology (mirrors) to warm a Heat Transfer Fluid (HTF). The heated HTF generates steam in solar steam generators, and the steam expands through a steam turbine generator (power block) to produce electrical power. HTF contaminated soil that is less than hazardous waste concentrations (10,000 milligrams per kilogram [mg/kg]) are stored and treated in two (2) on-site bioremediation/land farm units (Land Treatment Units).

No supplementary fossil fuel-based energy source (e.g., natural gas) is used for electrical power production. The electrical output from the Alpha and Beta sites joins at an on-site transmission line interconnection substation to form one full output transmission interconnection. The power generated at the Facility is transmitted to Southern California Edisons (SCE) transmission grid through SCE's existing 230-kilovolt Kramer-Cool Water #1 transmission line.

The project uses wet cooling towers for power plant cooling. Water for cooling tower makeup, process water makeup, potable uses and other industrial uses such as mirror washing is provided by on-site groundwater production wells. A package

reverse-osmosis water treatment system is used to treat the water to meet potable standards because the groundwater is brackish.

Cooling tower blowdown and process water generated from the reverse-osmosis system is discharged to Title 27 double lined Class II surface impoundments for evaporation. The cooling tower basin sludge (filter cake) is hauled offsite for disposal. The filter cake is not authorized to be treated in the Land Treatment Units.

4. Waste Discharge Requirements History

Commission Decision, Order No. 10-0908-8, adopted on September 8, 2010, established COCs serving as WDRs and the monitoring and reporting program (MRP). Compliance with WDRs is mandated under Condition of Certification **SOIL & WATER-2**. Compliance with the MRP is mandated under **SOIL & WATER-6** and **SOIL & WATER-7**. As a result of a Petition to Amend for construction of two additional surface impoundments, the WDRs were amended in May 2026.

5. Reason for Action

The Applicant filed a Petition to Amend (PTA) Commission Order No. 10-0908-8, with the California Energy Commission (Commission), on December 22, 2023. The PTA was filed to construct two (2) additional surface impoundments at the Facility. The applicant determined that the depth of wastewater in the surface impoundments is increasing because of high salt concentrations in the waste and bird netting that slows evaporation rates. To maintain operation the applicant proposes to construct two (2) additional surface impoundments: one (1) at the Alpha solar field (Alpha A-3) and one (1) at the Beta solar field (Beta B-3). The waste discharges from Facility operations may affect the quality of waters of the state.

The WDRs are being amended to incorporate the requirements of COC **SOIL & WATER-2** into the construction, operation and maintenance of the additional surface impoundments, and to update the monitoring and reporting program outlined in COC **SOIL & WATER-6** and **SOIL & WATER-7**.

6. Regulatory Authority

Under the Warren-Alquist Act and Governor's Executive Order S-14-08, the Commission has authority to streamline permitting for renewable energy facilities through an "in lieu of" process. This process incorporates regulatory requirements and conditions from State and local agencies into the Commission's certification, allowing all necessary permits – including those typically issued by the Lahontan Regional Board – to be granted through certification.

On February 26, 2010, the U.S. Army Corps of Engineers determined that Harper Lake and the Facility's ephemeral drainages are not waters of the United States. However, surface waters and wetlands affected by Facility operations are waters

of the State under Water Code Section 13050 and remain subject to State requirements, including Water Code Section 13260 and the Lahontan Region Basin Plan. The Commission's certification will integrate these requirements to regulate all Facility actions that impact or may impact surface water or groundwater within the Lahontan Region.

The project owner shall comply with the WDRs established in Attachment B, and the Monitoring and Reporting Program established in Attachment C. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). The WDRs established in Attachment B serve as if they were prescribed under Water Code section 13263 by the Water Boards. These requirements are enforceable by both the Commission and the Water Boards. The Water Boards are authorized to verify compliance of these WDRs, including conducting investigations and inspections and requiring technical and monitoring reports. The Water Boards are also authorized, in coordination with the Commission, to enforce the WDRs pursuant but not limited to Water Code sections 13300, 13301, 13304, and 13350. The Commission and the Water Boards shall confer with each other and coordinate, as needed, in the enforcement of the requirements, consistent with Public Resources Code section 25532.

7. Annual Fees and Threat to Water Quality Complexity Rating

These WDRs regulate discharges of waste, as defined in Water Code Section 13050(d), to the surface impoundments, land treatment units and storm water discharges at the Facility. Pursuant to California Code of Regulations (CCR) Title 23, Section 2200, the Applicant is subject to annual fees based on the threat to water quality (TTWQ) rating of 2 and complexity (CPLX) rating of B.

8. Climate

The Facility is located within the Mojave Desert Geomorphic Province. The area has a desert-like climate, with extreme daily temperature changes, low annual precipitation, strong seasonal winds, and mostly clear skies. During the summer, temperatures regularly exceed 100 degrees Fahrenheit (°F). Winter temperatures are more moderate, typically ranging from 60°F to lows in the 30°F range. Total average annual precipitation is less than 6 inches. Over 70 percent of the precipitation occurs between December and March, but occasional heavy precipitation from thunderstorms can occur in the summer months.

9. Land Uses

The Facility is an operating 275-megawatt facility located on 1,765 acres of previously disturbed agricultural (including cattle ranching) land. Approximately 70 percent of the total area consists of solar fields. Approximately 3 percent of the Facility is occupied by power blocks, with the remaining 27 percent consisting of drainage conveyance systems, evaporation ponds, land treatment units, a substation, and other common solar facility elements.

10. Local Geology

a. Geologic Setting

The Facility is in Harper Valley at the northwest edge of the Mojave Desert Geomorphic Province. The Harper Valley consists of Tertiary- and Quaternary-age igneous and sedimentary rock, and older alluvium. The sedimentary deposits overlie igneous or metamorphic basement rocks at depth. The elevation of the Facility ranges from 2,010 feet (ft) to 2,020 ft above mean sea level.

b. Faulting and Seismicity

The Facility is in a seismically active region of Southern California with the potential for strong ground motion during the design life of the structures. The Lenwood-Lockhart, Helendale, San Andreas, and Garlock faults are active fault systems located northwest and southwest of the project area. The Harper Lake Fault Zone and Blackwater and Calico faults are active fault systems located northeast and east of the project area. The active Lenwood-Lockhart-Old Woman Springs fault is located less than one mile (2,300 ft) from the Facility. An unnamed fault extending into the northern portion of the eastern side of the Facility has been mapped as active by a State of California Special Studies Zone. Major tectonic activity associated with the faulting in the Facility's regional tectonic framework consists primarily of strike-slip activity (lateral movement).

1. Surface Fault Rupture

The Lenwood-Lockhart-Old Woman Springs fault has the potential to generate an earthquake with a moment magnitude of 7.5. The probability of damage from surface fault rupture may be moderate at the Facility. The potential for lurching or cracking of the ground surface also exists.

2. State of California Earthquake Fault Zone

The unnamed fault was mapped by the California Geological Survey based on aligned tonal lineaments, a subtle scarp in Holocene alluvium, and the linear western shoreline of Harper Lake. The Applicant investigated the unnamed fault in 2007 and 2009. Evidence of active faulting was not encountered during the fault investigation. The mappable units observed

did not exhibit displacement, offset, or other evidence of faulting (i.e., fault gouge, slickensides, or mineralization).

c. **Facility Soils**

The geologic units observed at the Facility include lake deposits and older alluvium.

1. Lake Deposits

The lake deposits were encountered on the northeastern corner of the Facility where it extends into Harper Lake. The lake deposits consist of damp to saturated, loose to medium dense, silt and sand, and soft to firm clay. Salt deposits are common on the surface of the lake deposits.

2. Older Alluvium

Older alluvium underlies the Facility, except the northeastern corner where the lake deposits are found. The alluvium consists of damp to saturated, medium dense to very dense, silty and clayey fine to coarse sand with occasional layers of gravel, silt and clay, and saturated, hard fine sandy and silty clay. Some layers of caliche consisting of strongly cemented layers of sand and silt are present.

11. Receiving Waters

a. **Surface Water**

The surface waters near the Facility include the minor surface waters of the Harper Valley Hydrologic Subarea (Hydrologic Unit No. 628.42). Surface water flows toward Harper Lake. Harper Lake is a flat, unvegetated, saline wet playa in the lowest part of the undrained valley. All drainages in this portion of the valley exist as ephemeral washes.

b. **Groundwater**

The Facility is located within the Harper Valley Groundwater Sub-Basin (DWR No. 6-047). The Harper Valley groundwater basin is divided into several subbasins based on the presence of bedrock barriers and faults that influence groundwater movement. The groundwater flow direction in the sub-basin is generally toward Harper Lake. The primary source of water to the groundwater basin is from surface infiltration at the base of the mountains and in ephemeral washes. Additionally, there may be some groundwater flow into the Harper Lake subbasin from the adjacent subbasins.

a. Perched Groundwater

Perched groundwater ranges between 4 ft and 10 ft below ground surface (bgs) in the vicinity of Harper Lake and approximately 25 ft bgs to 30 ft

bgs at the Alpha and Beta power blocks. Groundwater flows toward the north. The existing water quality of the perched aquifer is high in alkalinity (as calcium carbonate), calcium, chloride, magnesium, nitrate, potassium, sodium, strontium, sulfate and total dissolved solids.

b. Upper Regional Aquifer

A sandy clay layer separates the perched zone from the upper regional aquifer. The upper sandy clay layer is approximately 50 ft to 80 ft thick. The upper regional aquifer is an older alluvial deposit consisting of moderately sorted sand with gravel, silt and clay. Depth to groundwater ranges between approximately 130 ft bgs to 150 ft bgs. The water quality of the upper regional aquifer is similar to that of the perched groundwater zone. It has elevated concentrations of alkalinity (as calcium carbonate), bicarbonate (as calcium bicarbonate), bromide, calcium, chloride, magnesium, nitrate, potassium, sodium, and total dissolved solids.

c. Lower Regional Aquifer

The upper and lower regional aquifers are separated by an approximately 20 ft to 100 ft thick layer of Black Mountain Basalt. The aquifer consists of moderately sorted sand with gravel, and silt with clay. Depth to groundwater is approximately 500 ft bgs.

12. Basin Plan for the Lahontan Region

The Lahontan Water Board adopted the Basin Plan, which became effective on March 31, 1995. The Basin Plan outlines the beneficial uses to be protected and incorporates narrative and numerical water quality objectives that apply to ground and surface waters within the Lahontan Region. "Water quality objectives" means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area (Water Code, Section 13050(h)).

These WDRs outline the beneficial uses to be protected for surface water and groundwater and describe the actions to be taken by the Applicant to meet the water quality objectives. In general, where more than one objective is applicable, the stricter objective applies.

13. Beneficial Uses

"Beneficial uses" refer to the advantages provided by waters of the state that may be protected against quality degradation including, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves (Water Code, Section 13050(f)).

a. **Surface Water**

The Basin Plan designates beneficial uses for surface waters in each watershed of the Lahontan region. Beneficial uses of the Harper Valley Hydrologic Subarea include:

1. Municipal and Domestic Water Supply (MUN)
2. Agricultural Supply (AGR)
3. Groundwater Recharge (GWR)
4. Freshwater Replenishment (FRSH)
5. Water Contact Recreation (REC-1)
6. Non-Contact Water Recreation (REC-2)
7. Warm Freshwater Habitat (WARM)
8. Cold Freshwater Habitat (COLD)
9. Wildlife Habitat (WILD)

b. **Groundwater**

The Basin Plan designates beneficial uses for groundwaters in each watershed of the Lahontan region. Beneficial uses of the Harper Valley Groundwater Sub-Basin include:

1. Municipal and Domestic Water Supply (MUN)
2. Agricultural Supply (AGR)
3. Industrial Surface Supply (IND)
4. Freshwater Replenishment (FRSH)

14. Groundwater Monitoring Network

The Applicant is implementing a detection groundwater monitoring program in compliance with CCR, Title 27, Section 20420. The groundwater monitoring network is depicted on Figure 3. The existing and proposed monitoring network consists of the following elements.

a. **Existing Groundwater Monitoring Network**

1. Detection Monitoring Wells

The Facility has eight (8) detection groundwater monitoring wells that monitor the uppermost aquifer (perched zone) to detect a release from the waste management units. Four (4) groundwater wells are installed at the Alpha site (MWP-A100 – MWP-A400) and four (4) are installed at the Beta site (MWP-B100 – MWP-B400).

2. Production Wells

The Facility has four (4) active groundwater production wells: Alpha 1/South, Alpha 2/North, Beta 3 and Beta 4. The groundwater is used for cooling water, potable uses, and other industrial uses such as mirror washing.

3. Local Groundwater Supply Wells

The Facility also monitors two (2) local groundwater supply wells: BLM-1 and Sciortino 2.

b. **Proposed Groundwater Monitoring Network**

Three (3) groundwater wells will be installed adjacent to the Alpha A-3 surface impoundment (MWP-A500-700) and three (3) wells will be installed adjacent to the Beta B-3 surface impoundment (MWP-B500-700). The wells will be installed within the uppermost aquifer, in upgradient and downgradient directions to the direction of groundwater flow, to monitor for a release from the waste management units.

15. Surface Impoundments

The Facility currently has four (4) 5-acre Class II surface impoundments: two (2) evaporation ponds at the Alpha site (Alpha-east and Alpha-west) and two (2) at the Beta site (Beta-east and Beta-west). Cooling tower blowdown and process water generated from the reverse-osmosis system is discharged to the surface impoundments for evaporation.

The two (2) new surface impoundments (Alpha A-3 and Beta B-3) are proposed to be constructed, operated and maintained in a similar manner as the existing surface impoundments. After construction of Alpha A-3 and Beta B-3, the Facility will have six (6) 5-acre Class II surface impoundments: three (3) evaporation ponds at the Alpha solar field and three (3) at the Beta solar field.

a. **Surface Impoundment Waste Characterization**

1. Liquid Waste Discharge

The waste discharged to the surface impoundments is classified as a "Liquid Designated Waste". The Water Code Section 13173 defines a designated waste as:

a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Health and Safety Code, Section 25143 or,

b. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives, or that could reasonably be expected to affect

beneficial uses of the waters of the state as contained in the appropriate state water quality control plan.

The waste discharged to the surface impoundments has elevated levels of alkalinity, boron, bromide, calcium, chloride, fluoride, magnesium, phosphorus (as phosphate), potassium, sodium, strontium, sulfate, and total dissolved solids. The concentrations of the constituents exceed water quality objectives and may affect beneficial uses if released.

Accidental releases of HTF have been discharged to the surface impoundments in the past during cooling tower equipment failure. These releases have the potential to affect water quality objectives and beneficial uses of waters of the state.

Consistent with CCR, Title 27, Section 20210, the design of the Class II surface impoundments complies with the containment requirements for the "Liquid Designated Waste" category.

2. Residual Solids

Saturated or equilibrium concentrations of impounded liquid waste result in precipitation of solids out of solution. Residual solids remaining after evaporation are expected to contain inorganic salts below hazardous waste levels and are also a "Designated Waste". Hazardous waste, per California Health and Safety Code Section 25208 (Toxic Pits Cleanup Act), are prohibited from being either discharged into, being stored or accumulating via evaporative process within the surface impoundments. The accumulated solids are removed from the surface impoundments when the solids reach a depth of two ft above the bottom of the impoundment and transported offsite to an appropriately licensed and permitted facility.

b. **Surface Impoundment Construction Details**

The Alpha and Beta power blocks each have two (2) existing Title 27 Class II surface impoundments (evaporation ponds) and are referred to as the east and west ponds. The design of the Alpha and Beta evaporation pond systems is identical. The existing evaporation ponds have the capacity to accommodate an annual discharge rate of 24.9 gallons per minute (0.036 million gallons per day) and contain precipitation from a 1,000-year, 24-hour storm event. The design includes the ability to contain the 30-year accumulation of anticipated solids from the process wastewater with the ponds being 75 percent full after 22 years.

Each evaporation pond excluding the slope is 312 ft x 294 ft. Including the side slopes of the ponds (3H:1V) increases the pond dimensions by approximately 50 ft to 60 ft. The operational depth of the ponds is 6 ft and a minimum of 2 ft of freeboard, maintained daily. Each pond was constructed with:

1. A primary (upper) 60-millimeter (mil) high-density polyethylene (HDPE) liner and a secondary (lower) 40-mil HPDE liner; and

2. An interstitial leak collection sump (Leachate Collection and Removal System [LCRS]), between the upper and lower liners; and
3. A base layer consisting of 1 ft of on-site screened soil below the lower liner. The material contains no particles larger than one inch and was compacted to 90% of the maximum dry density per American Society for Testing and Materials (ASTM) D15537; and
4. A neutron probe leak detection system installed underneath the secondary liner at the sides and low point of each evaporation pond.

The new surface impoundments are proposed to be constructed identically to the existing surface impoundments.

c. **Leachate Collection and Removal System**

In accordance with CCR, Title 27, Section 21600, subdivision (b)(8)(C), there is a leachate collection removal systems (LCRS) located between the primary and secondary liners of each surface impoundment. The LCRS geonet comprises a 200-mil geomembrane, with a hydraulic conductivity of 0.06 meters per second (60 centimeters per second) at a slope of 1 percent under a head of 1 ft. Leachate collection sumps were installed at a low point between the primary and secondary liners in the center of each pond. The collection sumps are filled with 0.5 inch (in) washed gravel to a height of 1 in above the geonet and underlain by 16 ounce per square yard non-woven geotextile.

Leachate collection piping was installed to convey the leachate from the collection sump to a leak detection manhole. The collection pipe is 8 in diameter HDPE SDR 11. The leak detection manhole is a 4 in diameter pre-casted concrete manhole, per ASTM C478, with a 6 in deep sump at the bottom. The native soil underneath the manhole is compacted to 95 percent maximum density per ASTM D698. An electronic leak sensor and pump has been installed inside each manhole. The sensor triggers the pump to start pumping the leachate back into the ponds through a discharge pipe.

The discharge pipe is a 2 in, schedule 80 polyvinylchloride, pipe equipped with a recording flow totalizer to measure the volume of discharge and calculate the action leakage rates.

d. **Vadose Zone Leak Detection**

Each set of evaporation ponds is equipped with a horizontal neutron probe leak detection system that consists of six locations used to obtain soil moisture readings at approximately 100-foot linear intervals (approximately 600 ft laterally to the west and east). The neutron probe leak detection system is a series of continuous pipes installed at the sides and low point of each evaporation pond. The pipes are installed at approximately 5 ft below the secondary liner and neutron probes are pulled through the pipes to assess the moisture content of the vadose zone. Soil moisture is monitored semi-annually. Background soil

moisture was established for the Alpha and Beta ponds, based on 108 readings collected from each pond between July 2013 and June 2014. Exceedance of the background moisture content may indicate a leak from the evaporation ponds.

e. Action Leakage Rate of Surface Impoundment Liners

The Action Leakage Rate (ALR) is the defined flow rate, that, if exceeded, triggers a response to assess the integrity of the liner systems and potentially take remediation actions. According to Code of Federal Regulations, Title 40, Section 264.222, the ALR is defined as "…the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1-foot."

The estimated ALR for the surface impoundments is 2,750 gallons per acre per day. This is based on one standard hole per acre, a drainage layer geonet with hydraulic conductivity of 0.06 meters per second and a 50 percent safety factor. Based on a 5 acre pond, each surface impoundment would have an ALR of 13,750 gallons per day.

16. Land Treatment Units

The Facility has two (2) Land Treatment Units (LTUs), one (1) at the Alpha solar field and one (1) at the Beta solar field. Each LTU is separated into two units: east and west. The LTUs are earthen surface impoundments that provide biological treatment of HTF contaminated soil.

a. Heat Transfer Fluid Details

The energy for steam generation in the solar steam generators is from HTF heated by solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. The HTF is heated up to approximately 750 degrees Fahrenheit as it circulates through piping along the solar array collector field and returns to the power block. The HTF piping is then routed to a steam generator where the fluid is used to produce high-pressure steam for the turbine electricity generators. Approximately 2,292,000 gallons of HTF (Therminol VP-1 [diphenyl ether (73.5%) and biphenyl (26.5%)] or equivalent) would be utilized at any one time within the Facility.

Therminol VP-1 is a synthetic HTF oil that consists of a mixture of biphenyl and diphenyl oxide that is solid at temperature below 54 degrees Fahrenheit (12 degrees Celsius), is relatively insoluble in water (solubility of approximately 25 milligrams per liter), combustible, and has relatively low volatility. The components of HTF are reported to biodegrade relatively rapidly in the environment, have slight toxicity to tested terrestrial species, higher toxicity to tested aquatic species and a potential to bioaccumulate. Biphenyl is listed as a toxic chemical in Title 22, Appendix X (List #: 299), and is presumed to be a hazardous waste until test methods demonstrate the concentrations are less than those listed in CCR, Title 22, Chapter 11, Article 3.

b. Land Treatment Unit Waste Classification

The Department of Toxic Substances Control has determined HTF contaminated soil is a hazardous waste at concentrations greater than 10,000 mg/kg. HTF contaminated soil at concentrations between 100 mg/kg and 10,000 mg/kg is classified as designated waste. Soil that has HTF concentrations less than 10,000 mg/kg is authorized for discharge to the LTUs. Contaminated soil remains in the LTUs until concentrations are reduced to an average concentration of less than 100 mg/kg. Once the contaminated soil is treated to less than 100 mg/kg biphenyl and less than 100 mg/kg diphenyl ether, it is removed from the LTU and reused on-site. The anticipated volume of soil within the LTU would not exceed 750 cubic yards.

c. Existing Land Treatment Unit Construction Details

The LTUs are earthen bioremediation units that do not incorporate a liner containment system, LCRS or neutron probe detection system. The LTUs are approximately 75 ft by 150 ft with a 2 ft base of compacted, low permeability, lime-treated native material. This base serves as a platform for land treatment activities to slow the rate of surface water infiltration in the treatment area. The compacted and native soil beneath the LTU is designated as a "treatment zone" to a depth of 5-ft bgs. Each LTU is surrounded on all sides by 2 ft high reinforced concrete walls. The concrete walls and grading control prevent run-on of storm water into the LTU or run-off of storm water from the unit. CCR, Title 27, Section 20250 (b)(5) prescriptive requirements require that no waste shall migrate below the treatment zone.

Storm water may occasionally accumulate in the LTU. This storm water can be pumped to the surface impoundments only after visual observation establishes that the water is free from HTF product and sheen. Based on conditions at similar sites in the area, it is anticipated that such a discharge, if necessary, would only occur approximately once every 3 to 5 years.

17. Storm Water Discharges

a. Main Offsite Discharge Flow Channel System

The main offsite flow channel system comprises the West Alpha Channel, Lockhart Channel, West Beta Channel, South Beta Channel, and Main Beta Channel.

1. West Alpha Channel

The West Alpha Channel is located along the western perimeter of the Alpha West site. Storm water is conveyed north along the east side of Lockhart Ranch Road, and along the north perimeter of the Alpha West site before discharging at the northeast corner of the Alpha West site toward Hoffman Road. This channel has an earthen dike and drainage swale

approximately 2 ft deep with a riprap energy dissipator to reduce velocity prior to discharge to Hoffman Road.

2. Lockhart Channel

The Lockhart Channel is located along the south perimeter of the Alpha West and Alpha East sites and along the north side of Lockhart Road. Storm water is conveyed from west to east toward Harper Lake. This channel has a natural earthen bottom with a 12-inch (in) thick "plate" of soil cement on a 3H:1V side slope. A 12-cell, 10-foot-wide and 6-foot-high box culvert conveys the flow across Harper Lake Road. The outfall at the east end of the conveyance channel has a flared riprap energy dissipator to reduce velocity prior to discharge toward Harper Lake.

3. West Beta Channel

The West Beta Channel is located along the west perimeter of Beta West site. Storm water is conveyed north toward Lockhart Ranch Road. The north end of the channel has 12 in thick and 8 ft wide layers of soil cement on 1.5:1V side slopes along the mirror field side and 2H:1V along the right-of-way side. The main southern segment has a 12 in thick "plate" of soil cement on the 3H:1V side slopes and a natural earthen bottom. A wide natural wash enters the channel at the southwest corner of the Beta West site. A 2-cell, 10-foot-wide and 6-foot-high box culvert coneys the flow across Lockhart Ranch Road to the Lockhart Channel.

4. South Beta Channel

The South Beta Channel is located along the south perimeter of the West Beta Site. Storm water is conveyed from the natural wash at the southwest corner of the Beta West site toward the east along Roy Road. The channel has a natural earthen bottom, a 12 in thick "plate" of soil cement on the 3H:1V side slope along the right-of-way, and along the other side are 12 in thick and 8 ft wide layers of soil cement along 2H:1V side slopes. Storm water discharges into the Main Beta Channel between the Beta West and Beta East sites.

5. Main Beta Channel

The Main Beta Channel is located along the southwest and west perimeters of the Beta East Site. Storm water is conveyed north from the South Beta Channel and southern portion of the Beta West site toward Lockhart Ranch Road. The channel has a 12 in thick "plate" of soil cement on the 3H:1V side slopes and a natural earthen bottom and 12 in thick and 8 ft wide layers of soil cement along the 1.5H:1V side slopes due to space limitations. A 6-cell 10-foot-wide and 6-foot-high box culvert conveys the flow across Lockhart Ranch Road to the Lockhart Channel.

6. East Beta Channel

The East Beta Channel is located at the southern and eastern perimeters of the Beta East site. Storm water is conveyed north and is discharged to the desert along the east perimeter of the Beta East site. The channel has a natural earthen bottom and 12 in thick "plate" of soil cement on 3H:1V side slopes. The outfall has an energy riprap energy dissipator to decrease velocity prior to discharge offsite.

b. **On-site Drainage System**

The On-site Drainage System directs overland flow to retention basins designed for percolation within the solar fields and the Alpha and Beta power islands.

1. Solar Field Retention

The Solar Field Retention Basins are placed between every other row or solar arrays and designed to provide on-site storage for the 100-year, 2-hour storm event (1.34 inches) and calculated to drain within 72 hours. The basins have 9H:1V slopes on the sides, are 1.5 ft deep, 57 ft wide and range between 189 ft and 391.5 ft long. The length varies by field and basin measuring 189 ft, 201.6 ft, and 391.5 ft across, respectively.

2. Power Island Retention

The Power Island Retention Basins are designed to provide on-site storage for the 100-year, 2-hour storm event (1.34 inches). The Alpha power island has three (3) retention basins, and the Beta power island has five (5) retention basins. The retention basins have 4H:1V side slopes and are 3 ft deep. The basins are calculated to drain within 72 hours.

18. Antidegradation Policy

The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings or facts. The Basin Plan implements, and incorporates by reference, state antidegradation policies. The permitted discharge is consistent with the antidegradation provision of Resolution No. 68-16 because either the permitted discharge will not be released into the environment or because adherence to these requirements will result in minor, if any, adverse impacts to water quality.

In accordance with State Water Board Resolution No. 68-16 and the Basin Plan, the following conditions must be met prior to any degradation of water of the State:

a. Any change in water quality must be consistent with maximum benefit to the people of the State;

b. The degradation will not unreasonably affect present and anticipated beneficial uses;

c. The degradation will not result in water quality less than that prescribed in the Basin Plan;

d. Discharges must use the best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the State.

19. Factors Considered for Waste Discharge Requirements

Pursuant to Water Code Sections 13263 and 13241, these WDRs consider the following factors:

a. **Past, present, and probable future beneficial uses of water (Water Code Section 13241(a)).** These WDRs identify past, present and probable future beneficial uses of water as described in Facts No. 13. The discharge will not adversely affect present or probable future beneficial uses of surface water or groundwater, because the waste management units have been designed to prevent unauthorized discharges of waste that may affect the beneficial uses of surface water and groundwater at the Facility. The surface impoundments are double lined and have a leachate detection and removal system. The LTUs are designed to remediate HTF contaminated soil. The detection monitoring program for the waste management unit and groundwater are designed to detect early release from the waste management units and the Applicant is required to implement a corrective action program in the event of a release.

b. **Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.** Fact No.11 describes the environmental characteristics and quality of water from this hydrographic unit.

c. **Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area.** Compliance with the requirements of these WDRs will protect groundwater quality. The Water Board will use its existing authority and these WDRs to ensure protection of water quality from the discharges.

d. **Economic considerations.** The burden of these WDRs, including costs of monitoring, bears a reasonable relationship to the need to protect groundwater as a municipal source of drinking water because the surrounding community does not have access to a public drinking water supply.

e. **The need for developing housing within the region.** The Applicant is not responsible for developing housing within the region.

f. **The need to develop and use recycled water.** The Commission and the Applicant are evaluating the feasibility of using recycled water as the water source for Facility operations.

Mojave Solar Project
Soil and Water Resources – Attachment B

MOJAVE SOLAR PROJECT
SOIL AND WATER RESOURCES
ATTACHMENT - B
WASTE DISCHARGE REQUIREMENTS

I. DISCHARGE LIMITATIONS AND PROHIBITIONS

A. Receiving Water Limitations

Receiving water limitations are based on narrative and numerical water quality objectives contained in the Basin Plan for all surface waters and groundwaters of the Lahontan Region. As such, the limitations must be met.

1. Surface Water

The Applicant must not cause the presence of the following substances or conditions in surface waters of the Harper Valley Hydrologic Subarea.

a. Ammonia – Ammonia concentrations must not exceed the values listed in Tables 3-1 to 3-4 of the Basin Plan for the corresponding conditions in these tables. Tables 3-1 to 3-4 of the Basin Plan are incorporated into these requirements by reference.

b. Fecal Indicator Bacteria, Escheria Coli (E. Coli) – For all waters where the salinity is equal to or less than 1 part per thousand, 95 percent of the time during the calendar year is, waters must not contain E.coli at concentrations that exceed a six week rolling geometric mean of 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly, and that exceed a Statistical Threshold Value of 320 cfu/100 mL by more than 10 percent of the samples collected in a calendar month, calculated in a static manner. The United States (U.S.) Environmental Protection Agency recommends using U.S. EPA Method 1603 or other equivalent method to measure culturable E. Coli.

c. Biostimulatory Substances – Waters must not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.

d. Chemical Constituents – Water designated as MUN must not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary MCL based upon drinking water standards specified in the following provisions of California Code of Regulations (CCR), Title 22, Division 4, Chapter 15, Article 1, Section 64400 et seq. This incorporation-by-reference is future oriented, including future changes to the incorporated provisions as the changes take effect.

e. Chemical Constituents – Waters designated as AGR must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

f. Chemical Constituents – Waters must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

g. Chlorine, Total Residual – For the protection of aquatic life, total chlorine residual must not exceed either a median value of 0.002 milligrams per liter (mg/L) or a maximum value of 0.003 mg/L. Median values must be based on daily measurements taken within any six-month period.

h. Color – Waters must be free of coloration that causes nuisance or adversely affects the water for beneficial uses.

i. Dissolved Oxygen – The dissolved oxygen concentration as percent saturation must not be depressed by more than 10 percent, nor must the minimum dissolved oxygen concentration be less than 80 percent of saturation. For waters with the beneficial uses of WARM (a beneficial use of surface water in the Lockhart Hydrologic Area), the minimum dissolved oxygen concentration must not be less than 3.0 mg/L daily minimum, 4.0 mg/L as a 7-day minimum, and 5.5 mg/L as a 30-day mean.

j. Floating Materials – Waters must not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. The concentrations of floating material must not be altered to the extent that such alterations are discernible at the 10 percent significance level.

k. Non-degradation of Aquatic Communities and Populations – All wetlands must be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animal, or plants; or that lead to the presence of undesirable or nuisance aquatic life. All wetlands must be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.

l. Oil and Grease – Waters must not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. The concentration of oils, greases, or other film or coat generating substances must not be altered.

m. pH – In fresh waters with designated beneficial use of COLD or WARM, changes in normal ambient pH levels must not exceed 0.5 pH units. The Commission recognizes that some waters of the Lahontan Region may have natural pH levels outside of the 6.5 to 8.5 range. Compliance with the pH objective for these waters will be determined

on a case-by-case basis.

n. Radioactivity – Radionuclides must not be present in concentrations, which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent, which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN must not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

o. Sediment – The suspended sediment load and suspended sediment discharge rate of surface waters must not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.

p. Settleable Materials – Waters must not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. The concentration of settleable materials must not be raised by more than 0.1 milliliter per liter.

q. Suspended Materials – Waters must not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. The concentration of total suspended materials must not be altered to the extent that such alterations are discernible at the 10 percent significance level.

r. Taste and Odor – Waters must not contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses.

s. Temperature – The natural receiving water temperature of all waters must not be altered unless it can be demonstrated to the satisfaction of the California Energy Commission that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature must not be altered by more than five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature must not be altered.

t. Toxicity – All waters must be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

   The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, must not be less than that for the same water body in areas unaffected by the waste

discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in the most recent edition of Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 2012, or subsequent editions).

u. Turbidity – Waters must be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity must not exceed natural levels by more than 10 percent.

2. Groundwater

The discharge of waste must not cause, or contribute to, a violation of the following water quality objectives for waters of the Harper Valley Groundwater Basin.

a. Bacteria, Coliform – In groundwaters designated as MUN, the median concentration of coliform organisms over any seven-day period must be less than 1.1/100 mL.

b. Chemical Constituents – Groundwaters designated as MUN must not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary MCL based upon drinking water standards specified in the following provisions of the Title 22 of CCR, which are incorporated by reference into this plan: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges). This incorporation-by- reference is prospective, including future changes to the incorporated provisions as the changes take effect.

   Groundwaters designated as AGR must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

   Groundwaters must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

c. Radioactivity – Groundwaters designated as MUN must not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

d. Taste and Odor – Groundwater must not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For groundwaters designated MUN, at a minimum, concentrations must not exceed adopted secondary MCLs specified in Table 64449-A of Section 64449 (Secondary Maximum Contaminant

Levels – Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels – Ranges) of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

B. Storm Water Limitations

1. The offsite discharge of storm water or sediment that contains HTF compounds is prohibited.
2. The Applicant must ensure that all storm drain inlets, perimeter controls, runoff conveyance systems, and pollutant control at entrances/exits are maintained and protected from activities that could reduce their effectiveness.
3. The Applicant must ensure that storm water discharges do not cause or contribute to an exceedance of any applicable water quality standard.
4. Storm water discharges must not exceed the following Annual Numeric Action Levels (ANAL) and Instantaneous Maximum Numeric Action Levels (INAL). The criteria for determining ANAL and INAL exceedances are found in Attachment C Section IV. 3.a.

Parameter	Reporting Units	ANAL	INAL
Acidity (pH)	pH units	N/A	Less than 6.0 Greater than 9.0
Total Suspended Solids	Mg/L	100	400
Oil & Grease	Mg/L	15	25
Lead	Mg/L	0.262	N/A

C. Surface Impoundment Waste Discharge Limitation

1. Waste generated from cooling tower water blow-down, and process water (e.g. the reject water from the reverse-osmosis system), are authorized to be discharged to the surface impoundments.
2. Any waste collected in any LCRS must be returned to the surface impoundments or transported offsite.
3. The discharge of heat transfer fluid to the surface impoundments is prohibited.
4. The discharge and storage of hazardous waste in the surface impoundments, as defined in CCR, Title 23, chapter 15, Section 2521, is prohibited.
5. The surface impoundments must have sufficient freeboard to accommodate seasonal precipitation and the design storm (1000-year 24-hour precipitation), but in no case less than 2 feet (measured vertically, from the water surface up to the point on the surrounding lined berm or

dike, having the lowest elevation).

6. The surface impoundments must be designed and maintained to limit the ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions of a 1,000-year, 24-hour storm event.
7. There must be no discharge, bypass, or diversion of waste from the surface impoundment to adjacent land areas or surface waters.
8. All lined facilities must be effectively sealed to prevent the exfiltration of liquids. For this project, "effectively sealed" facilities are the surface impoundments that are designed and constructed in accordance with the requirements of CCR, title 27.
9. The volume of liquids in the leachate collection and removal system (LCRS) must not exceed the Action Leakage Rate of 13,750 gallons per day (gpd). The Applicant is required to notify the Commission and Lahontan Regional Board within twenty-four hours whenever a determination is made that there is a fluid volume in the LCRS sumps in excess of the Action Leakage Rates.

Attachment B

Table 1 Summary of Neutron Probe Soil Moisture – Alpha Evaporation Pond Background Concentrations

Interval (feet)	Date	A-Wl/W2 NW	A-Wl/W2 CW	A-Wl/W2 SW	A-El/E2 NW	A-El/E2 CW	A-El/E2 SW
		Soil Moisture Readings (%)					
100	7/24/2013	2.22	1.9	2.21	2.63	1.74	2.32
	1/7/2014	2.33	2.36	2.1	2.55	2.3	2.43
	6/23 & 24 2014	2.19	2.19	2.28	2.32	2.49	2.54
200	7/24/2013	2.19	2.2	2.28	2.3	2.29	2.32
	1/7/2014	2.33	2.25	2.09	2.06	2.05	2.36
	6/23 & 24 2014	2.69	2.2	2.33	2.01	2.29	2.66
300	7/24/2013	2.14	2.13	2.57	2.29	2.21	2.08
	1/7/2014	2.52	2.13	2.36	2.26	2.33	2.76
	6/23 & 24 2014	2.27	2.17	2.28	2.26	2.52	2.69
400	7/24/2013	2.23	2.04	2.47	2.48	1.94	2.12
	1/7/2014	2.24	2.37	2.24	2.11	2.26	2.56
	6/23 & 24 2014	2.24	2.07	2.2	2.22	2.16	2.2
500	7/24/2013	2.53	2.09	2.43	2.49	2.56	2.17
	1/7/2014	2.45	2.17	2.46	2.08	2.11	2.6
	6/23 & 24 2014	2.52	2.2	2.32	2.41	2.41	2.51
600	7/24/2013	2.24	2.22	2.27	2.48	2.15	2.25
	1/7/2014	2.5	2.09	2.05	2.18	2.33	2.41
	6/23 & 24 2014	2.52	2.18	2.23	2.18	2.25	2.56

Notes:
A= Alpha evaporation pond, CW = center west, NW = northwest, SW = southwest, E* = east pond, W* = west pond, *according to Hushmand Associates, Inc., each pond (W and E) consists of two smaller ponds Wl & W2 and El

D. Land Treatment Unit (LTU) Waste Discharge Limitations

1. Only contaminated soil generated from the Facility may be treated at the LTU.
2. The discharge of contaminated soil with HTF concentrations above 10,000 mg/kg is prohibited.
3. The migration of HTF past the treatment zone and discharge of HTF compounds to groundwater or surface water is prohibited.
4. The discharge of fertilizers to groundwater or surface water is prohibited.
5. Soil treated at the LTU may be reused within the Facility boundary excluding any area within the 100-year floodplain if the concentrations of HTF in soil are less than or equal to 100 mg/kg.
6. The LTUs must be covered during precipitation events to prevent migration of contaminants to the vadose zone and groundwater aquifer.
7. Conducting bioremediation of HTF contaminated soil outside the designated LTUs is prohibited.
8. The discharge of polychlorinated biphenyl compounds is prohibited.
9. The discharge of hazardous waste, as defined in CCR, Title 22, Section 66261.3, and managed as required in CCR, Title 23, Section 2521, is prohibited.
10. Contaminated soil is authorized to be placed on plastic sheeting in the staging area to conduct waste characterization sampling procedures prior to placement in the LTU. The soil must be effectively managed to prevent transport of contaminated soil off the staging area and covered during precipitation events to prevent stormwater infiltration through the soil column and vadose zone.
11. Contaminated soil may be containerized to conduct waste characterization sampling procedures prior to placement in the LTU. The containers must be secured to prevent tipping and property labeled to identify the contents of the container for easy interpretation by regulatory and emergency response personnel.
12. The LTU must be operated to maximize the degradation, transformation, and immobilization of waste constituents in the treatment zone, in accordance with CCR, Title 27, Section 20377.
13. The land farm waste management units must be designed and constructed to limit ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions of a 1,000-year, 24-hour storm event.
14. Precipitation and drainage controls must be maintained to prevent erosion and to intercept and control run-on.
15. Storm water must be diverted from the LTU and into drainage and

collection facilities.

E. General Prohibitions

1. The discharge must not cause or threaten to cause a condition of contamination, pollution or nuisance as defined in CWC, Section 13050.
2. The discharge of waste, as defined in CWC, Section 13050, subdivision (d), must not cause an exceedance of any Water Quality Objective (WQO) contained in the Basin Plan.
3. Where any numeric or narrative WQO contained in the Basin Plan is already being exceeded, any discharge which causes further degradation or pollution is prohibited.
4. The discharge of waste, except to the authorized disposal sites, is prohibited.
5. Discharges of waste to the surface impoundments and LTUs is prohibited during containment system failure which causes a threat to water quality.
6. The discharge of waste into waters of the Lahontan Region is prohibited, except for the discharge of monitoring well purge water to the ground.
7. The discharge or deposition of any waste into channels, surface water, or any place where it would be discharged or deposited where it would be eventually transported to surface waters, including the 100-year floodplain, must not contain or consist of any substance in concentrations toxic to animal or plant life.
8. The Applicant must at all times maintain adequate and viable financial assurances acceptable to the Lahontan Regional Board for costs associated with closure, post-closure maintenance and monitoring, and for corrective action for all known or reasonably foreseeable releases from the waste management units.

II. PROVISIONS

1. Duty to Comply

   The Applicant must comply with terms and conditions of these WDRs including the Monitoring and Reporting Program outlined in Attachment C.

2. Compliance with Laws and Regulations

   Nothing in these WDRs are to be construed as relieving the Applicant from the obligation of obtaining all required permits, licenses, or other clearances, and complying with all orders, laws, regulations, or other requirements of other approval, regulatory or enforcement agencies, such as, but not limited to the Department of Toxic Substances Control, local health entities, water and air quality control boards, local land use authorities, fire authorities, etc.

3. Duty to Mitigate

   The Applicant must take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of affecting human health or the environment.

4. Hazardous Waste Storage

   a. Hazardous waste storage containers must be in good condition, and if the containers begin to leak, the contents must be transferred to a suitable container.

   b. Containers must be closed except when necessary to add or remove waste.

   c. Storage areas must prevent run-on and be able to hold a specific volume of liquid (10 percent of the total volume of containers or the volume of the largest container, whichever is greater).

   d. Tanks must be designed to prevent spills and overflows, with special precautions for ignitable, incompatible, or reactive wastes.

   e. Hazardous waste must be removed according to the waste generation accumulation time limits.

   f. Containers must be clearly labeled with the words "Hazardous Waste", a description of the contents, hazardous waste code, and the date the waste was first added.

   g. Personnel must be trained in proper handling of hazardous waste and emergency procedures in the event of a release and exposure.

   h. Facilities must have a plan for emergencies and have appropriate equipment on-site.

   i. A hazardous waste manifest must accompany waste shipments off-site to track the waste from "cradle to grave".

5. Inspection and Entry

   The Applicant must permit Regional Board and Commission staff:

   a. To enter upon premises in which a discharge source is present or in which any required records are kept.

   b. To inspect and copy any records relating to the discharge or relating to compliance with the WDRs.

   c. To inspect monitoring equipment and discharge locations.

   d. To sample any discharge and waste management unit.

6. Reporting Requirements

   The Discharge must comply with the following reporting requirements:

a. the Applicant must immediately notify the Lahontan Regional Board and Commission by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation must follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum, toxic chemicals, or damage to control facilities that could affect compliance.

b. If an Applicant becomes aware that any information submitted to the Commission and the Lahontan Regional Board are incorrect, the Applicant must immediately notify the Commission and the Lahontan Regional Board, in writing, and correct that information.

c. Reports required by the WDRs, and other information requested by the Lahontan Regional Board, must be signed by a duly authorized representative of the Applicant.

7. Proper Operation and Maintenance

The Applicant must always properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Applicant to achieve compliance with the WDRs. Proper operation and maintenance include adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Applicant, when necessary to achieve compliance with the conditions of the WDRs.

8. Public Access

General public access must be effectively excluded from treatment and disposal facilities.

III. REQUIREMENTS

A. Spill Response Program

1. The Applicant must comply with the Release Response requirements outlined in Attachment C, Section IV.A.
2. Chemicals must be stored in locked watertight containers with appropriate secondary containment.
3. The Applicant must establish a spill response plan to identify and remediate equipment spills and leaks.
4. The Applicant must notify the Lahontan Regional Board within one business day of any flooding, slope failure or other change in site conditions that could impair the integrity of the waste management units or of precipitation and drainage control structures.
5. The Applicant must correct any failure that threatens the integrity and

functionality of the waste management units within 90 days, after approval of the method, in accordance with a schedule established by the Lahontan Regional Board as specified in CCR, Title 27, Section 21710, subdivision (c)(2).

6. All unauthorized waste discharges must be cleaned up within 48 hours.
7. Discharges to land of forty-two (42) gallons of sewage, chemicals, cooling tower blowdown, and reverse-osmosis reject water, must be reported to the California Energy Commission and the Lahontan Regional Board within 24 hours.
8. Discharges to land of one (1) cubic yard of solid waste, sewage sludge, and contaminated soil must be reported to the Lahontan Regional Board and Commission within 24 hours.
9. Any volume of discharge to land within five (5) feet of groundwater, 500 feet of surface water, 500 feet of a water well and 500 feet of a domestic water supply source must be reported to the Lahontan Regional Board and Commission within 24 hours.
10. Any volume of discharge causing or threatening pollution of surface or ground water, causing nuisance, affecting or threatening public health, equal to or more than a reportable quantity must be reported to the Lahontan Regional Board and Commission within 24 hours.
11. Spills of 10 pounds (4.54 kg) or greater of biphenyl and diphenyl ether must be reported to the National Response Center, the Lahontan Regional Board and Commission within 24 hours.
12. Contaminated soil must be removed and placed on plastic sheeting in the staging area or placed in secured containers pending waste characterization results and prior to placement into the LTU.
13. Representative soil samples must be collected to characterize the contaminated soil and must be analyzed by a California certified laboratory accredited to conduct the specific analytical method.
14. Disposal of contaminated soil resulting from HTF spills that exceed hazardous waste levels must be conducted according to applicable hazardous waste, generation, transportation and disposal regulations.

B. **Monitoring and Reporting Program**

The Applicant must comply with the Monitoring and Reporting Program (MRP) as established in Attachment C.

C. **Detection Monitoring Program**

1. Pursuant to CCR, Title 27 Section 20420, the Applicant is required to implement a detection monitoring program for the Facility as established in Attachment C. The detection monitoring program for the surface impoundments consists of monitoring the LCRS, vadose zone (neutron probe

network), and groundwater. The detection monitoring program for the LTU consists of collecting and analyzing samples of the native soil in, and underneath, the treatment zone and groundwater for the presence of HTF compounds. The detection monitoring program consists of conducting visual observations, collecting and analyzing storm water samples at each discharge location.

D. **Verification Procedures**

Whenever there is a determination that there is measurably significant evidence or significant physical evidence of a release, the Applicant must initiate verification procedures as specified below.

1. The Applicant must either conduct a composite retest using data from the initial sampling event with all data obtained from the resampling event or must conduct a discrete retest in which only data obtained from the resampling event must be analyzed to verify evidence of a release. Alternatively, the Applicant may perform a pass 1-of-3 retesting approach using quarterly samples, as an engineered alternative.
2. The verification procedure need only be performed for the constituent(s) that has shown a measurably significant evidence of a release and must be performed for those monitoring points at which a release is indicated.
3. Within seven days of receiving the results of the last laboratory analyses for the retest, the Applicant must report to the Water Board and Commission by certified mail the results of the verification procedure and all data collected for use in the retest.
4. If the Applicant or Commission verifies that there is evidence of a release, the Applicant is required to submit a technical report to the Commission. The report must propose an EMP (see Attachment B, section III.F) or give a demonstration that there is a source other than the Facility that caused evidence of a release.
5. If the Applicant declines to conduct verification procedures, the Applicant must submit a technical report, as specified in this Order, Attachment B, section III.E.

E. **Technical Report Without Verification Procedures**

If the Applicant chooses not to initiate verification procedures after there has been evidence of a release, a technical report must be submitted pursuant to CWC, Section 13267(b). The report must propose an EMP or attempt to demonstrate that the release did not originate from the Facility.

F. **Evaluation Monitoring Program**

The Applicant must establish an EMP whenever there is measurably significant evidence or significant physical evidence of a release from a WMU pursuant to CCR, Title 27, Section 20425. Within 90 days of initiating an EMP, the Applicant

must delineate the nature and extent of the release, as well as develop, propose, and support corrective action measures to be implemented in a Corrective Action Program (CAP).

G. **Corrective Action Program**

A CAP to remediate detected releases from the surface impoundments and LTU is required pursuant to CCR, Title 27, Section 20430, if results of an EMP warrant a CAP. The Applicant must implement a CAP until the concentrations of constituents of concern (COCs) are reduced to levels below their respective concentration limits throughout the entire zone affected by the release.

H. **Storm Water Pollution Prevention Plan**

1. The Applicant must develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that incorporates Best Management Practices (BMPs) to reduce and prevent pollution and contamination from storm water discharges
    a. "Best Management Practices" means any program, technology, process, siting criteria, operating method, measure, or device which controls, prevents, removes, or reduces pollution.
    b. "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects the waters for beneficial uses or facilities which serve these beneficial uses (Water Code, Section 13050(l)(1)).
    c. "Contamination" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected (Water Code, Section 13050(l)(2)).
2. The Applicant must implement minimum BMPs to reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability.
3. The Applicant must revise BMPs as necessary when visual observations and sampling results indicate pollutant sources have not been adequately addressed in the SWPPP.
4. The SWPPP must include the following elements:
    a. A site map that clearly indicates the storm water discharge locations and direction of flow.
    b. A list of chemicals used onsite including the handling and storage areas.
    c. A narrative description of potential pollution sources.

d. An assessment of potential pollution sources.

e. A description of the facility locations where soil erosion may be caused by Facility operations, contact with storm water, or run-on from areas surrounding the facility.

f. The minimum BMPs and advanced BMPs that will be implemented to reduce or prevent pollutants in storm water.

g. The additional BMPs that will be implemented to address exceedances of water quality standards.

h. A monitoring and reporting plan that complies with the monitoring and reporting requirements outlined in Attachment C for storm water discharges.

i. Annual Comprehensive Facility Compliance Evaluation (Annual Evaluation).

j. Date the SWPPP was initially prepared and the date of each SWPPP amendment.

5. The SWPPP must be prepared to evaluate all sources of pollutants that may affect the quality of storm water discharges and describe the actions the Applicant will implement to comply with these WDRs.
6. Storm water samples must be representative of storm water discharges associated with Facility operations.
7. Additional storm water sampling parameters may be modified (added or removed) in accordance with any pollutant source assessment.
8. The Applicant must comply with the requirements, provisions, limitations and prohibitions for storm water discharges outlined in these WDRs.
9. The Applicant must comply with the monitoring and reporting program for stormwater discharges outlined in these WDRs.

I. Water Quality Protection Standard

1. The Water Quality Protection Standard (WQPS) consists of constituents of concern (COCs), concentration limits, monitoring points, and the point of compliance. The COCs, monitoring points, and point of compliance for groundwater and unsaturated zone monitoring are described in Attachment C., which is made part of these WDRs.

2. The WQPS must apply over the active life of the surface impoundments and LTUs, closure and post-closure maintenance period, and the compliance period of the Facility in accordance with CCR, Title 27, Section 20410(a).

3. At any given time, the concentration limit for each COC must be equal to the background data set of that constituent unless a concentration limit greater than background has been established. The background data set for each

monitoring point/constituent pair should be comprised of at least eight data points, collected quarterly.

4. If concentration limits are exceeded, the Applicant must immediately institute verification procedures as specified in Attachment B, section III. D., of this Order. Alternatively, the Applicant may submit a technical report within 90 days to propose an EMP or demonstrate that the release did not originate from the facility. Within 90 days of the Commission authorizing the EMP, the Applicant must complete the delineation, develop a suite of proposed corrective action measures, and submit a revised ROWD with a proposed CAP for adoption by the Commission.

5. Monitoring of the groundwater and unsaturated zone must be conducted to obtain background data and to provide the best assurance of the early detection of any new releases from the WMUs.

J. Closure and Post-Closure Maintenance

1. Surface Impoundments

a. All free liquid remaining in the surface impoundments at the time of closure must be removed and discharged to an appropriate waste management unit pursuant to Title 27, Section 21400(a), of CCR.

b. Following removal of the free waste, the Applicant must attempt to "clean-close" the waste management units pursuant to Title 27, Section 21400(b)(1), of CCR.

c. If it is determined that removal of all contaminants is infeasible, after reasonable attempts to remove all contaminated materials is conducted, the Applicant may request to close the surface impoundments as a landfill pursuant to Title 27, Section 21400(b)(2)(A), of CCR.

d. If the surface impoundments are closed as a landfill, the Applicant must comply with the closure and post-closure maintenance requirements outlined in Division 2, Chapter 3, Subchapter 5, Article 1 and Article 2 of CCR.

2. Land Treatment Units

a. During the closure and post-closure period, the Applicant must comply with the LTU requirements outlined in Title 27, Section 21420, CCR which includes:

1. Continue all operations necessary to maximize degradation, transformation, or immobilization of waste constituents within the treatment zone; and,

2. Continue all groundwater and unsaturated zone monitoring; and,

3. Continue all operations in the treatment zone to prevent runoff of

waste constituents; and,

4. Maintain the precipitation and drainage control systems.

K. Construction Requirements

1. Provisions for Impacts to State Waters

a. Construction equipment must be clean and free from oil, grease, and loose metal material and must be removed from service if necessary to protect water quality.

b. No debris, cement, concrete (or wash water therefrom), oil or petroleum products must be allowed to enter into or be placed where it may be washed from the Facility site by rainfall or runoff into waters of the State. When operations are completed, any excess material must be removed from the Facility work area and any areas adjacent to the work area where such material may be transported into waters of the State as defined in Water Code Section 13050.

c. No equipment may be operated in areas of flowing or standing water; no fueling, cleaning, or maintenance of vehicles or equipment must take place within any areas where an accidental discharge to waters of the Sate may occur; construction materials and heavy equipment must be stored outside of the flow of the waters of the State. When work within the boundaries of waters of the State is necessary, the entire streamflow must be diverted around the work area, temporarily, as needed to control waste discharge.

d. The Applicant must ensure that discharges do not cause or contribute to an exceedance of any applicable water quality standard.

e. The Applicant must have in place adequate emergency response plans in order to clean up any spill or release of any waste at the Facility.

2. Surface Impoundment Construction Criteria

a. Surface impoundments must be designed and constructed as Class II surface impoundments for designated waste, as specified in Title 27, Section 20210 of the California Code of Regulations (CCR).

b. Surface impoundments must be designed by, and construction must be supervised and certified by a registered civil engineer or a certified engineering geologist, pursuant to Title 27, Section 20310(e), CCR.

c. Class II surface impoundments must be designed and constructed to prevent migration of waste from the Units to adjacent geologic materials, groundwater, or surface water, during disposal operations, closure, and the post-closure maintenance period, pursuant to Title 27, Section 20310(a), CCR.

d. Surface impoundments must be sited, designed, constructed and operated to ensure that waste will be a minimum of five feet above the highest

anticipated elevation of underlying groundwater, pursuant to Title 27, Section 20240(c), CCR.

e. Surface impoundments must be fitted with liners and leachate collection and removal systems as described in Title 27, Sections 20250(b)(4), 20330 and 20340, CCR.

f. Surface impoundments must be fitted with subsurface barriers, as needed and feasible, pursuant to Title 27, Section 20360, CCR.

g. Surface impoundments must be fitted with precipitation and drainage control facilities for the design storm (1000-year 24-hour precipitation) as described in Title 27, Section 20365, CCR.

h. Surface impoundments must be designed and constructed to prevent overtopping as a result of wind conditions likely to accompany the design storm, pursuant to Title 27, Section 20375(a), CCR.

i. Surface impoundments must be designed, constructed operated and maintained to prevent inundation or washout due to floods with a 100-year return period, pursuant to Title 27, Section 20250(c), CCR.

j. Surface impoundments must have a 200-foot setback from any known Holocene fault, pursuant to Title 27, Section 20250(d), CCR.

k. Surface impoundments must be designed to withstand the maximum credible earthquake without damage to the foundations or to the structures that control leachate, surface drainage, erosion, or gas, pursuant to Title 27, Section 20370(a), CCR.

l. Surface impoundments must be equipped with devices or have fail safe operating procedures to prevent overfilling, pursuant to Title 27, Section 20375(c), CCR.

m. Surface impoundments must be designed and constructed to prevent scouring of containment structures at points of discharge into the impoundments and by wave action at the water line.

3. **Leachate Collection and Removal Systems**

Leachate collection and removal systems (LCRS) are required for the Class II surface impoundments. The following elements must be incorporated into the design, construction and operation of the LCRS pursuant to CCR Title 27, Section 20340.

a. The LCRS must consist of a permeable subdrain layer which covers the bottom of the Unit and extends as far up the sides as possible (i.e., blanket type).

b. The LCRS must be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and by any equipment used at the Unit.

c. LCRS must be installed between the inner and outer liner of a double liner system.

d. The LCRS must be designed, constructed, maintained and operated to collect and remove twice the maximum anticipated daily volume of leachate from the Unit.

e. The LCRS must be designed and operated to ensure that there is no buildup of hydraulic head on the liner.

f. The depth of fluid in the collection sump must be kept at the minimum needed to ensure efficient pump operation.

g. The LCRS must be designed and operated to function without clogging through the scheduled closure of the Unit and during the post closure maintenance period.

h. The depth of fluid in the collection sump must be kept at the minimum needed to ensure efficient pump operation.

4. **Land Treatment Unit Construction Criteria**

a. LTUs must be designed by, and construction must be supervised and certified by, a registered civil engineer or a certified engineering geologist, pursuant to Title 27, Section 20310(e), CCR.

b. LTUs must be designed, constructed, operated and maintained to maximize the degradation, transformation, and immobilization of waste constituents in the treatment zone, pursuant to Title 27, Section 20377(b), CCR.

c. LTUs must be sited, designed, constructed and operated to ensure the base of the treatment zone is five feet above the highest anticipated elevation of underlying groundwater, pursuant to Title 27, Section 20240(c), CCR.

d. The maximum depth of the treatment zone must not exceed 5 feet from the initial soil surface, pursuant to Title 27, Section 20250(b)(5), CCR.

e. Materials used in LTUs must have appropriate chemical and physical properties to ensure that such structures do not fail to contain the waste because of pressure gradients (including hydraulic head and external hydrogeologic forces), physical contact with the waste or leachate, chemical reactions with soil and rock, climatic conditions, the stress of installation, or because of the stress of daily operation, pursuant to Title 27, Section 20320(a), CCR.

f. Earthen materials used in the LTUs must consist of a mixture of clay and other suitable fine-grained soils which have the following characteristics, and which, in combination, can be compacted to attain the required hydraulic conductivity ($1x10^{-6}$ cm/sec) when installed.

1. At least 30 precent of the material, by weight, must pass a No. 200

U.S. Standard Sieve.

2. The materials must be fine grained soils with a significant clay content and without organic matter, and which is a clayey sand, clay, sandy or silty clay, or sandy clay under a soil classification system having industry wide use [e.g., the "SC", "CL" or "CH" soil classes under ASTM Designation: D2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)].

g. LTUs must be equipped with precipitation and drainage controls that comply with Title 27, Section 20365, CCR.

h. LTUs must be designed to withstand the maximum credible earthquake without damage to the foundation or to the structures which control leachate, surface drainage, erosion or gas.

5. **Construction Storm Water Management**

a. Post-construction storm water flows emanating from the facility site must not exceed predevelopment levels, runoff from newly constructed impervious areas that is greater than background levels must be treated and detained to predevelopment runoff level. Methods such as low impact development may be used to achieve this requirement (see State Water Board Resolution No. 2008-0030). Detention and/or infiltration facilities for a 10-year, one-hour storm event fulfills this requirement for the purposes of these requirements.

b. The Applicant must implement Best Management Practices (BMPs) to prevent or reduce the discharge of waste associated with water contacting construction materials or equipment.

c. The Applicant must control run-on from offsite areas, route flows away from disturbed areas in a manner that does not cause onsite or offsite erosion and proved controls to minimize run-on and problems from storm water flow into active or disturbed Facility areas from offsite areas.

d. The Applicant must provide effective cover, mulch, fiber blankets, or other erosion control for soils disturbed by construction activities.

e. The Applicant must provide BMPs for erosion stabilization for all areas of disturbed soil regardless of the time of year, including erosion from rainfall and wind.

f. The Applicant must, at all times, maintain effective perimeter controls and stabilize all construction entrances/exits sufficiently to control erosion and soil or sediment discharges from the site.

g. The Applicant must properly install and effectively maintain all BMPs for storm drain inlets, perimeter controls, runoff control BMPs, and stabilized entrances/exits, ensuring they are protected from activities that could reduce their effectiveness.

L. **Final Construction Quality Assurance Report**

No later that 180 days following the construction completion of a waste management unit (WMU), and at least 60 days prior to discharge into the WMU, a Final Construction Quality Assurance Report, required by CCR, Title 27, Section 20324, must be submitted for review and acceptance.

The report must be certified by a California professional civil engineer or a California professional engineering geologist. The report must contain sufficient information and test results to verify specifications and with the accepted engineered alternative to the prescriptive standards and performance goals of CCR. Title 27.

M. **Monitoring Systems Installation Report**

No later than 90 days following the construction completion of a monitoring system or monitoring system component, and at least 60 days prior to discharge to a new WMU, the Applicant must submit a technical report discussing the installation of the monitoring systems or monitoring system component for the WMU.

The report must summarize all work activities associated with the installation of the groundwater and vadose zone monitoring systems and contain sufficient information to verify that the construction was in accordance with State and/or County standards. The report must be certified by a California professional civil engineer or a California professional geologist.

N. **Compliance Period**

The compliance period is the number of years equal to the active life of the waste management units, plus a minimum of 30 years during the post-closure period. The compliance period is the minimum period during which the Applicant must conduct a water quality monitoring program subsequent to a release from the waste management units. The compliance period must begin anew each time the Applicant initiates an evaluation monitoring program.

O. **Financial Assurances**

The Applicant must maintain adequate financial assurances to cover the costs of closure, post-closure maintenance and for corrective actions of all known or reasonably foreseeable releases. A copy of the financial assurance mechanism must be provided to the CPM and the Lahontan Regional Board with a detailed explanation verifying whether the amount of funds is sufficient to perform the above-described tasks. Evidence must include the total amount of money available in the fund developed by the Applicant.

P. **Electronic Submittal of Information**

The Applicant must electronically submit all technical reports, laboratory analytical results, groundwater monitoring well survey data, site maps, groundwater well construction logs, boring logs, and depth to groundwater to

GeoTracker, pursuant to CCR, Title 23, Section 3890 (et. Seq.). GeoTracker is the State Water Resources Control Board's online database for public information related to environmental site assessment.

Mojave Solar Project
Soil and Water Resources – Attachment C

MOJAVE SOLAR PROJECT
SOIL AND WATER RESOURCES
ATTACHMENT - C
MONITORING AND REPORTING PROGRAM

MONITORING AND REPORTING REQUIREMENTS

This Monitoring and Reporting Program (MRP) is issued to Mojave Solar LLC (Applicant) for the Mojave Solar Project (Facility) Class II Surface Impoundments and Land Treatment Units and incorporates requirements for groundwater, unsaturated zone, and storm water monitoring and reporting. For the purposes of this MRP, the Class II Surface Impoundments are referred to as the "surface impoundments," and the bioremediation units that treat soil contaminated with heat transfer fluid (HTF) are referred to as the "land treatment units (LTUs)." The surface impoundments and LTUs are collectively referred to as the "waste management units (WMU)".

I. WATER QUALITY PROTECTION STANDARD

A Water Quality Protection Standard (WQPS) is required by CCR, Title 27, to assure the earliest possible detection of a release from the Facility to underlying soil and/or groundwater. The WQPS must consist of the list of constituents of concern, the concentration limits, the point of compliance and all monitoring points. This WQPS must apply during the operation, closure, post-closure maintenance period, corrective action and during any compliance period.

A. Constituents of Concern

The Constituents of Concern (COCs) include all waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from the waste. The Applicant must monitor all media for all COCs at the frequencies listed in Enclosure 1 of this MRP.

B. Monitoring Parameters

Monitoring parameters are those COCs that provide a reliable indication of a release from the WMUs and the storm water conveyance systems. The monitoring parameters are listed in Enclosure 1 of this MRP. The Applicant must monitor all monitoring parameters at the frequencies listed in Enclosure 1 of this MRP.

C. Concentration Limits

Concentration limits are intended to reflect background ambient conditions of surface and subsurface media that are unaffected by releases from the WMUs. At any given time, the concentration limit for each COC must be equal to the background data set of the constituent unless a concentration limit greater than background has been established.

D. Compliance and Monitoring Points

The compliance and monitoring points for the surface impoundments and LTUs are detailed in Enclosure 2, Figure 4, of this MRP. The compliance and monitoring points for the storm water monitoring program are included in the SWPPP.

E. Compliance Period

The compliance period is the number of years equal to the active life of the Facility plus any post-closure monitoring and maintenance period until the Lahontan Regional Water Quality Control Board (Lahontan Regional Board) finds the WMUs and storm water conveyance systems are no longer a threat to water quality. The compliance period is the minimum period during which the Applicant must conduct a water quality monitoring program. The compliance period will begin anew each time there is a release from the WMU and storm water conveyance system. The compliance period may be extended if the Applicant is not in compliance with the WQPS.

II. MONITORING REQUIREMENTS

The Applicant must comply with the monitoring requirements outlined below. All monitoring and inspection activities must be documented, and all sampling must be conducted in accordance with an accepted Sampling and Analysis Plan (SAP) that includes quality assurance and quality control standards and procedures, as described in the General Provisions for Monitoring and Reporting, MRP Section V, and as required in Attachment B, Section III.C.

The Applicant must operate and maintain a detection monitoring system that complies with the detection monitoring provisions contained in CCR, Title 27, Sections 20380 through 20435. Monitoring of the groundwater, unsaturated zone, and storm water must be conducted to provide the best assurance of the early detection of any new releases from the Facility. Changes to the existing monitoring system must be designed and certified by a California-licensed professional geologist or professional civil engineer as meeting the requirements of 27 CCR, Section 20415(e)(1). The Applicant must collect, preserve, and transport samples in accordance with the SAP.

All samples collected in accordance with this MRP, except for field parameters, are to be analyzed by a California state-certified laboratory using United States Environmental Protection Agency (USEPA) analytical methods or the most recently approved SW-846 USEPA method or other equivalent USEPA method.

A. Surface Impoundment Monitoring

Discharge to the surface impoundments is derived from two primary sources; water generated from cooling tower blow down and reverse-osmosis system reject water generated from treatment of water for use at the solar fields.

The Applicant must monitor the composition of waste discharged to the surface

impoundments through the collection of liquid and solid samples for laboratory analyses. All observations and measurements must be recorded in a permanent logbook kept onsite.

1. Flow Monitoring

   Daily, the Applicant must monitor the following:

   a. The volume of cooling tower blow-down and reverse-osmosis system reject water discharged to the surface impoundments, in million gallons per day (MGD).

   b. The maximum flow rate to the surface impoundments per day.

   c. The monthly cumulative total of discharge to the surface impoundments.

2. Waste Discharge Monitoring

   a. Monitoring Points

      A liquid grab sample must be collected from each surface impoundment, if possible, at a depth of one foot below the water surface elevation, and in an area of the surface impoundment away from the discharge point. If the surface impoundment is dry at the time of monitoring, this information must be recorded and reported.

   b. Monitoring Parameters and Constituents of Concern

      The Applicant must monitor the surface impoundment liquids for all COCs and monitoring parameters in accordance with the frequencies listed in Enclosure 1, Table 1.

   c. Field Parameters

      The Applicant must monitor the surface impoundment liquid for all field parameters in accordance with the frequencies listed in Enclosure 1, Table 1.

3. Sludge Monitoring

   a. A grab sample of the sludge (if present) in each surface impoundment must be collected and the samples analyzed for all monitoring parameters and COCs in accordance with the frequencies listed in Enclosure 1, Table 2.

   b. Those analytes that exceed the Total Threshold Limit Concentration (TTLC) must be analyzed for the Soluble Threshold Limit Concentration (STLC).

c. Those analytes that equal or exceed the STLC value, but not the TTLC value, must be analyzed using Waste Extraction Test (WET) procedures.

4. Dikes and Liners Monitoring

   a. Daily, the freeboard must be measured from the top of the lowest part of the dike to the top of the waste surface. If the surface impoundment is dry, indicate that it is empty.

   b. Monthly, the integrity of the dikes and liners must be inspected. Should the inspection indicate any damage to the dikes or liners or if an unauthorized discharge has occurred, or is likely to occur, the Commission and Lahontan Regional Board must be notified within 48 hours, followed by confirmation in writing.

5. Leachate Collection and Removal System (LCRS) Monitoring

   a. Daily, a visual inspection for liquid in the leachate collection detection sumps must be conducted for each surface impoundment.

      1. Upon detection of liquid in a LCRS (1) at a volume greater than one-half of the Action Leakage Rate (ALR) or (2) for three consecutive liquid detections, the Applicant must immediately collect a grab sample of the liquid and analyze the sample for all COCs and monitoring parameters listed in Enclosure 1, Table 1.

   b. Daily, record the volume of liquid pumped out of the LCRS (in gpd) for each surface impoundment along with date, time and location.

   c. Annually, the LCRS must be tested to demonstrate proper operation. The results of the tests must be compared with earlier tests made under comparable conditions.

6. Unsaturated Zone Monitoring

   The unsaturated (vadose) zone monitoring program for the surface impoundments includes monitoring for soil-pore moisture using neutron probes and a sampling program in the event moisture is detected.

   1. Semiannually, the Applicant must check for the presence of excess moisture below the surface impoundment liners using a neutron moisture probe calibrated for use at the site.

      1. The soil moisture results must be compared to previously determined background/baseline soil moisture content.

      2. If moisture content is detected above background:

         1. Field verification testing must be performed. Field verification testing must include a combination of additional neutron analysis and laboratory analysis of liquids drawn from the neutron probe casing. Samples must be analyzed for the field parameters,

monitoring parameters and COCs listed in Enclosure1, Table 1.

2. The Applicant must notify the CPM and the Lahontan Regional Board to report physical evidence of a release.

B. Land Treatment Unit Monitoring

Discharge to the land treatment units is derived from soil that has been contaminated with HTF. The detection monitoring for the land treatment units is outlined below.

1. Volume Discharge Monitoring

a. The Applicant must monitor and record the volume of contaminated soil in the waste staging areas and the volume of soil that is placed in the land treatment units.

2. Waste Characterization Monitoring

a. The Applicant must characterize the waste prior to placement in the land treatment units.

1. The Applicant must analyze samples for the monitoring parameters and constituents of concern at the frequencies listed in Enclosure 1, Table 3.

i. Those analytes that exceed the Total Threshold Limit Concentration (TTLC) must be analyzed for the Soluble Threshold Limit Concentration (STLC).

ii. Those analytes that equal or exceed the STLC value, but not the TTLC value, must be analyzed using Waste Extraction Test (WET) procedures.

3. Waste Placement Monitoring

a. The Applicant must record the date and location where the soil from the land treatment is reused onsite.

4. Unsaturated Zone Monitoring

a. The Applicant must verify that HTF is not migrating past the 5-foot vertical treatment zone underlying the land treatment units. Four soil samples (one sample from each quadrant of each unit) must be collected at a depth of one foot below the five-foot vertical treatment zone and analyzed for the monitoring parameters, COCs, and frequencies listed in Enclosure 1, Table 4.

b. If results of any sample analysis indicate that components of HTF are detected above background, the Applicant must:

1. Within two weeks, repeat deeper sample collection at one-foot intervals and must repeat sample collection until laboratory analytical

results show that concentrations are no longer greater than background.

2. Report physical evidence of release according to the MRP, Attachment C, section IV.A.

C. Groundwater Monitoring

The groundwater monitoring program monitors the quality of groundwater that passes through the point of compliance as well as monitors the quality of groundwater upgradient, cross-gradient, and downgradient of the WMUs through the collection of groundwater samples for laboratory analysis and field measurement of water quality parameters.

1. Monitoring Points

Groundwater monitoring points are shown in Enclosure 2, Figure 4. The Applicant must collect samples from all groundwater monitoring wells within the perched zone and upper regional aquifer. If a well is dry, the Applicant must report that the well is dry.

2. Depth to Groundwater

Prior to purging and sampling, the Applicant must measure and record the depth below the ground surface of the static groundwater level (feet below ground surface [ft bgs]) in all groundwater monitoring wells. The measurements must be accurate to the nearest 0.01 foot.

3. Groundwater Purging and Sampling

Prior to sampling, all groundwater monitoring wells must be purged using either standard or low-flow techniques until dissolved oxygen (DO), electrical conductivity, pH, temperature, and turbidity of extracted well water have stabilized. The stabilization parameters are provided in the table below.

Parameter	Criteria
Temperature	± 3% of reading (minimum of ± 0.2 C)
Acidity (pH)	+/- 0.1
Specific electrical conductance	+/- 3%
Oxidation-reduction potential	+/- 10 millivolts
Dissolved oxygen	+/- 0.3 milligrams per liter

4. Monitoring Parameters and Constituents of Concern

   The Applicant must monitor, at each groundwater monitoring well, all COCs and monitoring parameters in accordance with the frequencies listed in Enclosure 1, Table 5. Should any non-monitoring parameter COC exceed their respective concentration limit by a measurably significant amount at any given monitoring point, that non-monitoring parameter COC must become a monitoring parameter at that monitoring point.

5. Field Parameters and Supplemental Parameters

   The Applicant must monitor the groundwater for all field parameters in accordance with the frequencies listed in Enclosure 1, Table 5.

6. Visual Inspections

   Semi-annually, during the sampling events, groundwater monitoring wells must be inspected for damage. Any adverse conditions found in the visual inspection of the wells must be documented and promptly corrected.

D. Storm Water Monitoring

1. Visual Observations

   a. Monthly, the Applicant must observe all outdoor areas associated with the Facility operations, including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by storm water discharges to determine compliance with the WDRs. The results of the inspections must be recorded in a logbook or on designated inspection forms. The Applicant must record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.

   b. Semi-annually, the Applicant must conduct visual observations during sampling events at each discharge location where a sample is obtained. The Applicant must record the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odor, trash/debris, and sources of any discharged pollutants. The results of the observations must be recorded in a permanent logbook or on designated inspection forms.

2. Sampling and Analysis

a. The Applicant must collect a storm water sample from one (1) Qualifying Storm Event (QSE) and have the samples analyzed for the constituents and at the frequencies listed in Enclosure 1, Table 6. A "QSE" is a precipitation event that:

    1. produces a discharge for at least one drainage area; and,
    2. is preceded by 48 hours with no discharge from any drainage area.

b. Samples from each discharge location identified in the SWPPP must be collected within four (4) hours of:

    1. The start of the discharge; or,
    2. The start of facility operations if the QSE occurs within the previous 12-hour period (e.g., for storms with discharges that begin during the night for facilities with daytime operating hours).

III. DATA ANALYSES

All data analysis methods (statistical and non-statistical) must meet the requirements of 27 CCR, Sections 20415, subdivisions (e)(8) and (9).

A. Site-Specific Statistical Analysis Method

To determine whether there is "measurably significant" evidence of any new releases from the WMUs and storm water conveyance system, evaluation of data must be conducted using statistical methods. For detection monitoring, the Applicant must use statistical methods to analyze COCs and monitoring parameters that exhibit concentrations that equal or exceed their respective background value or concentration limit. The Applicant may propose and use any data analysis that meets the requirements of 27 CCR, Section 20415, subdivision (e)(7). Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (USEPA, 2009) or subsequent versions may also be used to select the statistical test to use for comparing detection monitoring data to background monitoring data.

B. Non-Statistical Analysis Methods

To determine if any new releases have occurred from the WMUs, evaluation of data must also be conducted using non-statistical methods. Non-statistical analyses are as follows.

1. Physical Evidence

Physical evidence can include, but is not limited to, unexplained stress in biological communities such as vegetation loss, soil discoloration, or groundwater mounding. Each semi-annual and annual report must comment on such physical elements.

2. Time-Series Plots

Non-statistical evidence of a release may include trends of increasing concentrations of one or more constituents over time, as depicted in time-series plots. Each semi-annual and annual report must include these time-series plots. Time-series plots are not required for parameters that have never been detected above their MDL (as specified by the applicable USEPA method).

IV. REPORTING REQUIREMENTS

The Applicant must comply with the following reporting requirements.

A. Release Response

If the statistical data, non-statistical data, or sampling results show that a new release from a WMU has occurred for a specific monitoring parameter or COC, then the Applicant must follow these requirements.

1. Surface Impoundments

a. The Applicant must notify the Lahontan Regional Board and Commission within 24-hours hours whenever a determination is made that there is a fluid volume in the LCRS sumps in excess of the Action Leakage Rates (13,750 gpd). This verbal notification must be followed by written notification via certified mail within 7 days of such determination. This written notification must be followed by a technical report via certified mail within 30 days of such determination. The technical report must describe the actions taken to abate the adverse condition and describe any proposed future actions to abate the adverse condition.
b. Upon detection of liquid in a LCRS (1) at a volume greater than one-half of the Action Leakage Rate (ALR) or (2) for three consecutive liquid detections, the Applicant must immediately collect a grab sample of the liquid and analyze the sample for all COCs and monitoring parameters listed in Enclosure 1, Table 1.The results of sampling must be provided within 30 days and submitted with the above described technical report.
c. The Applicant must notify the Lahontan Regional Board and Commission within 24 hours whenever a determination is made that moisture has been detected above background in the neutron probes. Written notification is required within 30 days of such determination. The written notification must include neutron probe retesting results and copies of laboratory analytical reports.

2. Land Treatment Unit

a. If sampling results indicate HTF compounds have migrated past the 5-foot vertical treatment zone, the Applicant must:

1. Collect samples for analysis of the mobility of the organic and inorganic analytes present in the matrix using the Toxicity Characteristic Leaching Procedure (TCLP), United States Environmental Protection

Agency (EPA) Method 1311.

2. Notify the Lahontan Regional Board and Commission within 24 hours. This notification must be followed by written notification via certified mail within 7 days of such determination. This written notification must be followed by a technical report via certified mail within 30 days of such determination. The technical report must describe the actions taken to abate the adverse condition and must describe any proposed future actions to abate the adverse condition.

3. Storm Water Conveyance System

   a. The Applicant must compare the results of sampling to the Annual Numeric Action Level (ANAL) and the Instantaneous Maximum Numeric Action Level (INAL) outlined in Attachment B, section I.B.4, to determine whether either type of action level has been exceeded for each applicable parameter. The Applicant is required to report all exceedances within 24-hours. Written notification is required within 30 days.

      1. ANAL Exceedance – The Applicant must determine the average concentration for each parameter using the results of all the sampling and analytical results for the entire facility for the reporting year (i.e., all discharge data). The Applicant must compare the average concentration for each parameter to the corresponding ANAL values located in Attachment B, section I.B.4.

      2. INAL Exceedance – The Applicant must compare all sampling and analytical results from each distinct sample to the corresponding instantaneous maximum NAL values located in Attachment B, section I.B.4. An INAL exceedance occurs when two (2) or more analytical results from samples taken for any single parameter within a reporting year exceed the INAL value or are outside of the INAL range for pH.

B. Scheduled Reports

The following reports, including all monitoring data collected during the corresponding reporting period, must be submitted electronically according to the schedule outlined below.

MONITORING REPORTING SCHEDULE		
Report Name	**Sampling and Reporting Period**	**Report Due Date[4]**
Monthly Biological Resources Report	1st – 30th	15th [5]
First Semi-Annual Monitoring Report	January 1 – June 30	July 30
Second Semi-Annual Monitoring Report	July 1 – December 31	January 30
Annual Monitoring Report[6]	January 1 – December 31	April 30
Five-Year Constituent of Concern Report[7]	January 1 – June 30 July 1 – December 31	July 30 January 30

1. Monthly Biological Resource Monitoring Report

   The Applicant must submit monthly reports for the first year of operation of the surface impoundments. Reporting may be reduced to annually thereafter if no bird or wildlife deaths are reported during the first year of operation.

   Each Biological Resource Monitoring Report must include all data collected during the monitoring period in compliance Condition of Certification **BIO-19** and Attachment C, section II.A.7.

2. Semi-Annual Report

   Each semi-annual report must include, but not be limited to, the following information.

   a. All data collected during the reporting period in accordance with MRP Section II.A through II.D.

   b. Tabulated results of sampling and laboratory analyses of all monitored media. The following must be included:

      1. Groundwater – Tabulated groundwater data for each groundwater monitoring point, including historical (last ten years at minimum) and current reporting period data. The data must be compared to the concentration limit for each monitoring parameter and an identification of each sample that exceeds its respective concentration limit by a measurably significant amount at any given monitoring point.

      2. Surface Impoundments – Tabulated results of sampling and laboratory analyses for the liquid LCRS waste and the surface impoundment sludge including historical (last ten years at minimum) and current reporting period data. The laboratory results of the sludge samples

4 Reports with the same due date may be combined.
5 The report is due on the 15th of the month following the monitoring period. Reporting may be reduced to annually thereafter if no wildlife deaths are reported during the most recent year.
6 The annual report may be submitted with the second semi-annual monitoring report.
7 The sampling and reporting period will alternate between the first and second semi-annual monitoring periods for each five-year sampling event.

must be compared to the respective TTLC and STLC values outlined in Title 22, CCR, Section 66261.24(a)(2). All exceedances must be identified.

3. Land Treatment Unit – Tabulated results of waste characterization from the soil contaminated with HTF and the unsaturated zone beneath the land treatment unit. A minimum of ten years of data are required and the laboratory results of the sludge samples must be compared to the respective TTLC and STLC values outlined in 22 CCR Section 66261.24(a)(2). All exceedances must be identified.
4. Storm water – Tabulated results of sampling and laboratory analyses for each storm water monitoring point, including historical (last ten years at minimum) and current reporting period data. The results must be compared to Annual Numeric Action Levels (ANAL) and Instantaneous Maximum Numeric Action Levels (INAL) outlined in Attachment B, section I.B.4. All exceedances must be identified.

c. Copies of laboratory analytical reports with the laboratory method detection limit for each parameter listed and the quality assurance and quality control data.

d. A map and/or aerial photograph showing the Facility's perimeter and ancillary facilities relevant to this MRP (e.g., hazardous waste storage areas, contaminated soil staging, etc.) as well as locations of all monitoring points, observation stations, and the surface trace of the point of compliance.

e. A site plan and/or aerial photograph with the following aquifer characteristics: the depth to groundwater (feet bgs) in each groundwater monitoring well; the static water level (feet above mean sea level) in each groundwater monitoring well; the slope of the groundwater gradient (feet/feet); the direction of the groundwater gradient beneath and around the Facility; the velocity of groundwater flow (feet/year); and the current groundwater isocontours for that monitoring period.

f. Site map of storm water conveyance systems including on-site and off-site discharge locations. The site map must include the direction of flow, legend, north arrow, scale and other data as appropriate to ensure the map is clear, legible and understandable.

g. Copies of all field monitoring, well sampling data sheets, and inspection records.

h. Documentation of instrument calibration and performance checks to verify proper operation of all field monitoring equipment

i. The results of the visual observations/inspections conducted, and a discussion of any responses conducted in response to those observations.

j. The quantity and type of HTF utilized at the Facility.

k. The volume of contaminated soil discharged to the land treatment units.

l. The amount and types of chemical additives added to the water treatment system that may be discharged to the surface impoundments.

m. Time-series plots of the analytical results from the groundwater and unsaturated zone monitoring at each monitoring point for each monitoring parameter and COC detected during the monitoring period as well as available historical data (minimum of last ten years of data). Time-series plots must include, as lines, the concentration limits as derived in accordance with the WQPS for each respective constituent, as well as the laboratory method detection limit (MDL) and the primary and/or secondary maximum contaminant level (MCL) for the analytical method used.

n. A letter transmitting the essential points of each report, including a discussion of any reported spills, exceedances of established waste discharge limitations and any violations found since the last report was submitted. The Applicant is required to describe the actions taken or planned for correcting unauthorized releases, exceedances and violations.

o. If the Applicant has previously submitted a detailed time schedule for correcting violations, a reference to the correspondence must be included.

p. If no violations have occurred since the last submittal, this must be stated in the letter of transmittal.

3. Annual Report

Each Annual Report must include, but is not limited to, the following:

a. Evidence that adequate financial assurance for closure, post-closure maintenance, and corrective action is still in effect for all WMUs. Evidence may include a copy of the renewed financial instrument or a copy of the receipt for payment of the financial instrument.

b. The Applicant must review the Preliminary Closure Post-Closure Maintenance Plan annually to determine if significant changes in the operation of the Facility warrant an update to the plan. A discussion related to the adequacy of the plan must be provided.

c. A list of all monitoring point/monitoring parameter pairs (pairs), by medium, which have exhibited a verified measurably significant increase, together with the respective date (for each) when that increase occurred. Any pairs that have shown an increase within that (prior) year must be indicated in the table, such as the use of bold underlining of the data. In addition, by medium, list any non-monitoring parameter COCs that, during testing that year (tested every five years), have exceeded their respective concentration limit by a measurably significant amount and, as a result, have become monitoring parameters, together with the date when the transition occurred.

d. Time-series plots of the analytical results from the groundwater and unsaturated zone monitoring at each monitoring point for each monitoring parameter and COC detected during the monitoring period as well as available historical data (minimum of last ten years of data). Time-series plots must include, as lines, the concentration limits as derived in accordance with the WQPS for each respective constituent, as well as the MDL and the MCL for the analytical method used.

e. An evaluation of the effectiveness of both the groundwater and unsaturated zone monitoring programs and any proposed modifications necessary to improve the monitoring programs.

f. A narrative description of potential storm water pollutant sources. The description must include the areas of the Facility with likely sources of pollutants in storm water, the approximate quantity, physical characteristics (e.g., liquid, powder, solid, etc.) and locations of each chemical handled and disposed of at the Facility.

g. Assessment of potential storm water pollutant sources. The assessment must include the degree to which the pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

h. A discussion of the effectiveness of the existing BMPs to reduce or prevent pollutants in storm water discharges.

i. Copies of all hazardous waste manifests for waste generated at the Facility that does not meet the discharge requirements and is transported offsite.

j. A brief chronological summary of dates of any operational problems and maintenance activities that may impact water quality at the site.

k. The compliance record and the corrective actions taken or planned, which may be needed to bring the Facility into full compliance with the discharge requirements.

l. A discussion regarding the SWPPP revisions necessary in response to the visual observations and sampling results.

m. A copy of the most recent approved SWPPP.

n. Copies of Facility personnel training records related to plant operation, groundwater sampling, soil sampling, and storm water sampling.

o. A copy of the Emergency Response Plan for the Facility implemented to address potential contamination incidents.

p. A copy of the SAP for groundwater and the WMUs.

V. GENERAL PROVISIONS FOR MONITORING AND REPORTING

A. Electronic Submittal of Information

The Electronic Reporting Regulations require electronic submission of any

report or data required by a regulatory agency. The electronic reporting requirements are outlined in Division 3 of 27 CCR and Division 3 of Title 23 CCR. The Applicant is required to submit the environmental data electronically to GeoTracker under Global Identification Number T10000005850. GeoTracker is the State Water Resources Control Board's internet-accessible database system to track and archive compliance data from authorized and unauthorized discharges of waste to land. The following environmental compliance data must be submitted electronically:

1. Monitoring Reports – Reports containing all information collected for the reporting period in compliance with this MRP. The reports must be uploaded in Portable Document Format (PDF) as a GEO_REPORT.

2. Technical Reports – A complete copy of all technical reports in a PDF as a GEO_REPORT including workplans, release response reports, etc.

3. Lab Data – Analytical data for all samples that are collected for the purpose of compliance and subsurface investigation or remediation. The data must be uploaded as an Electronic Deliverable Format (EDF) file.

4. Boring Logs and Well Screen Intervals – Boring logs must be prepared by an appropriate registered professional and need to be submitted in a PDF as a GEO_BORE.

5. Depth to Water Data – Depth to water field measurements data from groundwater wells as a GEO_WELL report. The data must be submitted after each sampling event.

6. Groundwater Well Horizontal Datum – The surveyed horizontal datum measurements for each groundwater well as a GEO_XY file. Each permanent sampling location's longitude (X) and latitude (Y) should be reported only once for a site unless the well is resurveyed.

7. Groundwater Well Vertical Datum – Elevation measurements to the top of groundwater well casings as a GEO_Z file.

8. Site Map – An electronic site plan that includes all monitoring points for groundwater, the WMUs, and the storm water sampling locations.

B. Contact Information

Monitoring reports must include the name, address, telephone number, and email of an individual who can answer questions about the report.

C. Sampling And Analysis

1. Groundwater samples must be collected to obtain samples that accurately represent the water quality of the aquifer, reduce disturbance of the well

and aquifer using approved techniques to minimize turbidity and volatilization of contaminants.

2. Soil samples must be collected to obtain undisturbed and representative samples to eliminate biased results.
3. Pursuant to Health and Safety Code Section 100825 (et seq.), laboratories performing analyses on environmental samples for the purpose of subsurface investigation or remediation for the State Board, a Regional Water Board, or a California local agency must be accredited through the California Environmental Laboratory Accreditation Program (ELAP).
4. The Applicant must establish chain-of-custody procedures to ensure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory.
5. Sample collection, storage, and analysis must be conducted in accordance with an approved SAP. The most recent version of the approved SAP must be kept at the Facility and be available for regulatory review of the contents.
6. The Applicant must calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements or must ensure that both activities will be conducted. The calibration of any waste flow measuring device must be recorded and maintained in the permanent logbook.
7. The Applicant must maintain all sampling and analytical results including strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records must be retained for a minimum of three years. This period of retention must be extended throughout the course of any unresolved litigation regarding this discharge, or when requested by the Commission or the Lahontan Regional Board.

D. QA/QC Program

A robust QA/QC program is essential to ensure consistent, reliable, and valid monitoring data. This includes:

- Implementing a standard operating procedure for all monitoring activities.
- Conducting regular calibration and maintenance of monitoring equipment.
- Performing internal and external audits to verify compliance with QA/QC protocols.

E. Training and Certification

Personnel involved in sample collection and inspections must be adequately trained and certified. This includes:

- Providing training programs on sampling methods, data analysis, and regulatory requirements.

- Ensuring that Staff hold relevant certifications and licenses.

F. Operational Requirements

1. An operation and maintenance log must be maintained at the Facility. All monitoring and reporting data must be recorded in a permanent logbook.
2. The Applicant must provide a brief summary of any operational problems and maintenance activities to the California Energy Commission with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities must be included in this summary.

G. Corrective Action Statements

For every item where the requirements are not met, the Applicant must submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and must submit a timetable for correction.

H. Signatory Requirements

All technical reports must be signed according to the requirements below:

1. In the case of a corporation, by a principal executive officer at least of the level of vice-president or their duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates; or
2. In the case of a partnership, by a general partner; or
3. In the case of a sole proprietorship, by the proprietor; or
4. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
5. Reports that contain geologic interpretations must be signed and stamped by a qualified Professional Geologist (PG) with a current and active license in the State of California.
6. Reports that contain engineering design plans must be signed and stamped by a qualified Professional Engineer (PE) with a current and active license in the State of California.

Enclosures:

1) Enclosure 1 – Monitoring and Reporting Program
2) Enclosure 2 – Facility Site Maps

ENCLOSURE 1: MONITORING AND REPORTING PROGRAM

Table 1
Surface Impoundment Waste and Leachate Collection and Removal System Monitoring Program

TABLE 1 SURFACE IMPOUNDMENT WASTE AND LEACHATE COLLECTION AND REMOVAL SYSTEM MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Field Parameters				
General Chemistry	Dissolved Oxygen	Field	Semi-Annual	Semi-Annual
	Electrical Conductivity	Field	Semi-Annual	Semi-Annual
	Oxidation-Reduction Potential	Field	Semi-Annual	Semi-Annual
	pH	Field	Semi-Annual	Semi-Annual
	Temperature	Field	Semi-Annual	Semi-Annual
	Turbidity	Field	Semi-Annual	Semi-Annual
Monitoring Parameters				
Metals (Total)	Aluminum	EPA 6020/200.7	Semi-Annual	Semi-Annual
	Antimony	EPA 6020	Semi-Annual	Semi-Annual
	Arsenic	EPA 6020	Semi-Annual	Semi-Annual
	Barium	EPA 6020	Semi-Annual	Semi-Annual
	Beryllium	EPA 6020	Semi-Annual	Semi-Annual
	Boron	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Cadmium	EPA 6020	Semi-Annual	Semi-Annual
	Chromium	EPA 6020	Semi-Annual	Semi-Annual
	Cobalt	EPA 6020	Semi-Annual	Semi-Annual
	Copper	EPA 6020	Semi-Annual	Semi-Annual
	Iron	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Lead	EPA 6020	Semi-Annual	Semi-Annual
	Manganese	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Mercury	EPA 7470	Semi-Annual	Semi-Annual
	Molybdenum	EPA 6020	Semi-Annual	Semi-Annual
	Nickel	EPA 6020	Semi-Annual	Semi-Annual
	Selenium	EPA 6020	Semi-Annual	Semi-Annual
	Silver	EPA 6020	Semi-Annual	Semi-Annual
	Strontium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Thallium	EPA 6020	Semi-Annual	Semi-Annual
	Vanadium	EPA 6020	Semi-Annual	Semi-Annual
	Zinc	EPA 6020	Semi-Annual	Semi-Annual

TABLE 1 (Continued) SURFACE IMPOUNDMENT WASTE AND LEACHATE COLLECTION AND REMOVAL SYSTEM MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Monitoring Parameters				
Minerals	Alkalinity	SM 2320B	Semi-Annual	Semi-Annual
	Bromide	EPA 300.0	Semi-Annual	Semi-Annual
	Calcium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Chloride	EPA 300.0	Semi-Annual	Semi-Annual
	Fluoride	EPA 300.0	Semi-Annual	Semi-Annual
	Magnesium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Potassium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Sodium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Sulfate	EPA 300.0	Semi-Annual	Semi-Annual
Nutrients	Ammonia (as N)	EPA 350.1	Semi-Annual	Semi-Annual
	Nitrate as N	EPA 300.0	Semi-Annual	Semi-Annual
	Nitrate as NO_3	EPA 300.0	Semi-Annual	Semi-Annual
	Phosphorus as PO_4	SM 4500	Semi-Annual	Semi-Annual
Inorganics	Total dissolved solids	EPA 300.0	Semi-Annual	Semi-Annual
	Total organic carbon	SM 5310 B-D	Semi-Annual	Semi-Annual
Constituents of Concern				
Heat Transfer	Biphenyl	EPA 8270	Annual	Annual
	Diphenyl oxide	EPA 8270	Annual	Annual
Organics	Semi-volatile organic compounds	EPA 8270C	5 year	5 year
	Volatile organic compounds	EPA 8260B	5 year	5 year

Table 2
Surface Impoundment Sludge Monitoring Program

TABLE 2 SURFACE IMPOUNDMENT SLUDGE MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Monitoring Parameters				
Metals	Antimony	TTLC/STLC	Annual	Annual
	Arsenic	TTLC/STLC	Annual	Annual
	Barium	TTLC/STLC	Annual	Annual
	Beryllium	TTLC/STLC	Annual	Annual
	Cadmium	TTLC/STLC	Annual	Annual
	Chromium (VI)	TTLC/STLC	Annual	Annual
	Chromium (III)	TTLC/STLC	Annual	Annual
	Cobalt	TTLC/STLC	Annual	Annual
	Copper	TTLC/STLC	Annual	Annual
	Lead	TTLC/STLC	Annual	Annual
	Mercury	TTLC/STLC	Annual	Annual
	Molybdenum	TTLC/STLC	Annual	Annual
	Nickel	TTLC/STLC	Annual	Annual
	Selenium	TTLC/STLC	Annual	Annual
	Silver	TTLC/STLC	Annual	Annual
	Thallium	TTLC/STLC	Annual	Annual
	Vanadium	TTLC/STLC	Annual	Annual
	Zinc	TTLC/STLC	Annual	Annual
Constituents of Concern				
Heat Transfer	Biphenyl	EPA 8270	Annual	Annual
	Diphenyl oxide	EPA 8270	Annual	Annual
Organics	Semi-volatile organic compounds	EPA 8270C	5 year	5 year
	Volatile organic compounds	EPA 8260B	5 year	5 year

Table 3 Land Farm Waste Characterization Monitoring Program

TABLE 3 LANDFARM WASTE CHARACTERIZATION MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Monitoring Parameters				
Metals	Antimony	TTLC/STLC	Prior to landfarming	Annual
	Arsenic	TTLC/STLC	Prior to landfarming	Annual
	Barium	TTLC/STLC	Prior to landfarming	Annual
	Beryllium	TTLC/STLC	Prior to landfarming	Annual
	Cadmium	TTLC/STLC	Prior to landfarming	Annual
	Chromium	TTLC/STLC	Prior to landfarming	Annual
	Cobalt	TTLC/STLC	Prior to landfarming	Annual
	Copper	TTLC/STLC	Prior to landfarming	Annual
	Lead	TTLC/STLC	Prior to landfarming	Annual
	Mercury	TTLC/STLC	Prior to landfarming	Annual
	Molybdenum	TTLC/STLC	Prior to landfarming	Annual
	Nickel	TTLC/STLC	Prior to landfarming	Annual
	Selenium	TTLC/STLC	Prior to landfarming	Annual
	Silver	TTLC/STLC	Prior to landfarming	Annual
	Thallium	TTLC/STLC	Prior to landfarming	Annual
	Vanadium	TTLC/STLC	Prior to landfarming	Annual
	Zinc	TTLC/STLC	Prior to landfarming	Annual
Constituents of Concern				
Heat Transfer	Biphenyl	EPA 8270E	Prior to landfarming	Annual
	Diphenyl ether	EPA 8270E	Prior to landfarming	Annual
Organics	Semi-volatile organic compounds	EPA 8270C	Prior to landfarming	Annual
	Volatile organic compounds	EPA 8260B	Prior to landfarming	Annual

Table 4
Land Farm Unsaturated Zone Monitoring Program

TABLE 4 LANDFARM UNSATURATED ZONE MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Monitoring Parameters				
Metals	Antimony	TTLC/STLC	Annual	Annual
	Arsenic	TTLC/STLC	Annual	Annual
	Barium	TTLC/STLC	Annual	Annual
	Beryllium	TTLC/STLC	Annual	Annual
	Cadmium	TTLC/STLC	Annual	Annual
	Chromium	TTLC/STLC	Annual	Annual
	Cobalt	TTLC/STLC	Annual	Annual
	Copper	TTLC/STLC	Annual	Annual
	Lead	TTLC/STLC	Annual	Annual
	Mercury	TTLC/STLC	Annual	Annual
	Molybdenum	TTLC/STLC	Annual	Annual
	Nickel	TTLC/STLC	Annual	Annual
	Selenium	TTLC/STLC	Annual	Annual
	Silver	TTLC/STLC	Annual	Annual
	Thallium	TTLC/STLC	Annual	Annual
	Vanadium	TTLC/STLC	Annual	Annual
	Zinc	TTLC/STLC	Annual	Annual
Nutrients	Total Nitrogen	353.2/SM4500-NO3-E,F,I/ 300.1/353.1-3/SM4111	Annual	Annual
	Phosphorus as PO_4	SM4500-PE	Annual	Annual
Constituents of Concern				
Heat Transfer	Biphenyl	EPA 8270	Annual	Annual
	Diphenyl ether	EPA 8270	Annual	Annual
Organics	Semi-volatile organic compounds	EPA 8270C	Annual	Annual
	Volatile organic compounds	EPA 8260B	Annual	Annual

TABLE 5 GROUNDWATER MONITORING PROGRAM				
Constituent	**Analyte**	**Method**	**Sampling Frequency**	**Reporting Frequency**
Field Parameters				
General Chemistry	Dissolved Oxygen	Field	Semi-Annual	Semi-Annual
	Electrical Conductivity	Field	Semi-Annual	Semi-Annual
	Oxidation-Reduction Potential	Field	Semi-Annual	Semi-Annual
	pH	Field	Semi-Annual	Semi-Annual
	Temperature	Field	Semi-Annual	Semi-Annual
	Turbidity	Field	Semi-Annual	Semi-Annual
Monitoring Parameters				
Metals (Total)	Aluminum	EPA 6020/200.7	Semi-Annual	Semi-Annual
	Antimony	EPA 6020	Semi-Annual	Semi-Annual
	Arsenic	EPA 6020	Semi-Annual	Semi-Annual
	Barium	EPA 6020	Semi-Annual	Semi-Annual
	Beryllium	EPA 6020	Semi-Annual	Semi-Annual
	Boron	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Cadmium	EPA 6020	Semi-Annual	Semi-Annual
	Chromium	EPA 6020	Semi-Annual	Semi-Annual
	Cobalt	EPA 6020	Semi-Annual	Semi-Annual
	Copper	EPA 6020	Semi-Annual	Semi-Annual
	Iron	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Lead	EPA 6020	Semi-Annual	Semi-Annual
	Manganese	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Mercury	EPA 7470	Semi-Annual	Semi-Annual
	Molybdenum	EPA 6020	Semi-Annual	Semi-Annual
	Nickel	EPA 6020	Semi-Annual	Semi-Annual
	Selenium	EPA 6020	Semi-Annual	Semi-Annual
	Silver	EPA 6020	Semi-Annual	Semi-Annual
	Strontium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Thallium	EPA 6020	Semi-Annual	Semi-Annual
	Vanadium	EPA 6020	Semi-Annual	Semi-Annual
	Zinc	EPA 6020	Semi-Annual	Semi-Annual
Nutrients	Ammonia (as N)	EPA 350.1	Semi-Annual	Semi-Annual
	Nitrate as N	EPA 300.0	Semi-Annual	Semi-Annual
	Nitrate as NO_3	EPA 300.0	Semi-Annual	Semi-Annual
	Total Phosphorus as P	SM 4500	Semi-Annual	Semi-Annual
Minerals	Alkalinity	SM 2320B	Semi-Annual	Semi-Annual
	Bromide	EPA 300.0	Semi-Annual	Semi-Annual
	Calcium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Chloride	EPA 300.0	Semi-Annual	Semi-Annual
	Fluoride	EPA 300.0	Semi-Annual	Semi-Annual
	Magnesium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Potassium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Sodium	EPA 6010B/200.7	Semi-Annual	Semi-Annual
	Sulfate	EPA 300.0	Semi-Annual	Semi-Annual
Inorganics	Total dissolved solids	EPA 300.0	Semi-Annual	Semi-Annual
	Total organic carbon	SM 5310 B-D	Semi-Annual	Semi-Annual
Constituents of Concern				
Heat Transfer	Biphenyl	EPA 8270	Semi-Annual	Semi-Annual
	Diphenyl oxide	EPA 8270	Semi-Annual	Semi-Annual
Organics	Oil and grease	EPA 1664A/SM5520B-E	5 year	5 year
	Petroleum hydrocarbons	EPA 8015M	5 year	5 year
	Semi-volatile organic compounds	EPA 8270C	5 year	5 year
	Volatile organic compounds	EPA 8260B	5 year	5 year
Fecal Indicators	Fecal coliform	SM 9221C,E/9223 B	5 year	5 year
	Total coliform	SM 9221C,E/9223 B	5 year	5 year
Inorganics	Methylene blue active substances	SM 5540C	5 year	5 year

ENCLOSURE 2: FACILITY MAPS

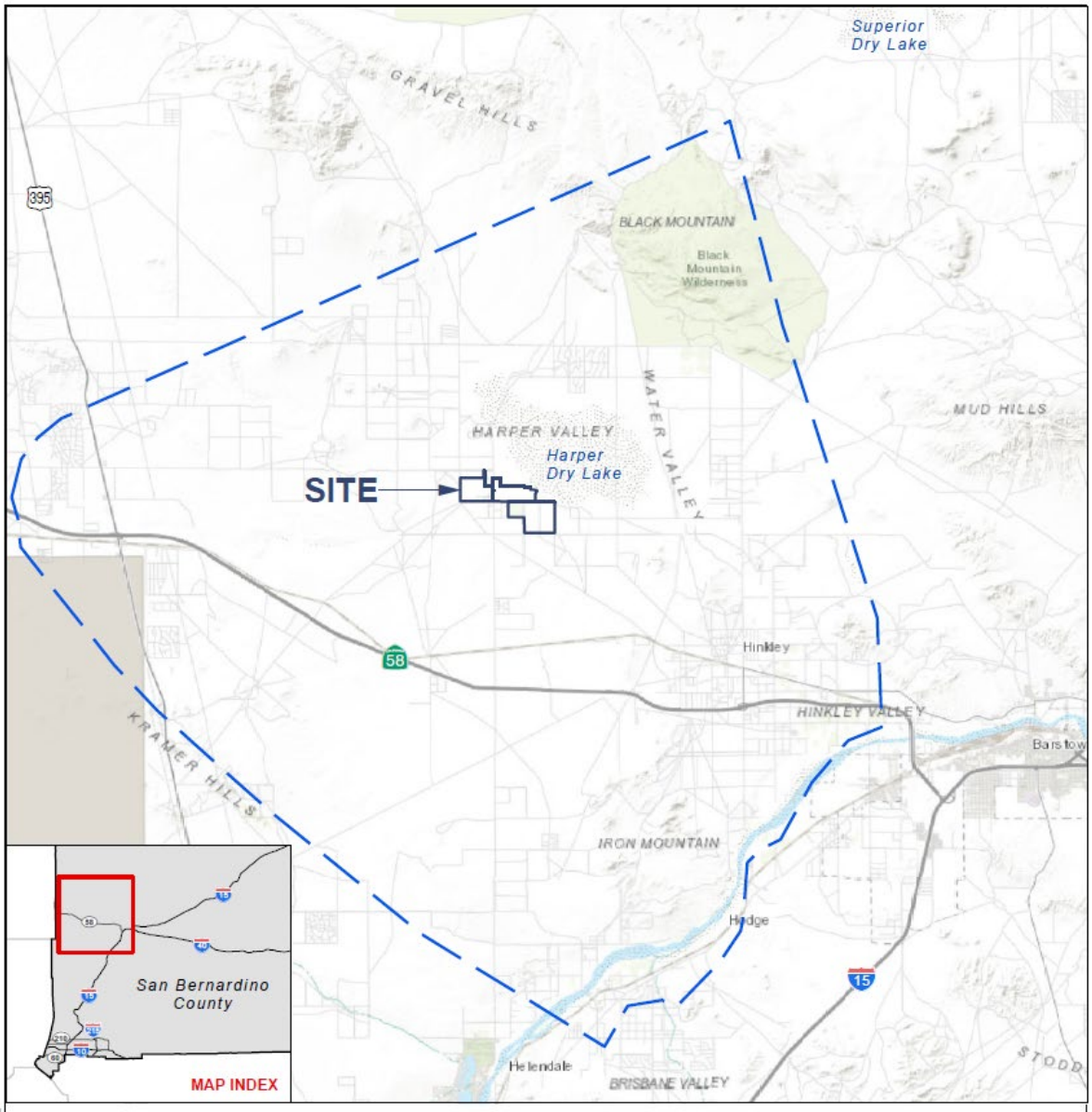


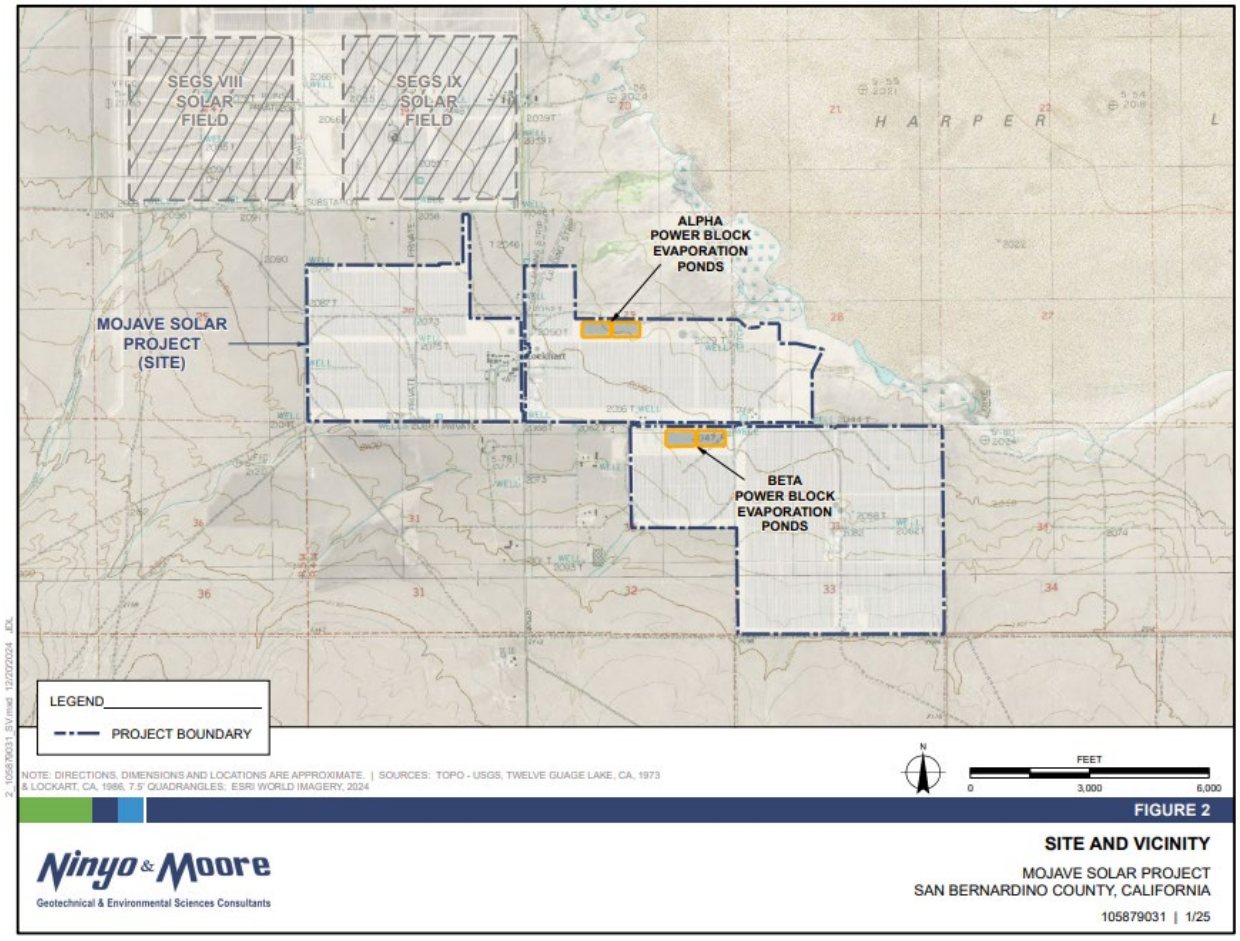
FIGURE 1

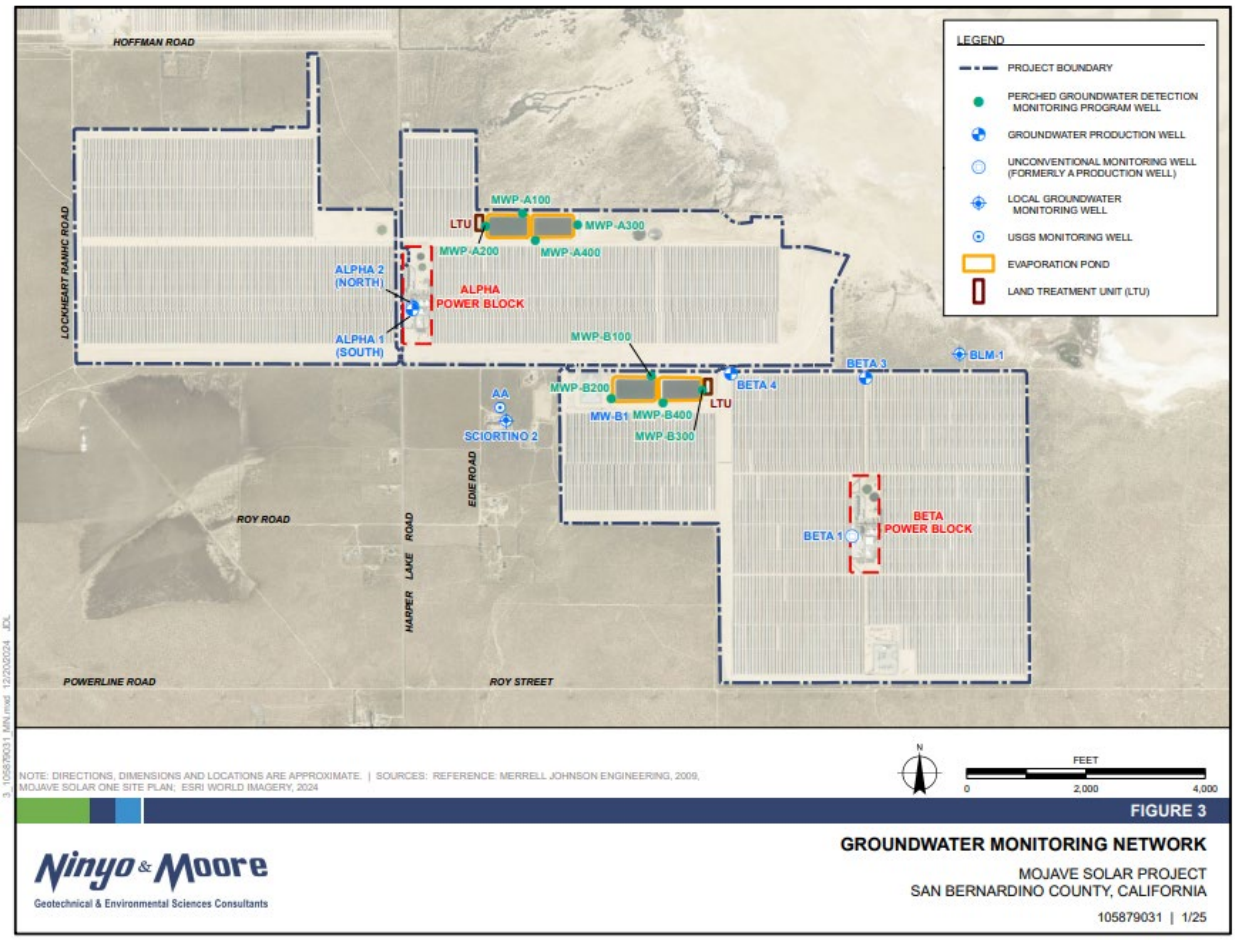
SITE LOCATION

MOJAVE SOLAR PROJECT
SAN BERNARDINO COUNTY, CALIFORNIA

105879031 | 1/25

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants


SEGS VIII SOLAR FIELD
SEGS IX SOLAR FIELD
H A R P E R
ALPHA POWER BLOCK EVAPORATION PONDS
MOJAVE SOLAR PROJECT (SITE)
BETA POWER BLOCK EVAPORATION PONDS
LEGEND
PROJECT BOUNDARY
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCES: TOPO - USGS, TWELVE GUAGE LAKE, CA, 1973 & LOCKART, CA, 1986, 7.5' QUADRANGLES; ESRI WORLD IMAGERY, 2024
N
FEET
0
3,000
6,000
FIGURE 2
Ninyo & Moore
Geotechnical & Environmental Sciences Consultants
SITE AND VICINITY
MOJAVE SOLAR PROJECT
SAN BERNARDINO COUNTY, CALIFORNIA
105879031 | 1/25



NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCES: REFERENCE: MERRELL JOHNSON ENGINEERING, 2009, MOJAVE SOLAR ONE SITE PLAN; ESRI WORLD IMAGERY, 2024

3_105879031_MN.mxd 12/20/2024 JDL

FIGURE 3

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

GROUNDWATER MONITORING NETWORK

MOJAVE SOLAR PROJECT
SAN BERNARDINO COUNTY, CALIFORNIA

105879031 | 1/25

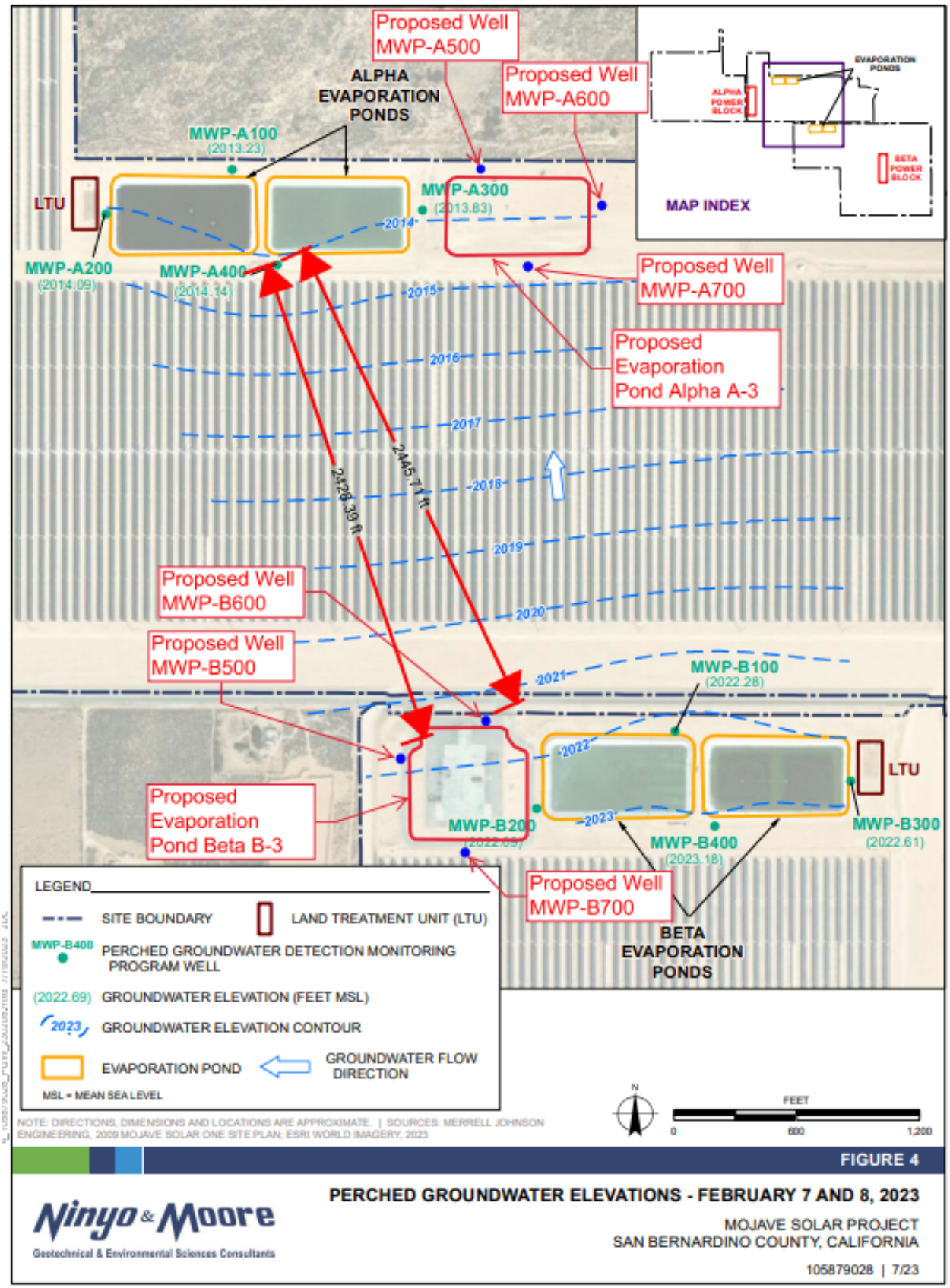


FIGURE 4

PERCHED GROUNDWATER ELEVATIONS - FEBRUARY 7 AND 8, 2023

MOJAVE SOLAR PROJECT
SAN BERNARDINO COUNTY, CALIFORNIA

105879028 | 7/23

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Geotechnical & Environmental Sciences Consultants