REPORT

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# **REPORT OF WASTE DISCHARGE -**LINED WASTEWATER EVAPORATION POND - SAN JOAQUIN SOLAR 1 & 2 HYBRID POWER PLANT PROJECT

Prepared for

San Joaquin Solar 1 LLC and San Joaquin Solar 2 LLC

URS Project No. 27658033.00500

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**Project Civil Engineer** 

Matt Moore, PE

**Project Engineer** 

November 12, 2009



### URS

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November 12, 2009

Mr. Shelton R. Gray Senior Engineering Geologist Regional Water Quality Control Board 1685 "E" Street Fresno, California 93707

Subject:

Report of Waste Discharge - Lined Wastewater Evaporation Pond

San Joaquin Solar 1 & 2 Hybrid Power Plant Project

Fresno County, California URS Job No. 27658033

Dear Mr. Gray:

URS Corporation Americas (URS) prepared the enclosed Report of Waste Discharge on behalf of San Joaquin Solar 1 LLC and San Joaquin Solar 2 LLC, collectively referred to as San Joaquin Solar 1&2 (SJS 1&2, Client). Appended to the report is the completed Form 200 signed by an authorized SJS 1&2 representative.

We look forward to receiving comments from you at your earliest convenience and working with you in obtaining Waste Discharge Requirements from your Board for the project.

Please do not hesitate to contact us if you have any questions or comments, or need any additional information.

Matt Moore, PE

**Project Engineer** 

Sincerely,

**URS CORPORATION** 

Stuat St. Clair

Stuart St. Clair, PE Project Civil Engineer

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#### SECTION 1 PROJECT OVERVIEW

#### 1.1 INTRODUCTION

URS Corporation Americas (URS) prepared this Report of Waste Discharge (ROWD) for San Joaquin Solar 1 LLC and San Joaquin Solar 2 LLC, collectively referred to as San Joaquin Solar 1&2 (SJS 1&2, Client). SJS 1&2 plans to construct and operate two hybrid solar thermal electricity generating plants (Project) in an unincorporated area of southwestern Fresno County, California, approximately 5 miles east of the city of Coalinga (Figure 1).

#### 1.2 PROJECT DESCRIPTION

Each of the plants will include a solar field and a biomass facility and will produce up to a nominal 53.4 megawatts (MW) net of renewable energy. SJS 1&2 is currently in the process of obtaining certification for the Project from the California Energy Commission (CEC). Documents pertinent to the certification process are available on the Internet at http://www.energy.ca.gov/sitingcases/sjsolar/index.html. The Project is scheduled for construction beginning in late 2010 and operation in 2012.

The Project will use secondary treated effluent from the City of Coalinga's wastewater treatment facility (WWTF) as the main water supply, augmented by groundwater from an on-site well, as necessary. Tertiary treatment for the WWTF effluent will be provided at the Project site and will include multimedia filtration followed by carbon filtration. The tertiary-treated WWTF effluent and the groundwater will be treated by a soda-lime softener, a sand filter, a reverse osmosis (RO) system, and a demineralizer. Internal recycling of various water streams will be used to the extent possible. However, due to the mineral concentrations in the source water, the water can only be cycled through the system a limited number of times, and a wastewater stream is needed to remove minerals from the system. SJS 1&2 propose to construct an on-site lined wastewater evaporation pond to receive the wastewater stream. The purpose of this ROWD is to provide the information needed by the California Regional Water Quality Control Board, Central Valley Region (RWQCB) to prepare Waste Discharge Requirements (WDRs) for the pond. A completed Form 200 signed by an authorized SJS 1&2 representative is provided in Appendix A.

This ROWD pertains only to the Project's wastewater that will be discharged to the lined evaporation pond. Storm water management during construction and operation of the Project is not addressed by this ROWD, nor is management of other waste streams that will be generated by the Project.

#### 1.3 REPORT ORGANIZATION

The remainder of this ROWD is organized as follows:

- Background information is provided in Section 2.
- A description of the planned facility is provided in Section 3.
- A description of the proposed waste discharge is provided in Section 4.
- The RO wastewater pond design and construction are provided in Section 5.

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**SECTIONONE** 

- Operation of the RO wastewater pond is discussed in Section 6.
- The groundwater monitoring plan is provided in Section 7.
- Figures and appendices appear after Section 7.

#### 1.4 LIMITATIONS

URS prepared this document for the sole use of Client. URS relied on information provided by Client, Client's consultants, and published sources in preparing this document. URS prepared this document in a manner consistent with the level of care and skill ordinarily exercised by professional consultants in the geographic area of the project site. URS provides no other warranties, either express or implied, concerning the contents of this document.

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#### SECTION 2 GENERAL SITE INFORMATION

Background information regarding the facility site is provided below.

#### 2.1 SITE LOCATION AND DESCRIPTION

The facility site is in the unincorporated area of southwestern Fresno County, about 5 miles east of the city of Coalinga (Figure 1). The Project will be situated on approximately 639 acres of land which is divided into three parcels having Assessor's Parcel Numbers of 085-030-55S, 085-030-57S, and 085-030-58S. The site is on the south side of West Jayne Avenue, about 3 miles west of Interstate Highway 5. The site occupies the whole of Section 3, Township 21 South, Range 16 East, Mount Diablo Base and Meridian.

The three parcels are owned by Mouren Farming. SJS 1&2 has a written agreement with Mouren Farming with an option to lease the parcels, and intends to exercise that option prior to construction of the Project.

The site currently consists primarily of previously disturbed cropland. The Coalinga State Hospital and the Pleasant Valley State Prison are location on the section of land immediately west of the site. Other land uses in the site vicinity are principally cropland and rangeland (Figure 2).

#### 2.2 SITE TOPOGRAPHY AND GEOLOGY

The site topography is relatively flat, sloping gently downward to the southwest. The ground surface elevation ranges approximately from 640 feet above mean sea level (amsl) at the northeast corner of the site to 570 feet amsl at the southwest corner of the site (Figure 1).

The site is in the Pleasant Valley alluvial basin, in the southwestern portion of the San Joaquin Valley, and on the southwestern flank of the Guijarral Hills. The site lies primarily on alluvial fan deposits at the transition between the California Coast Ranges to the west and the San Joaquin Valley to the east. The site is mapped as underlain by Quaternary-age alluvium and Plio-Pleistocene-age sedimentary rocks that are described as alluvial fan sediments.

#### 2.3 SITE HYDROGEOLOGY AND GROUNDWATER QUALITY

The facility site is located in the Pleasant Valley Subbasin of the San Joaquin Valley Groundwater Basin. Geologic units comprising the Pleasant Valley Subbasin include Holocene alluvium, the Plio-Pleistocene Tulare Formation, and possibly the upper part of the San Joaquin Formation (DWR Bulletin 118). The Corcoran-Clay aquitard does not appear to extend into the subbasin (USGS Water Supply Paper 1360-G). The fresh-water-bearing deposits appear to be generally a single zone extending as much as 3,000 feet or more below ground surface and consisting of highly lenticular poorly sorted clay, silt, and sand intercalated with occasional strata of well-sorted sand. The groundwater in this zone appears to be semi-confined to unconfined.

Groundwater elevation data available on the California Department of Water Resources (DWR) Internet website indicate that groundwater levels within Pleasant Valley have declined for several decades. A well

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in the section immediately west of the facility had a depth to groundwater of approximately 150 feet below ground surface (bgs) in the 1960s, and by the 1990s the depth to groundwater had increased to approximately 275 feet bgs. The water level in the on-site supply well was measured in February 2009 at approximately 320 feet bgs.

Historical groundwater elevation contour maps for the Pleasant Valley Subbasin, prepared by DWR, indicate that, within the Subbasin as a whole, the typical groundwater flow direction is generally easterly. For the facility site itself, however, the contour maps do not provide a clear indication of the typical groundwater flow direction – the best estimate appears to be an easterly to southeasterly flow direction. The groundwater flow direction at the site may be substantially influenced by localized factors such as recharge derived from the nearby Guijarral Hills or extraction from nearby irrigation wells, which are not well represented on the DWR contour maps.

Limited information is available regarding the quality of first-encountered groundwater near the project site. According to DWR Bulletin 118, the total dissolved solids (TDS) concentration of groundwater within the Pleasant Valley Subbasin is estimated to range from 1,000 to 3,000 milligrams per liter (mg/L). A monitoring plan for first-encountered groundwater near the lined wastewater evaporation pond is provided in Section 7.0.

Groundwater beneficial uses established for the Pleasant Valley Subbasin are municipal and domestic supply, agricultural supply, and industrial service supply (RWQCB Water Quality Control Plan for the Tulare Lake Basin).

#### 2.4 SITE HYDROLOGY

The climate in the site vicinity is semi-arid, with long, hot, dry summers and mild, intermittently wet winters. The average annual precipitation at the Coalinga weather station (No. 041864), located approximately 8 miles west of the site, is 7.3 inches, based on 48 years of data (source: www.worldclimate.com). The 1000-year, 24-hour precipitation event at the site is estimated to be approximately 3.5 inches. The Coalinga monthly average precipitation is provided below:

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 0.2 1.4 1.4 1.2 0.6 0.0 0.0 0.0 0.2 0.3 8.0 1.2

**Table 2.4-1 Coalinga Average Precipitation (Inches)** 

According to the Western Regional Climate Center, administered by the National Oceanic and Atmospheric Administration, the average annual pan evaporation at a station identified as "Avenal 9 SSE", presumably located approximately 10 miles southeast of the site, is 112 inches, based on 7 years of data. The average annual pan evaporation at the Los Banos Detention Reservoir, located about 60 miles northwest of the site in a similar climatic setting, is 108 inches, based on 38 years of data. The monthly average pan evaporation at Avenal 9 SSE is provided below:

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Table 2.4-2 Avenal 9 SSE Average Pan Evaporation (Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.80	2.90	6.20	9.39	12.96	16.73	18.67	16.37	12.61	8.05	3.89	2.44

Several small, ephemeral streams enter the Pleasant Valley basin from the surrounding mountains. These streams include Los Gatos, Warthan, Jacalitos, Avenal, and Zapato Chino Creeks. The Project's surface water drainage is tributary to Zapato Chino Creek, which passes approximately ¼ mile southeast of the site (Figure 1).

According to Flood Insurance Rate Maps published by the Federal Emergency Management Agency, the site is entirely within Flood Zone X, defined as areas determined to be outside the 500-year floodplain.

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#### **SECTION 3 PLANNED FACILITY DESCRIPTION**

The planned facility consists of two thermal electricity generating plants, each with a solar field and a biomass facility to provide heat during periods of limited solar radiation (including at night). Each plant will have a steam turbine generator. Heat to produce steam will come from: (a) a hot circulating oil that passes over the mirrors of the solar field, and/or (b) combustion of biomass. An aerial rendering of the Project is provided as Figure 3, and a site plan is provided as Figure 4. The solar field for one plant will occupy the northern portion of the site, and the solar field for the other plant will occupy the southern portion. In between the two solar fields will be the biomass blocks, steam-generation blocks, power blocks, water treatment plants, and shared facilities including control buildings and the lined wastewater evaporation pond. A water balance diagram for the Project, illustrating the various water streams and processes, is provided as Figure 5.

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#### SECTION 4 PROPOSED WASTE DISCHARGE

The proposed waste discharge to the planned on-site lined wastewater evaporation pond consists of saline wastewater from the Project's water treatment system. The location, volume, and character of the wastewater discharge are discussed below.

#### 4.1 LOCATION

The approximate latitude and longitude of the planned lined wastewater evaporation pond are provided on the Form 200 in Appendix A. The location of the pond is shown on Figures 3 and 4.

#### 4.2 VOLUME

As shown on Figure 5, the average wastewater discharge rate to the lined evaporation pond is estimated to be approximately 15 gallons per minute (gpm) on a continuous basis. Therefore, the Project is anticipated to discharge approximately 24.2 acre-feet per year (afy) of wastewater to the pond. This discharge rate is a rough estimate. To provide a reasonable margin of operational flexibility, SJS 1&2 proposes that the WDRs allow for discharge of up to 27.4 afy of wastewater – this volume is based on a continuous discharge of up to 17 gpm.

#### 4.3 CHARACTERISTICS

At present, limited information is available regarding the anticipated chemical composition of the wastewater to be discharged to the lined evaporation pond. The best-available estimate of the wastewater quality is provided below:

**Table 4.3-1 Estimated Wastewater Quality** 

Parameter	Concentration (mg/L)
Calcium	8
Bicarbonate/Carbonate	23
Chloride	143
Magnesium	5
Nitrate	10
Phosphate	5
Potassium	3
Silica (SiO2)	6
Sodium	668
Sulfate	1,215
Total Dissolved Solids	2,086
Suspended Solids	< 10

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For the purposes of this ROWD, it is assumed that the wastewater quality will be worse than the quality of the first-encountered groundwater at the site, and thus that the wastewater will be classified as a "designated waste" and that the lined evaporation pond will need to comply with the requirements for a Class II surface impoundment set forth in California Code of Regulations (CCR) Title 27.

**URS** 4-2

#### SECTION 5 EVAPORATION POND DESIGN AND CONSTRUCTION

The on-site lined wastewater evaporation pond will meet the requirements of a Class II surface impoundment set forth in CCR Title 27. SJS 1&2 proposes to install an engineered alternative liner system, rather than the prescriptive liner requirements of CCR Title 27. The proposed engineered alternative liner system consists of the following components from the top down:

- a. A soil layer approximately 1 foot thick to protect the primary liner;
- b. A primary 60-mil-thick high density polyethylene (HDPE) geomembrane;
- c. A geonet drainage layer, operating as a leachate collection and removal system (LCRS);
- d. A secondary 60-mil-thick HDPE geomembrane in lieu of the prescriptive clay liner;
- e. A 4-inch-thick gravel layer as a capillary break; and
- f. Compacted subgrade, free of rocks, sticks, or other materials that could damage the geomembrane.

The above liner system will be installed on the side slopes and bottom of the pond. The inboard side slope will be at a slope of 3 or 4 feet horizontally for every vertical foot. The outboard side slope will be at a slope of 2 feet horizontally for every vertical foot. The berm width at the crest will be approximately 20 feet.

The LCRS sump(s) will include a fail-safe mechanism designed to prevent the sump(s) from overflowing with leachate. The LCRS sump(s) will include a pipe from the ground surface to allow monitoring and removal of leachate collected in the sump(s) – any leachate removed will be discharged back to the pond. For unsaturated-zone monitoring purposes, a 40-mil-thick HDPE-lined pan lysimeter will be constructed under the LCRS sump(s). The pan lysimeter(s) will include a pipe from the ground surface to allow monitoring and sampling of leachate collected in the lysimeter(s).

The horizontal interior dimensions of the pond at the top of the berm will be approximately 548 feet by 748 feet. The pond depth will be approximately six feet. The horizontal interior pond dimensions at the bottom of the berm will be approximately 500 feet by 700 feet. A water-balance spreadsheet was prepared for the pond using the monthly precipitation and pan evaporation data discussed in Section 2.4. The monthly pan evaporation rates were reduced first by a pan-coefficient of 0.7 and second by another coefficient of 0.70 to account for the reduced evaporation rate as the salinity in the pond increases over time. The spreadsheet printout is provided in Appendix B. The water-balance calculations indicate that the pond is large enough to handle a continuous 17-gpm inflow of wastewater. The electronic spreadsheet documenting these calculations can be provided to RWQCB staff for review if necessary.

The construction quality assurance program will include compaction testing of the subgrade and electrical leak location surveys to be conducted on both the primary and secondary geomembranes.

Unsuitable subgrade soil will be re-compacted until it meets the specification of the geotechnical engineer. Any leaks detected by the electrical surveys will be repaired in accordance with the manufacturer's instructions, and re-tested with electrical leak-location methods, prior to installing the immediately overlying layer of the liner system.

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#### SECTION 6 EVAPORATION POND OPERATION AND MAINTENANCE

Wastewater from the Project will be discharged to the lined evaporation pond on a continuous basis. The water level in the pond will be maintained at least two feet below the top of the pond at all times. Wastewater discharge to the pond will cease if the water level reaches an elevation of two feet below the elevation of the top of the pond. The pond will have a permanent vertical freeboard-measurement rod installed from the bottom of the pond and extending vertically to an elevation greater than the top of the surrounding berm. To allow visual determination of freeboard in the pond, and of the sediment/sludge depth when the pond is sufficiently dry, the freeboard-measurement rods will include permanent labeled markings at intervals of 0.1 vertical foot beginning at the elevation of the lowest point at the top of the surrounding berm and continuing to the design bottom elevation of the pond. The rods will also contain a prominent marking at the two-foot freeboard level (i.e., at the design capacity of the pond).

Sediment/sludge will be removed from the pond on an as-needed basis to maintain the necessary capacity of the pond. Removed sediment/sludge will be disposed of or re-used in accordance with all applicable legal requirements.

If any leaks in the primary or secondary geomembrane become apparent due to increased leachate production in the LCRS sump(s) or the pan lysimeter(s), respectively, corrective action measures will be implemented to identify the location of the leaks and to repair them.

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#### SECTION 7 GROUNDWATER MONITORING PLAN

Three groundwater monitoring wells screened within first-encountered groundwater are proposed. The proposed locations of the monitoring wells are shown on Figure 6. The wells will be installed using the direct rotary wash drilling method by a California-licensed well drilling contractor. The wells will be screened from approximately 20 feet above the water table to 40 feet below the water table. The anticipated total depth of each well is approximately 360 feet bgs. The well casing will consist of 4-inch diameter, polyvinyl chloride (PVC) material in 20-foot long threaded sections. The screened-portion of the casing will have factory-machined slots. The bottom of the casing will have a threaded cap. Materials in the annular space between the casing and the borehole will be placed using tremie pipe. From the bottom of the borehole upward, the annular materials will consist of filter-pack sand to approximately 10 feet above the top of the screen, then a 10-foot thick layer of hydrated bentonite chips, and then sand-cement slurry to the ground surface. The slot size and filter-pack size will be selected based on the adjoining geologic materials. Surface completion will include a locked, steel, aboveground protective monument. The monument will be surrounded by four steel bollards placed in concrete in separate holes and extending to approximately four feet above ground surface.

The new wells will be developed using airlift pumping, surging, and/or swabbing for several hours until clear water is consistently obtained.

In accordance with Geotracker requirements, a California-registered land surveyor will measure the horizontal location of each of the three wells to an accuracy of less than one meter, and the vertical elevation of the top of casing of each well to an accuracy of less than 0.01 foot.

At least one of the groundwater monitoring wells will be installed at least four months prior to commencement of wastewater discharge to the lined evaporation pond. To provide a background data set, the well will be monitored at least four times prior to the commencement of wastewater discharge. The first monitoring event will occur at least one week after well development is finished. The following three monitoring events will be spaced at least one month apart from each other.

For each monitoring event, the well will be monitored in accordance with the following procedure:

- An electric sounder will be used to measure the depth to water and the total depth of the well prior to purging.
- The monitoring well will be purged with an electric submersible pump or a disposable bailer until: (1) at least three well-casing volumes are removed and the field-measured pH, electrical conductivity (EC), and temperature of the purged groundwater stabilize within 10-percent for three successive measurements; or (2) the removal of water exceeds the well's recharge capacity, causing the well to go dry, in which case at least 15 minutes will be allowed for the well to recharge prior to sampling. The purged groundwater will be placed on the ground surface near the well in a manner that promotes infiltration without erosion.
- After purging is completed at each well, a groundwater sample will be collected directly from the bailer or the pump's discharge tubing into laboratory-supplied bottles that contain appropriate preservatives.

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- The sample will be labeled and placed immediately on ice in a cooler for delivery to the laboratory for analysis. Chain of custody procedures will be maintained for all samples collected.
- All down-hole, non-disposable sampling equipment, including the pump, will be decontaminated between each well using a mild solution of Liquinox, rinsed in purified water, and air dried.

Groundwater samples will be analyzed by a California-accredited laboratory using U.S. Environmental Protection Agency (USEPA) or other standard methods for the following constituents and parameters: pH, EC, total dissolved solids (TDS), total alkalinity, hardness, bicarbonate, calcium, carbonate, chloride, magnesium, nitrate, potassium, silica, sodium, sulfate, and CAM-17 metals.

**URS** 7-2

Figure 1 - Project Vicinity Map with Topography

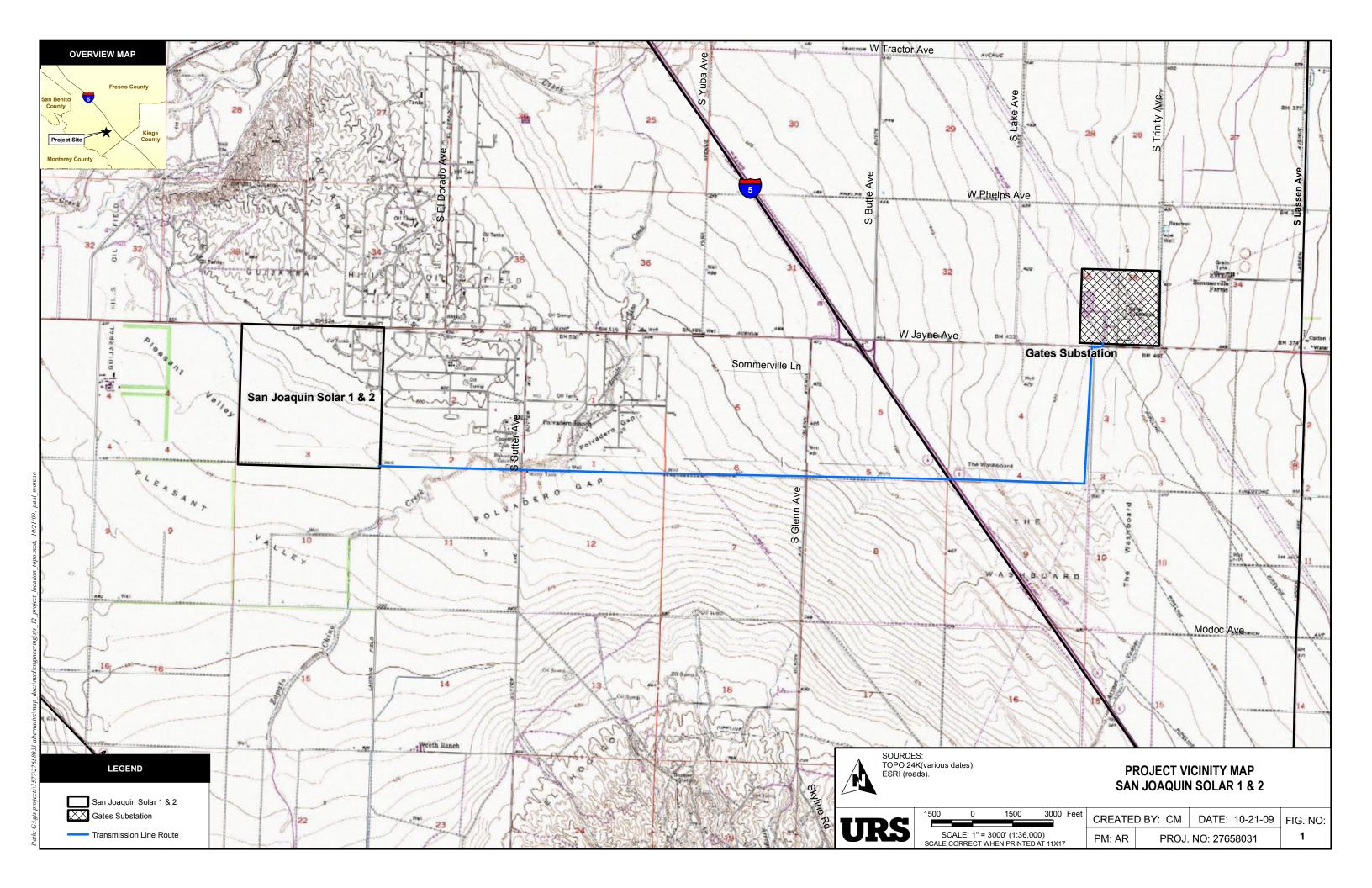
Figure 2 - Project Location Map with Aerial Image

Figure 3 - Aerial Rendering

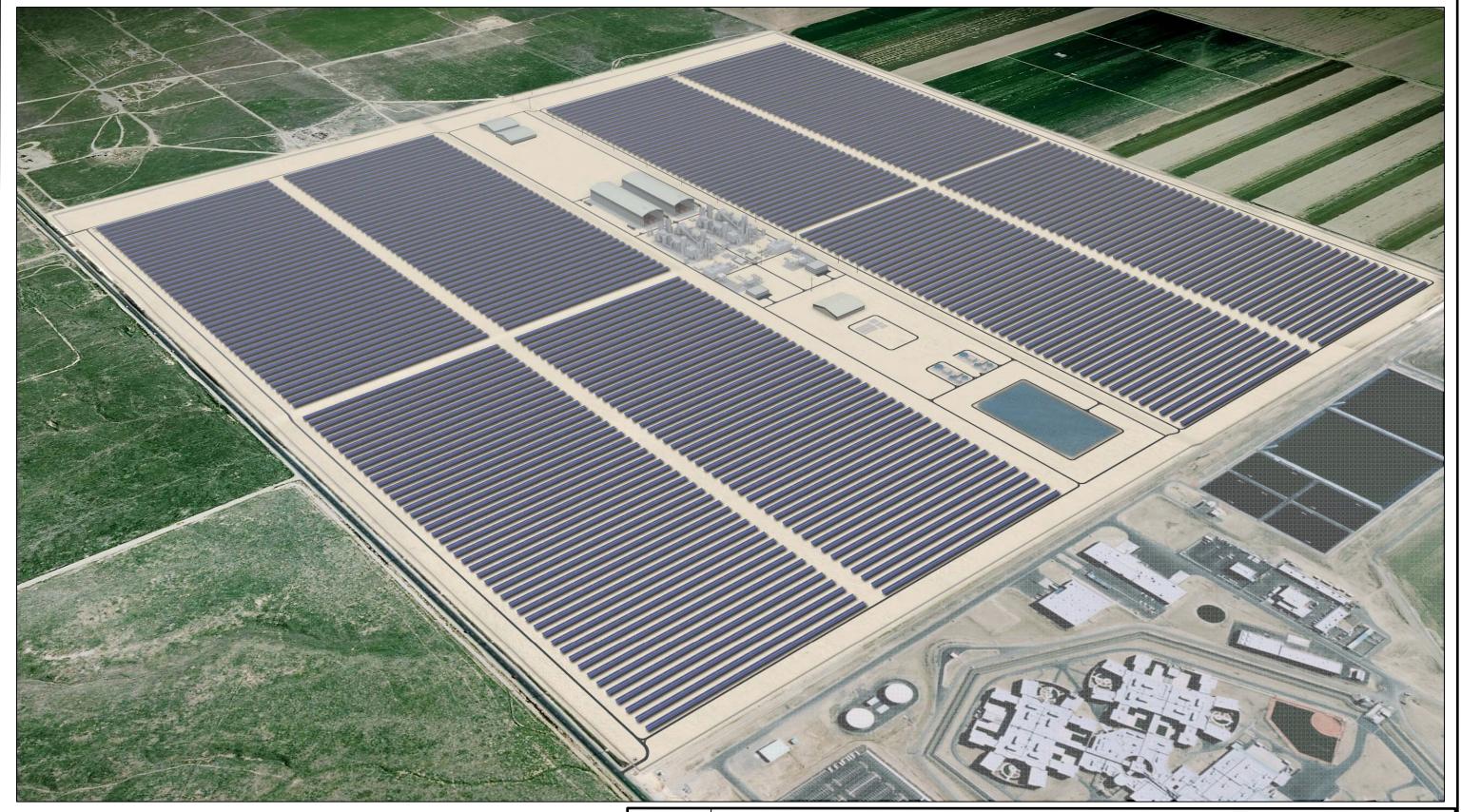
Figure 4 - Site Plan

Figure 5 - Water Balance

**Figure 6 - Evaporation Pond** 





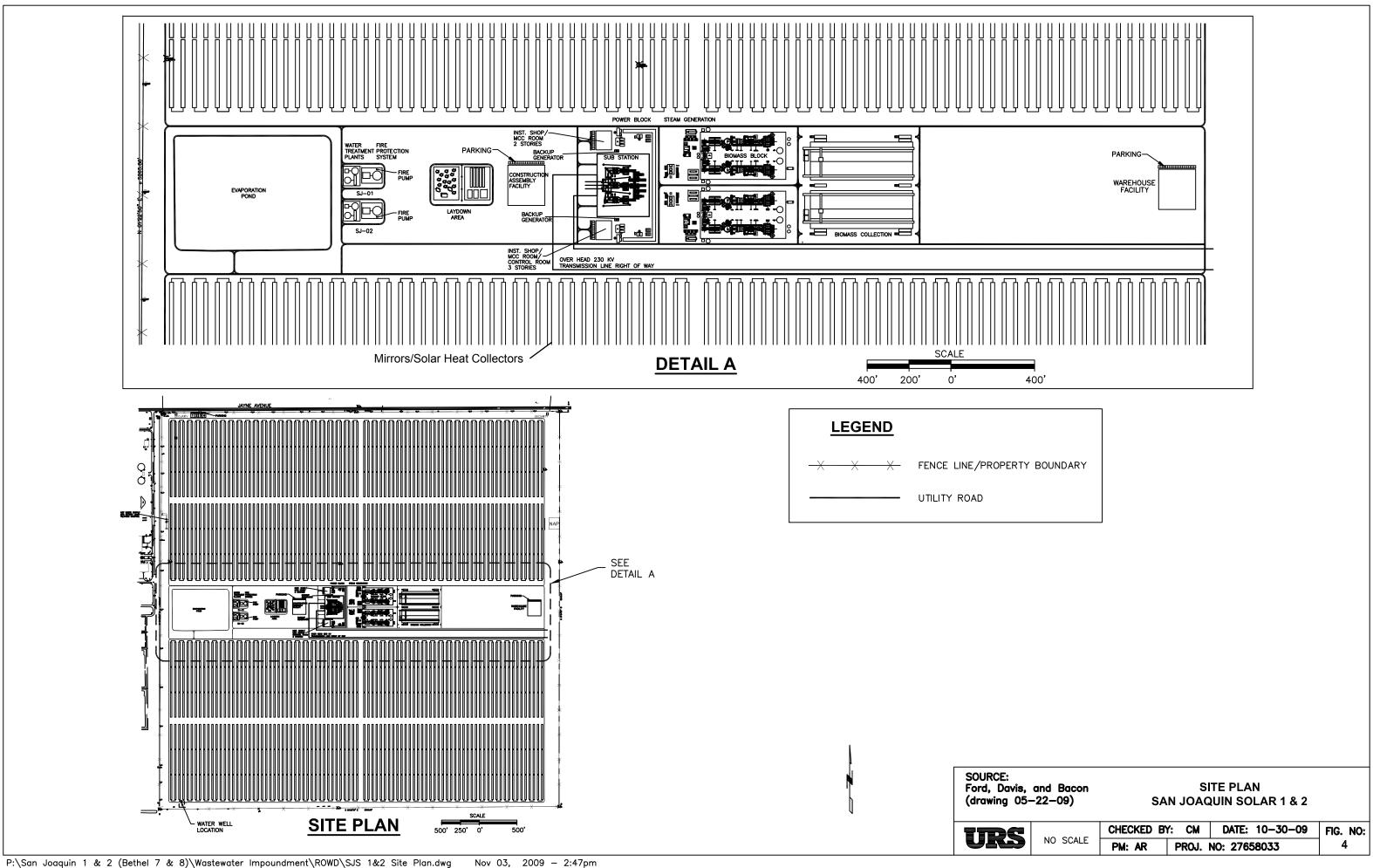


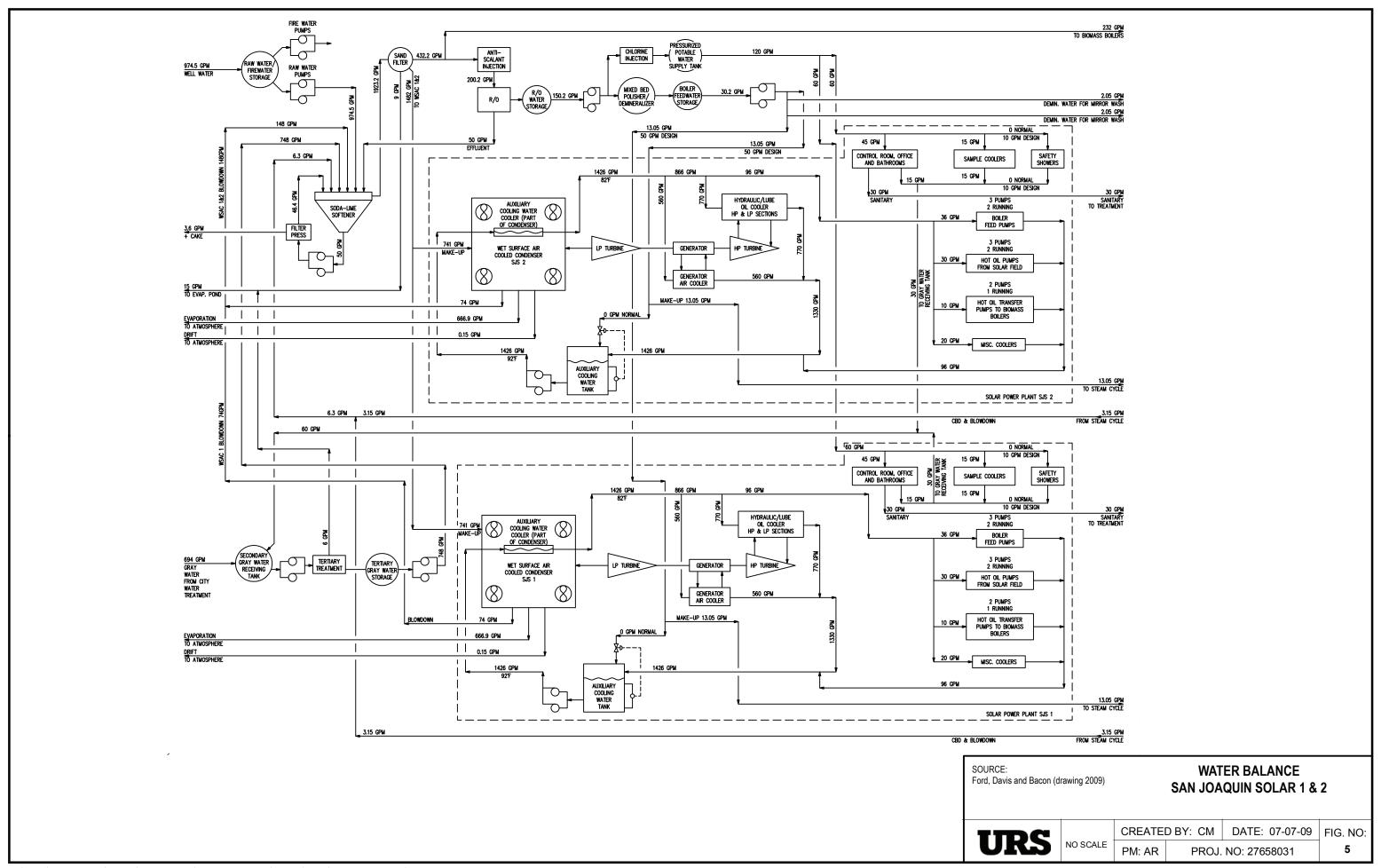


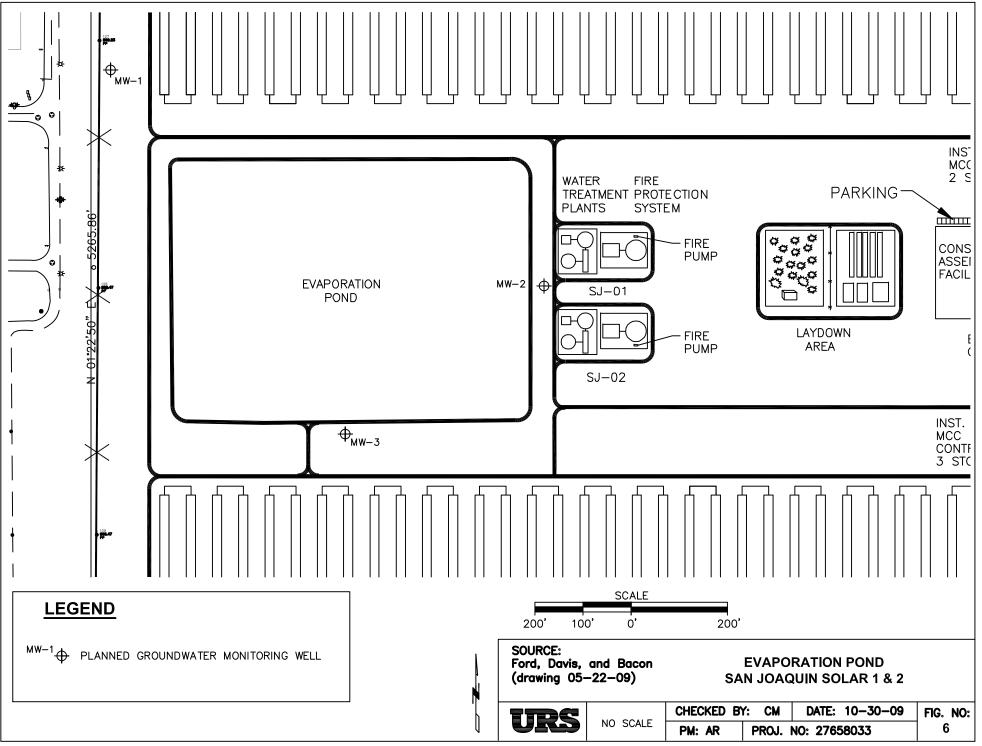
#### **AERIAL RENDERING OF SAN JOAQUIN SOLAR 1 & 2**

 NO SCALE
 CREATED BY: JW
 DATE: 11.14.08
 FIG. NO:

 PM:AR
 PROJ. NO: 27658031
 3







#### **INTRODUCTION**

This application package constitutes a Report of Waste Discharge (ROWD) pursuant to California Water Code Section 13260. Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the State, other than into a community sewer system, shall file a ROWD containing information which may be required by the appropriate Regional Water Quality Control Board (RWQCB).

This package is to be used to start the application process for all waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permits\* issued by a RWQCB except:

- a) Those landfill facilities that must use a joint Solid Waste Facility Permit Application Form, California Integrated Waste Management Board Form E-1-77; and
- b) General WDRs or general NPDES permits that use a Notice of Intent to comply or specify the use of an alternative application form designed for that permit.

#### This application package contains:

- 1. Application/General Information Form for WDRs and NPDES Permits [Form 200 (10/97)].
- 2. Application/General Information Instructions.

#### **Instructions**

Instructions are provided to assist you with completion of the application. If you are unable to find the answers to your questions or need assistance with the completion of the application package, please contact your RWQCB representative. The RWQCBs strongly recommend that you make initial telephone or personal contact with RWQCB regulatory staff to discuss a proposed new discharge before submitting your application. The RWQCB representative will be able to answer procedural and annual fee related questions that you may have. (See map and telephone numbers inside of application cover.)

All dischargers regulated under WDRs and NPDES permits must pay an annual fee, except dairies, which pay a filing fee only. The RWQCB will notify you of your annual fee based on an evaluation of your proposed discharge. Please do NOT submit a check for your first annual fee or filing fee until requested to do so by a RWQCB representative. Dischargers applying for reissuance (renewal) of an existing NPDES permit or update of an existing WDR will be billed through the annual fee billing system and are therefore requested NOT to submit a check with their application. Checks should be made payable to the State Water Resources Control Board.

#### **Additional Information Requirements**

A RWQCB representative will notify you within 30 days of receipt of the application form and any supplemental documents whether your application is complete. If your application is incomplete, the RWQCB representative will send you a detailed list of discharge specific information necessary to complete the application process. The completion date of your application is normally the date when all required information, including the correct fee, is received by the RWQCB.

\* NPDES PERMITS: If you are applying for a permit to discharge to surface water, you will need an NPDES permit which is issued under both State and Federal law and may be required to complete one or more of the following Federal NPDES permit application forms: Short Form A, Standard Form A, Forms 1, 2B, 2C, 2D, 2E, and 2F. These forms may be obtained at a RWQCB office or can be ordered from the National Center for Environmental Publications and Information at (513) 891-6561.

#### State of California Regional Water Quality Control Board



#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



#### **INSTRUCTIONS**

# FOR COMPLETING THE APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR: WASTE DISCHARGE REQUIREMENTS/NPDES PERMIT

If you have any questions on the completion of any part of the application, please contact your RWQCB representative. A map of RWQCB locations, addresses, and telephone numbers is located on the reverse side of the application cover.

#### I. FACILITY INFORMATION

You must provide the factual information listed below for ALL owners, operators, and locations and, where appropriate, for ALL general partners and lease holders.

#### A. FACILITY:

Legal name, physical address including the county, person to contact, and phone number at the facility. (NO P.O. Box numbers! If no address exists, use street and nearest cross street.)

#### B. FACILITY OWNER:

Legal owner, address, person to contact, and phone number. Also include the owner's Federal Tax Identification Number.

#### OWNER TYPE:

Check the appropriate Owner Type. The legal owner will be named in the WDRs/NPDES permit.

#### C. FACILITY OPERATOR (The agency or business, not the person):

If applicable, the name, address, person to contact, and telephone number for the facility operator. Check the appropriate Operator Type. If identical to B. above, enter "same as owner".

#### D. OWNER OF THE LAND:

Legal owner of the land(s) where the facility is located, address, person to contact, and phone number. Check the appropriate Owner Type. If identical to B. above, enter "same as owner".

#### E. ADDRESS WHERE LEGAL NOTICE MAY BE SERVED:

Address where legal notice may be served, person to contact, and phone number. If identical to B. above, enter "same as owner".

#### F. BILLING ADDRESS

Address where annual fee invoices should be sent, person to contact, and phone number. If identical to B. above, enter "same as owner".

#### State of California Regional Water Quality Control Board



#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



#### II. TYPE OF DISCHARGE

Check the appropriate box to describe whether the waste will be discharged to: A. Land, or B. Surface Water.

Check the appropriate box(es) which best describe the activities at your facility.

Hazardous Waste - If you check the Hazardous Waste box, STOP and contact a representative of the RWQCB for further instructions.

Landfills - A separate form, APPLICATION FOR SOLID WASTE FACILITY PERMIT/WASTE DISCHARGE REQUIREMENTS, California Integrated Waste Management Board Form E-1-77, may be required. Contact a RWQCB representative to help determine the appropriate form for your discharge.

#### III. LOCATION OF THE FACILITY

- 1. Enter the Assessor's Parcel Number(s) (APN), which is located on the property tax bill. The number can also be obtained from the County Assessor's Office. Indicate the APN for both the facility and the discharge point.
- 2. Enter the Latitude of the entrance to the proposed/existing facility and of the discharge point. Latitude and longitude information can be obtained from a U.S. Geological Survey quadrangle topographic map. Other maps may also contain this information.
- 3. Enter the Longitude of the entrance to the proposed/existing facility and of the discharge point.

#### IV. REASON FOR FILING

#### NEW DISCHARGE OR FACILITY:

A discharge or facility that is proposed but does not now exist, or that does not yet have WDRs or an NPDES permit.

#### CHANGE IN DESIGN OR OPERATION:

A material change in design or operation from existing discharge requirements. Final determination of whether the reported change is material will be made by the RWQCB.

#### CHANGE IN QUANTITY/TYPE OF DISCHARGE:

A material change in characteristics of the waste from existing discharge requirements. Final determination of whether the reported change would have a significant effect will be made by the RWQCB.

#### CHANGE IN OWNERSHIP/OPERATOR:

Change of legal owner of the facility. Complete Parts I, III, and IV only and contact the RWQCB to determine if additional information is required.

#### WASTE DISCHARGE REQUIREMENTS UPDATE OR NPDES PERMIT REISSUANCE:

WDRs must be updated periodically to reflect changing technology standards and conditions. A new application is required to reissue an NPDES permit which has expired.

#### OTHER:

If there is a reason other than the ones listed, please describe the reason on the space provided. (If more space is needed, attach a separate sheet.)

#### State of California Regional Water Quality Control Board



#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



#### V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

It should be emphasized that communication with the appropriate RWQCB staff is vital before starting the CEQA documentation, and is recommended before completing this application. There are Basin Plan issues which may complicate the CEQA effort, and RWQCB staff may be able to help in providing the needed information to complete the CEQA documentation.

Name the Lead Agency responsible for completion of CEQA requirements for the project, i.e., completion and certification of CEQA documentation.

Check YES or NO. Has a public agency determined that the proposed project is exempt from CEQA? If the answer is YES, state the basis for the exemption and the name of the agency supplying the exemption on the space provided. (Remember that, if extra space is needed, use an extra sheet of paper, but be sure to indicate the attached sheet under Section VII. Other.)

Check YES or NO. Has the "Notice of Determination" been filed under CEQA? If YES, give the date the notice was filed and enclose a copy of the Notice of Determination and the Initial Study, Environmental Impact Report, or Negative Declaration. If NO, check the box of the expected type of CEQA document for this project, and include the expected date of completion using the timelines given under CEQA. The date of completion should be taken as the date that the Notice of Determination will be submitted. (If not known, write "Unknown")

#### VI. OTHER REQUIRED INFORMATION

To be approved, your application MUST include a COMPLETE characterization of the discharge. If the characterization is found to be incomplete, RWQCB staff will contact you and request that additional specific information be submitted.

This application MUST be accompanied by a site map. A USGS 7.5' Quadrangle map or a street map, if more appropriate, is sufficient for most applications.

#### VII. OTHER

If any of the answers on your application form need further explanation, attach a separate sheet. Please list any attachments with the titles and dates on the space provided.

#### VIII. CERTIFICATION

Certification by the owner of the facility or the operator of the facility, if the operator is different from the owner, is required. The appropriate person must sign the application form.

- Acceptable signatures are:
- 1. **for a corporation,** a principal executive officer of at least the level of senior vice-president;
- 2. **for a partnership or individual (sole proprietorship),** a general partner or the proprietor;
- 3. for a governmental or public agency, either a principal executive officer or ranking elected/appointed official.

#### DISCHARGE SPECIFIC INFORMATION

In most cases, a request to supply additional discharge specific information will be sent to you by a representative of the RWQCB. If the RWQCB determines that additional discharge specific information is not needed to process your application, you will be so notified.

#### State of California Regional Water Quality Control Board



#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



A. Facility:	FACILITY	LNFORMATION	
Name:			
San Joaquin Solar 1 & 2			
West Jayne Avenue			
City:	County:	State:	Zip Code:
Coalinga	Fresno	CA	93210
Contact Person: Elizabeth ingram	· · · · · · · · · · · · · · · · · · ·	Telephone Nu (858) 427-6	
B. Facility Owner:			
หลเกษา: Martifer Renewables Solar Thermal LLC			Owner Type (Check One)  1. Individual 2. Corporation
Address: 12555 High Bluff Drive, Suite 100			3. Governmental 4. Partnership Agency
city: San Diego	State: CA	Zip Code: 92130	5. Other:
Contact Person:		Telephone Num	
Elizabeth Ingram		(858) 427-6	5536 26-1562843
C. Facility Operator (The agency or business,	not the person):		
หลme: Martifer Renewables Solar Thermal LLC			Operator Type (Check One)  1.
Address: 12555 High Bluff Drive, Suite 100			3. Governmental 4. Partnership Agency
city: San Diego	State: CA	Zip Code: 92130	5. Other:
Contact Person: Lisa Matich		Telephone Mum (858) 947-7	
D. Owner of the Land:			
Name:			Owner Type (Check One)
William J. Mouren Farming, Inc.	onesido.	· · · · · · · · · · · · · · · · · · ·	1. Individual 2. Corporation
Address: P.O. Box 835			3. Governmental 4. Partnership Agency
City:	State:	Zip Code:	
Coalinga Contact Person:	CA	93210	
William Anderson		(559) 935-	
E. Address Where Legal Notice May Be S	erved:		
Address: Joyce Law Group; P.O. Box 9056		•	
city: La Jolla	State: CA	Zip Code: 92038	
Contact Person: Robert Joyce		Telephone Num (858) 454-2	ober: 018
F. Billing Address:			
Address: 12555 High Bluff Drive, Suite 100		***************************************	
city: San Diego	State: CA	Zip Code: 92130	
Contact Person:		Telephone Num	ber:

#### State of California Regional Water Quality Control Board

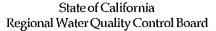


#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



#### II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in	this Application (A or B):
✓ A. WASTE DISCHARGE TO L	AND B. WASTE DISCHARGE TO SURFACE WATER
Check all that apply:	
Domestic/Municipal Wastewater Treatment and Disposal Cooling Water Mining Waste Pile Wastewater Reclamation Other, please describe:	Animal Waste Solids  Land Treatment Unit  Dredge Material Disposal  Surface Impoundment  Industrial Process Wastewater  Animal or Aquacultural Wastewater  Biosolids/Residual  Hazardous Waste (see instructions)  Landfill (see instructions)  Storm Water
III. I  Describe the physical location of the faci	LOCATION OF THE FACILITY
1. Assessor's Parcel Number(s) Facility: 085-030-55S, -57S, -58S Discharge Point: 085-030-57S	2. Latitude Facility: 36.1369 degrees N Discharge Point: 36.1306 deg N  3. Longitude Facility: 120.2351 degrees W Discharge Point: 120.2337 deg W
✓ New Discharge or Facility	IV. REASON FOR FILING  Changes in Ownership/Operator (see instructions)
Change in Design or Operation	☐ Waste Discharge Requirements Update or NPDES Permit Reissuance
Change in Quantity/Type of Disc	
V. CALIFORNIA	ENVIRONMENTAL QUALITY ACT (CEQA)
Name of Lead Agency: <u>California Energ</u>	y Commission, CEQA-equivalent process
Has a public agency determined that the pr If Yes, state the basis for the exemption and Basis for Exemption/Agency:	oposed project is exempt from CEQA? Yes V No the name of the agency supplying the exemption on the line below.
Has a "Notice of Determination" been filed If Yes, enclose a copy of the CEQA documexpected type of CEQA document and expe	ent, Environmental Impact Report, or Negative Declaration. If no, identify the
Expected CEQA Documents:	•
EIR Negative Declarati	on Expected CEQA Completion Date: CEQA equiv. May 2010





#### APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



#### VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

# VII. OTHER Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below: Please see accompanying Report of Waste Discharge, dated November 6, 2009. You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code. VIII. CERTIFICATION "I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment." Lisa Matich Print Name: Signature: FOR OFFICE USE ONLY

Fee Amount Received:

Check #:

Date Form 200 Received:

Letter to Discharger:

# California Environmental Protection Agency Bill of Rights for Environmental Permit Applicants

California Environmental Protection Agency (Cal/EPA) recognizes that many complex issues must be addressed when pursuing reforms of environmental permits and that significant challenges remain. We have initiated reforms and intend to continue the effort to make environmental permitting more efficient, less costly, and to ensure that those seeking permits receive timely responses from the boards and departments of the Cal/EPA. To further this goal, Cal/EPA endorses the following precepts that form the basis of a permit applicant's "Bill of Rights."

- 1. Permit applicants have the right to assistance in understanding regulatory and permit requirements. All Cal/EPA programs maintain an Ombudsman to work directly with applicants. Permit Assistance Centers located throughout California have permit specialists from all the State, regional, and local agencies to identify permit requirements and assist in permit processing.
- 2. Permit applicants have the right to know the projected fees for review of applications, how any costs will be determined and billed, and procedures for resolving any disputes over fee billings.
- 3. Permit applicants have the right of access to complete and clearly written guidance documents that explain the regulatory requirements. Agencies must publish a list of all information required in a permit application and of criteria used to determine whether the submitted information is adequate.
- 4. Permit applicants have the right of timely completeness determinations for their applications. In general, agencies notify the applicant within 30 days of any deficiencies or determine that the application is complete. California Environmental Quality Act (CEQA) and public hearing requests may require additional information.
- 5. Permit applicants have the right to know exactly how their applications are deficient and what further information is needed to make their applications complete. Pursuant to California Government code Section 65944, after an application is accepted as complete, an agency may not request any new or additional information that was not specified in the original application.
- 6. Permit applicants have the right of a timely decision on their permit application. The agencies are required to establish time limits for permit reviews.
- 7. Permit applicants have the right to appeal permit review time limits by statute or administratively that have been violated without good cause. For state environmental agencies, appeals are made directly to the Cal/EPA Secretary or to a specific board. For local environmental agencies, appeals are generally made to the local governing board or, under certain circumstances, to Cal/EPA. Through this appeal, applicants may obtain a set date for a decision on their permit and, in some cases, a refund of all application fees (ask boards and departments for details).
- 8. Permit applicants have the right to work with a single lead agency where multiple environmental approvals are needed. For multiple permits, all agency actions can be consolidated under a lead agency. For site remediation, all applicable laws can be administered through a single agency.
- 9. Permit applicants have the right to know who will be reviewing their application and the time required to complete the full review process.

#### Water Balance for Lined Wastewater Pond San Joaquin Solar 1 & 2 12-Nov-09

		Water Inp	outs to Pond			Wate	er Outputs from	Pond			Month End Value	8
	Waste	ewater	Pre	cipitation*	Pan Evaporation	70% Pan Evaporation	70% Fresh- Water Evaporation	Evaporation Area	Max. Volume Evaporated	Volume in Pond	Water Height in Pond	Freeboard
Month	gallons	cf	inches	cf	inches	inches	inches	sf	cf	cf	ft	ft
January	758,880	101,455	1.4	54,057	1.80	1.26	0.88	350,000	25,725	409,786	1.2	4.8
February	691,560	92,455	4.9	** 189,199	2.90	2.03	1.42	359,664	42,590	648,849	1.8	4.2
March	758,880	101,455	1.2	46,334	6.20	4.34	3.04	359,664	91,055	705,583	2.0	4.0
April	734,400	98,182	0.6	23,167	9.39	6.57	4.60	359,664	137,904	689,028	1.9	4.1
May	758,880	101,455	0.2	7,722	12.96	9.07	6.35	359,664	190,334	607,871	1.7	4.3
June	734,400	98,182	0.0	0	16.73	11.71	8.20	359,664	245,701	460,351	1.3	4.7
July	758,880	101,455	0.0	0	18.67	13.07	9.15	359,664	274,193	287,613	0.8	5.2
August	758,880	101,455	0.0	0	16.37	11.46	8.02	350,000	233,955	155,113	0.4	5.6
September	734,400	98,182	0.2	7,722	12.61	8.83	6.18	350,000	180,218	80,799	0.2	5.8
October	758,880	101,455	0.3	11,584	8.05	5.64	3.94	350,000	115,048	78,790	0.2	5.8
November	734,400	98,182	0.8	30,890	3.89	2.72	1.91	350,000	55,595	152,266	0.4	5.6
December	758,880	101,455	1.2	46,334	2.44	1.71	1.20	350,000	34,872	265,184	0.8	5.2
Totals	8,941,320	1,195,364	10.8	417,010	112.01	78.41	54.88		1,627,189			

Continuous Discharge Rate (gpm) 17
Total Wastewater Discharge (afy) 27.4
Precipitation Area (sf) 463,344

cf = cubic feet

afy = acre feet per year

Pond	Water	Pond
Depth (ft)	Height (ft)	Area (sf)
0		409,904
1	5	399,600
2	4	389,424
3	3	379,376
4	2	369,456
5	1	359,664
6	0	350.000

Assumed Initial Water Height in Pond on January 1 ft 0.8

<sup>\*</sup>Assumes that none of the site's storm water enters the pond except for the rain that actually falls on the pond and surrounding berm.

<sup>\*\*</sup>Assumes average annual precipitation, plus the 1000-year, 24-hour storm of 3.5 inches in February.

ft = feet

sf = square feet



# BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

1516 NINTH STREET, SACRAMENTO, CA 95814 1-800-822-6228 - <u>www.energy.ca.gov</u>

APPLICATION FOR CERTIFICATION
FOR THE SAN JOAQUIN SOLAR UNITS 1 AND 2
LICENSING PROJECT

Docket No. 08-AFC-12

**PROOF OF SERVICE** 

(Revised 8/27/2009)

#### **APPLICANT**

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California Unions for (CURE)
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Tanya A. Gulesseri
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#### APPLICANT'S CONSULTANTS

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Robert Joyce, Corporate Counsel Joyce Law Group 7848 Ivanhoe Avenue La Jolla, CA 92037 *E-mail Preferred* Robert joyce@joycelawgroup.net

#### **INTERESTED AGENCIES**

California ISO *E-mail Preferred*<u>e-recipient@caiso.com</u>

#### **INTERVENORS**

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#### **ENERGY COMMISSION**

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<sup>\*</sup>indicates change

#### **Declaration of Service**

I, <u>Anne Runnalls</u>, declare that on <u>November 12, 2009</u>, I served and filed copies of the attached <u>Report of Waste Discharge</u>, dated <u>November 12, 2009</u>. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/sjsolar/index.html]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

#### (Check all that Apply)

For s	service to all other parties:
<u>X</u>	_sent electronically to all email addresses on the Proof of Service list;
	_by personal delivery or by depositing in the United States mail at <u>Sacramento, California</u> with first- class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses <b>NOT</b> marked "email preferred."
AND	
For f	iling with the Energy Commission:
<u>X</u>	_sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);
OR	
	_depositing in the mail an original and 12 paper copies, as follows:

#### CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-12 1516 Ninth Street, MS-4 Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Anne Runnalls

anne Runnalla