Linda S. Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board
Central Valley Region
Karl E. Longley, ScD, P.E., Chair

1685 E Street, Fresno, California 93706
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http://www.waterboards.ca.gov/centralvalley

Arnold Schwarzenegger
Governor

21 October 2009

DOCKET	
06-AFC-5C	
DATE	OCT 21 2009
RECD.	OCT 26 2009

Don Burkard
Panoche Energy Center, LLC
43883 West Panoche Road
Firebaugh, CA 93622

INCOMPLETE REPORT OF WASTE DISCHARGE, PANOCHE ENERGY CENTER, FRESNO COUNTY

On 21 September 2009, the Central Valley Water Board received a Report of Waste Discharge (RWD) for the discharge of wastewater from an electric generation facility to two unlined ponds. The RWD was prepared and certified by Stuart St. Clair (RCE No. 60945) and included a Form 200, and a technical report. Central Valley Water Board staff determined that the RWD is incomplete.

The following needs to be submitted to complete the RWD:

1. A Form 200 signed and certified by a duly authorized person, which is defined as:

   For a corporation, a principal executive officer of at least the level of senior vice-president;
   For a partnership or individual (sole proprietorship), a general partner or the proprietor;
   For a governmental or public agency, either a principal executive officer or ranking elected/appointed official.

2. Filling fee of $ 14,586 (based on a threat to water quality and complexity of "2A" plus a 9.5% surcharge) payable to the State Water Resources Control Board.

3. Calculation of a month-by-month water balance. The enclosed *Information Needs for Water Balance Calculations* describes the requirements of a water balance in more detail.

4. A written plan for how the ponds will be managed and maintained.

5. A site map that shows the location of the two supply wells and groundwater monitoring well relative to the proposed storage ponds.

6. A detailed accounting of the chemical usage at the facility for all chemicals that enter the process stream and a description of how and where in the process stream they enter. Estimate the amount of chemical used on an annual basis and describe any seasonal variability in chemical usage.

The technical report accompanying the RWD must be prepared and certified by a person registered to practice in California if any part of it requires interpretation and proper application of engineering or geologic science.

If you have any questions regarding this matter, please call Denise Soria at 559.444.2488 or via email at dsoria@waterboards.ca.gov.

DOUGLAS K. PATTESON
Senior Engineer
RCE No. 55985

Enclosures: Information Needs for Water Balance Calculations

cc: Stuart St. Clair, URS Corporation, Fresno
Dale Rundquist, California Energy Commission, Sacramento
Cheryl Closson, California Energy Commission, Sacramento

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INFORMATION NEEDS FOR WATER BALANCE CALCULATIONS

Reports of waste discharge for land application must include a water balance prepared and certified by a California registered civil engineer. Necessary factors for performing water balance calculations for inclusion in reports of waste discharge are provided below. The water balance typically is presented in spreadsheet form.

Monthly average ET_o (observed evapotranspiration)

- Information sources include California Irrigation Management Information System (CIMIS) http://www.cimis.water.ca.gov/

Monthly crop uptake

- Crop water utilization rates are available from a variety of publications available from the local UC Davis extension office.
- Irrigation efficiency

  Frequently, engineers include a factor from irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.

Monthly average precipitation

- This data is available at http://www.cimis.water.ca.gov/ or at http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html.
- Select the station nearest the proposed project.
- 100-year precipitation return interval. This is a probability calculation. Most consultants use the log Pearson Type III distribution.

Monthly average and annual average discharge flow rate

- This comes from the project design.

Storage

- Storage during the winter and rainy season when not irrigating the crops. As a general rule, this storage is the predominant consideration. This could be up to 120 days of storage.
- Equalization Storage between irrigation cycles and storage during harvesting periods. Typically, when the above-required winter storage is provided, these needs are automatically met.

Basin design

- Liners may be required, depending upon the results of the Report of Waste Discharge's anti-degradation analysis.
- Cleaning procedures. Depending upon the solids concentration, periodic cleaning may be required to remove sludge. Where a liner is required, the engineer must design the

structure to provide access and egress from the basin and needs to protect the liner from damage during the cleaning process

- Fencing. As a general rule, all storage basins require fencing and posting to restrict access by the general public.
- Filling and drainage structures to provide an inlet and outlet. Design consideration should include erosion control
- Pond percolation rate

  Actual

  For the rare instance where an existing basin is being utilized, the engineer can measure the change in volume during an extended time period. This will require considering the evaporation rate, the inflow quantity, the change in volume, and the period of time of the test. Preferably, this test will be extended for a minimum of 30 consecutive days. This requires using calibrated flow meters to obtain a meaningful result. The engineer must document the flow meter precision and should be a conservative calculation.

  Three-ring infiltration test

  This test normally is performed by a soils engineering firm. The test normally requires several different locations at the elevation and location of the proposed basin bottom in either undisturbed or soil compacted to a minimum 95%.