ATTACHMENT C
ADDITIONAL INFORMATION REQUIREMENTS
FOR A REPORT OF WASTE DISCHARGE
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION
MULE CREE STATE PRISON WASTEWATER TREATMENT PLANT

Provide a technical report prepared by a California Registered Civil Engineer that presents the following information:

1. A narrative description of all wastewater conveyance, treatment, and disposal systems currently existing at the facility.

2. A narrative description of all planned physical improvements, their purpose, and anticipated completion dates. If phased build out is planned provide scope and completion dates for each phase.

3. A process flow diagram, scaled treatment plant site plan, and scaled map(s) showing all existing and proposed effluent disposal areas (including conveyance and tailwater control systems.

4. For each pond and other waste containment structure, provide the following information. Discuss both existing and proposed ponds:
   a. Identification (name) and function of the pond;
   b. Surface area, depth, and volumetric capacity at two feet of freeboard;
   c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee;
   d. Materials used to construct each berm or levee;
   e. Description of engineered liner, if any;
   f. Estimated steady state percolation rate for each unlined pond;
   g. Depth to shallow groundwater below the planned base of the ponds;
   h. Overfilling/overflow prevention features; and
   i. Operation and maintenance procedures.

5. For each reclamation site, provide:

   a. Complete ownership information.

   b. A scaled map showing the topography, property boundary, streets, residences, surface waters, etc. A USGS topo map may be sufficient as a base map.

   c. A scaled map showing the limits of the reclamation areas, reclaimed water conveyance systems, other irrigation water conveyance systems, on-site drainage, tailwater systems, and runoff controls (existing and proposed).

   d. Net irrigation area.

e. Method(s) of irrigation, including typical frequency and depths of application for each month when irrigation will occur.

f. Typical cropping practices (crops grown, rotation cycles, use of fertilizers and pesticides, etc.).

g. Typical storm water management practices.

6. A description of the sources and types of wastewater flowing into the wastewater treatment system, design flow rates, and the design capacity of the system (existing and proposed). Include projected infiltration/inflow rates and peaking factors used in design calculations.

7. A description of emergency wastewater storage facilities or other means of preventing system bypass or failure during reasonably foreseeable overload conditions (e.g., power failure, sewer blockage, and illicit sewer discharges). Consider both potential problems at the plant and within the community sewer system.

8. A description of the community sewer system: materials, age, infiltration/inflow estimate, and lift station details (type, location, capacity, backup systems, and alarm features).

9. Chemical characterization of influent wastewater quality, including biochemical oxygen demand, total suspended solids, total dissolved solids, and nitrogenous compounds. Include a discussion of seasonal variations, if any, and supporting analytical data.

10. A description of all known or anticipated industrial dischargers whose individual BOD, total dissolved solids and/or hydraulic loads will be greater than 2% of the plant's total daily influent loading, including the following:
    a. Name;
    b. Industry;
    c. Nature of waste stream;
    d. Average daily flow (gpd and percentage of total plant loading);
    e. Peak daily flow;
    f. Average daily BOD loading (lb/day and percentage of total plant loading);
    g. Peak daily BOD loading;
    h. Salinity (e.g., total dissolved solids, electrical conductivity, major ions);
    i. Nitrogen (all forms);
    j. Nature of seasonal or diurnal variations in influent flow or quality, if any; and
    k. Pre-treatment or self-monitoring programs, if any.

11. A description of the following for the both existing system and each phase of the proposed expansion:
    a. Average dry weather flow;

b. Peak wet weather flow; and

c. Effluent quality at the point of discharge to the disposal system (BOD, total suspended solids, settleable matter, nitrogenous compounds, electrical conductivity, pH, and total coliform organisms).

12. Narrative description of expected solids generation rates and handling/storage procedures:

    a. Debris;

    b. Grit and screenings; and

    c. Biosolids.

13. Narrative description of proposed solids disposal practices for debris, grit, screenings, and biosolids:

    a. Method of disposal;

    b. Frequency of disposal;

    c. Disposal site/area name(s) and location(s); and

    d. For biosolids (if beneficial re-use is proposed for reclamation sites):

        - Land application rates (dry tons per unit area per application, number of applications per year);
        - Soil incorporation practices;
        - Vegetation grown;
        - Runoff controls, if any; and
        - Public access controls.

14. A description of the types of soil underlying any planned ponds and effluent disposal areas (include a copy of the geotechnical report).

15. Projected monthly water balance for each phase of buildout demonstrating adequate containment capacity for the 100-year return period total annual precipitation, including consideration of at least the following.

    a. A minimum of two feet of freeboard in each pond at all times;

    b. Historical local evaporation data (monthly average values);

    c. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns;

    d. Proposed wastewater loading rates distributed monthly in accordance with expected seasonal variations;

    e. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds); and

    f. Projected irrigation usage rates (if recycling is proposed).

16. Proposed flow limits and basis for the limit for the current facility and each phase of the planned expansion. Consider dry weather flows vs. peak flows and seasonal variations associated with major industrial dischargers. Include the technical basis for the proposed flow limit (e.g., design treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent disposal capacity).

17. A narrative description of plant operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.

18. A description of any policies or facility design features that reduce the potential for groundwater degradation (best practicable treatment and control or BPTC measures). Such features might include industrial discharger effluent quality limits, prohibitions on discharge of certain types of waste, advanced treatment, disinfection, concrete treatment structures, and pond lining systems.

19. Provide a technical report prepared by a Professional Geologist or Certified Hydrogeologist that provides an assessment of the following:

    a. Baseline groundwater quality at each new disposal or reclamation site.

    b. Groundwater degradation, if any, that has resulted from the existing operation; and

    c. The potential for the proposed effluent disposal expansion to degrade groundwater quality (at the plant and at reclamation/disposal sites).

    This assessment must be made based on site-specific data and must provide technically-based answers to the following questions based on historical data and supplemental data to be collected for the purpose of this study:

    - What is the groundwater elevation and gradient at the existing facility? At least one new well will be required to better define background groundwater quality outside the influence of any mounding around the ponds and at least one more well will required downgradient of the existing ponds.
    - What is background shallow groundwater quality for typical municipal waste constituents? Compare to established water quality objectives for protection of the beneficial uses of groundwater.[1]
    - What is the groundwater quality data downgradient of the existing WWTP and application areas.
    - For each monitored constituent, has the existing facility degraded groundwater quality? If so:
        - What constituents exceed the applicable water quality objective?
        - What constituents exceed background concentrations?

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[1] Include analyses for the following: BOD, total coliform organisms, total dissolved solids, ammonia (as N), total Kjeldahl nitrogen, nitrate (as N), nitrite (as N), and a complete anion/cation scan with ion balance. Total coliform organisms shall be determined using the 15- or 25- tube method.

- Based on site hydrogeology, is the degradation contained within a defined area (or one that could be defined by additional investigation)?
- What Best Practicable Treatment and Control (BPTC) methods will be utilized to minimize the degradation?

- What are subsurface conditions at the proposed new disposal sites?[2]
- What is the character of groundwater quality at the proposed new disposal sites? [2]
- Based on site hydrogeology, the nature of the waste, and the proposed disposal method, what level of degradation is expected to result from the expansion (if any)?
- If the proposed expansion will cause degradation, how will the degradation be confined or controlled?
- At a minimum, the report shall include the following:
  - Rationale for field investigation approach.
  - Description and documentation of all proposed investigational methods and activities.
  - Description of the site hydrogeology including stratigraphy, hydraulic conductivity of the soils, capillary rise, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (i.e., a site conceptual model)
  - A detailed map showing locations of all water wells including springs and isolated wetlands within one mile of the WWTP and land application areas.
  - Description of fate and transport mechanisms for all monitored constituents.
  - Description of data reduction/analysis techniques and results.
  - Presentation of historical and supplemental site-specific soil and groundwater data.
  - Comparison of groundwater quality data to background groundwater quality and water quality objectives for each constituent.
  - An analysis of all data and conclusions regarding each of the above questions.

[2] This must be based on subsurface investigation at the proposed disposal site including soil borings and/or cone penetrometer tests and groundwater analyses. Groundwater samples may be obtained using a one-time sampling method such as Hydropunch®.