

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. R5-2003-0136

FOR
CAMPBELL SOUP SUPPLY COMPANY, LLC
SEED RESEARCH AND DEVELOPMENT FACILITY
YOLO COUNTY

The Discharger shall comply with this Revised Monitoring and Reporting Program (Revised MRP), issued pursuant to Water Code Section 13267, which describes requirements for monitoring industrial process wastewater and groundwater. The Discharger shall not implement any changes to this Revised MRP unless and until another revision is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this Revised MRP.

WASTEWATER STORAGE TANK MONITORING

The wastewater storage tank shall be monitored as follows:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow ¹	gpd, inches	Calculation	Daily	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly

¹ Report as total daily flow to each disposal check.

EFFLUENT MONITORING

Effluent samples shall be collected just prior to discharge to the disposal checks (grab samples collected from a common pipeline or sump pit after the screening system will be considered representative). At a minimum, the Discharger shall monitor the effluent wastewater as follows:

Constituent/Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
pH	pH units	Grab	Weekly	Monthly
Total Dissolved Solids	mg/L	Grab	Weekly	Monthly
Settleable Solids	ml/L	Grab	Weekly	Monthly
BOD ₅ ¹	mg/L	Grab	Weekly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Weekly	Monthly
Nitrate Nitrogen	mg/L	Grab	Weekly	Monthly
Other Salinity Species ²	mg/L	Grab	Monthly	Monthly

¹ 5-day, 20°C Biochemical Oxygen Demand.

² Includes chloride, iron, magnesium, manganese, sodium, potassium, and sulfate. Samples for iron and manganese shall be filtered with a 0.45-micron filter prior to sample preservation.

LAND APPLICATION AREA MONITORING

A. Daily Pre-Application Inspections

The Discharger shall inspect the disposal checks at least once daily prior to irrigating, and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. The following items shall be documented for each disposal check to be irrigated on that day:

1. Evidence of erosion;
2. Berm condition;
3. Soil saturation;
4. Ponding and/or potential for uneven wastewater distribution;
5. Potential runoff to off-site areas;
6. Potential and actual discharge to surface water;
7. Accumulation of organic solids;
8. Soil clogging;
9. Odors that have the potential to be objectionable at or beyond the property boundary; and
10. Insects.

B. Routine Monitoring

The Discharger shall perform the following routine monitoring and loading calculations, and shall present the data in the Monthly and Annual Monitoring Reports.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Precipitation	0.1 in.	Rain Gauge	Daily	Monthly, Annually
Checks receiving wastewater	--	Observation	Daily	Monthly, Annually
Hydraulic loading rate	in.	Calculated ¹	Daily	Monthly, Annually
BOD ₅ loading rate	lb/ac.	Calculated ^{1, 2}	Daily	Monthly, Annually
Wastewater nitrogen loading rate	lb/ac.	Calculated ^{1, 3}	Daily	Monthly, Annually

¹ Rate shall be calculated for each disposal check.

² BOD₅ shall be calculated using the daily applied volume of wastewater, actual application area, and the average of the three most recent BOD₅ results for the wastewater).

³ Total nitrogen loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of effluent total nitrogen.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the Revised MRP and shall be sampled and analyzed according to the schedule below.

Groundwater elevations shall be measured prior to well purging or sampling. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected and analyzed using standard EPA methods or as approved by the Executive Officer. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling and Reporting Frequency</u>
Depth to Groundwater	feet	Measurement	Semi-Annual
Groundwater Elevation ¹	feet	Calculated	Semi-Annual
Gradient Magnitude	feet/feet	Calculated	Semi-Annual
Gradient Direction	degrees	Calculated	Semi-Annual

Constituent/Parameter	Units	Sample Type	Sampling and Reporting Frequency
pH	pH Units	Grab	Semi-Annual
Total Dissolved Solids	mg/L	Grab	Semi-Annual
Total Kjeldahl Nitrogen	mg/L	Grab	Semi-Annual
Nitrate Nitrogen	mg/L	Grab	Semi-Annual
Other Salinity Species ²	mg/L	Grab	Semi-Annual

¹ Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation.

² Includes chloride, iron, magnesium, manganese, sodium, potassium, and sulfate. Samples for iron and manganese shall be filtered with a 0.45-micron filter prior to sample preservation.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g. influent, effluent, soil, groundwater), sampling location, and the reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Revised Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a California-registered geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e., the January report is due by 1 March). Monthly reports shall be submitted regardless of whether process wastewater is generated. However, monitoring of the wastewater storage tank, effluent, and land application areas is only required for months when there has been a discharge to land. At a minimum, the reports shall include:

1. Results of storage tank, effluent, and land application area monitoring. Data shall be presented in tabular format.
2. Daily pre-application inspection reports.
3. A comparison of monitoring data to the discharge specifications and applicable limitations and an explanation of any violation of those requirements.

4. Copies of laboratory analytical report(s).
5. Calibration log(s) verifying calibration of any field monitoring instruments (e.g., DO, pH, and EC meters) used to obtain data.
6. Daily discharge volumes and acres irrigated shall be tabulated, and the report shall include a discussion of the discharge volumes and irrigation practices used (method of application, application period/duration, drying times, etc.) for each check or group of checks utilized during the month. Hydraulic loading rates (inches/acre/month) shall be calculated.
7. Maximum daily BOD₅ loading rates (lbs/acre/day) shall be calculated for each disposal check using the total volume applied on the day of application, estimated application area, and a running average of the three most recent results of BOD₅ for the wastewater, which also shall be reported along with supporting calculations. Average BOD₅ loading rates shall be calculated using the total volume applied on the day of application, the total application period (i.e.: day of application and drying time), estimated application area on the day of application, and a running average of the three most recent results of BOD₅ for the applicable source water.
8. Total nitrogen loading rates (lbs/acre/month) shall be calculated for each irrigation check on monthly basis using the daily applied volume of wastewater, estimated daily application area, and the most recent results of total nitrogen, which shall also be reported along with supporting calculations.
9. Cumulative nitrogen loading rates for each irrigation check for the calendar year to date shall be calculated as a running total of monthly loadings to date from wastewater, supplemental fertilizers, and livestock.

B. Semi-annual Groundwater Monitoring Reports

The Discharger shall establish a semi-annual sampling schedule for groundwater monitoring such that samples are obtained approximately every six months. Semi-annual monitoring reports shall be submitted to the Board by the **1st day of the second month after the semi-annual event** (i.e. the January-June sampling event is due by August 1st) each year. The Semi-annual Report shall include the following:

1. Results of groundwater monitoring.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged.

3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any.
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements.
6. Summary data tables of historical and current water table elevations and analytical results.
7. A scaled map showing relevant structures and features of the facility, the disposal check boundaries, the locations of monitoring wells, and groundwater elevation contours referenced to mean sea level datum.
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be submitted to the Regional Board by **1 February** of each year. The Annual Report shall present a summary of all monitoring data obtained during the previous calendar year, and shall include the following.

1. If requested by staff, tabular and graphical summaries of all data collected during the year with data arranged to confirm compliance with the WDRs.
2. Tabular and graphical summaries of historical monthly total loading rates for water (hydraulic loading in gallons and inches), BOD, total nitrogen, and total dissolved solids.
3. A mass balance relative to constituents of concern and hydraulic loading along with supporting data and calculations.
4. An evaluation of the performance of the pretreatment system and land application sites.
5. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, and drying times) and groundwater monitoring data.
6. An evaluation of the groundwater quality at the facility.
7. A narrative description of tomato solids disposal practices.

8. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
9. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. The letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3. The Discharger shall implement the above monitoring program as of the date of this Revised MRP.

Ordered by: _____ Original signed by _____
PAMELA C. CREEDON, Executive Officer

August 24, 2011
(Date)

LLA:082211