

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
MONITORING AND REPORTING PROGRAM R5-2013-0144, REVISION NO. 2

FOR
MORNING STAR PACKING COMPANY, LP. AND FRED GOBEL
MORNING STAR TOMATO PACKING PLANT
COLUSA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring (a) the Cooling Pond, Settling Pond, and Storm Water Pond, (b) flow to the land application areas, (c) wastewater, (d) land application areas, (e) the groundwater, (f) residual solids, (g) silage operations, (h) odor, (i) the use of ADOX 750, and (j) tomato solids in ditches. This MRP is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

Central Valley Water Board staff shall approve specific sampling locations prior to any sampling activities. All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH, dissolved oxygen, electrical conductivity, and oxygen reduction potential) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments outlined in the Sampling and Analysis Plan;
2. The instruments are calibrated prior to each monitoring event;
3. 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 MRP.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the State Water Resources Control Board's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

POND MONITORING

Cooling Pond

The Cooling Pond shall be monitored for the following constituents during both the processing and non-processing season. Influent samples shall be measured at the last connection prior to waste entering the pond, and shall be collected for the entire processing season. Pond samples shall be collected from the northwest corner of the pond, both during the processing season and after the season ends (as detailed in the footnotes).

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
<u>Influent to the Pond:</u>				
Flow	Gallons	Flow Meter	Continuous	Monthly
BOD ₅ ¹	mg/L	Grab	Weekly during season	Monthly
Total Nitrogen	mg/L	Grab	Weekly during season	Monthly
TDS	mg/L	Grab	Weekly during season	Monthly
FDS	mg/L	Grab	Weekly during season	Monthly
<u>Pond Samples</u>				
Dissolved oxygen ²	mg/L	Grab	Daily/Monthly ³	Monthly
pH ²	pH units	Grab	Weekly/Monthly ⁴	Monthly
ORP ²	millivolts	Grab	Daily/Monthly ³	Monthly
Freeboard	0.1 feet	Measurement	Weekly/Monthly ⁴	Monthly
Odors	--	Observation	Weekly/Monthly ⁴	Monthly
Berm/levee condition	--	Observation	Monthly	Monthly
BOD ₅ ¹	mg/L	Grab	Weekly during season	Monthly
Total Nitrogen	mg/L	Grab	Weekly during season	Monthly
TDS	mg/L	Grab	Weekly during season	Monthly
FDS	mg/L	Grab	Weekly during season	Monthly

¹ 5-day, 20 degrees Celsius biochemical oxygen demand.

² Dissolved oxygen, pH, and oxygen reduction potential (ORP) samples shall be measured using a properly calibrated probe lowered to a depth of one foot below the water surface with the reading taken while the probe is submerged in the water.

³ Sample frequency shall be daily from the beginning of the processing season until one week after the season ends, and then monthly after that.

⁴ Sample frequency shall be weekly during the processing season and monthly during the non-processing season.

Settling Pond

The Settling Pond shall be monitored from the beginning of the processing season until it is drained. Samples shall be collected from the southwest corner of the pond. If the pond is dry, the monitoring report shall so note.

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
Dissolved oxygen ¹	mg/L	Grab	Daily	Monthly
pH ¹	pH units	Grab	Weekly	Monthly
ORP ¹	millivolts	Grab	Daily	Monthly
Freeboard	0.1 feet	Measurement	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Berm/levee condition	--	Observation	Monthly	Monthly
BOD ₅ ²	mg/L	Grab	Weekly	Monthly
Total nitrogen	mg/L	Grab	Weekly	Monthly
TDS	mg/L	Grab	Weekly	Monthly
FDS	mg/L	Grab	Weekly	Monthly
Date water entered pond		Observation	Daily	Monthly
Date pond was drained		Observation	Daily	Monthly
Date(s) solids removed		Observation	Daily	Monthly

¹ Dissolved oxygen, pH, and oxygen reduction potential (ORP) samples shall be measured using a properly calibrated probe lowered to a depth of one foot in the pond with the reading taken while the probe is submerged in the water.

² 5-day, 20 degrees Celsius biochemical oxygen demand.

Storm Water Pond

The Discharger shall conduct daily visual monitoring of the storm water pond located next to the Settling Pond. Inspections shall be conducted from one week prior to the start of the processing season until the Settling Pond is drained at the end of the season. If any water is present, the Discharger shall report the fact within 24 hours to Board staff, shall investigate the source, remove the water, and stop the discharge. Monthly monitoring reports shall document the inspections and any work completed in response to water found in the pond.

FLOW MONITORING

The Discharger shall monitor wastewater and supplemental irrigation water flows discharged to ditches and each individual land application area field as depicted on Attachment B as follows:

Flow Source	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency
Station 1 - Settling Pond discharge point, (includes plant sanitation and clean-up)	gallons	Meter	Daily ¹	Monthly, Annually
Station 2 - Cooling Pond discharge point	gallons	Meter	Daily ¹	Monthly, Annually
Supplemental irrigation water (GCID)	gallons	Calculation	Daily ^{1,2}	Monthly, Annually
Station 3 - Total discharge to LAAs	gallons	Meter	Daily ³	Monthly, Annually

¹ Report as total daily flow from the flow source to each LAA Field.

² Supplemental irrigation flow amounts shall be calculated based on total discharge minus Cooling Pond discharge minus Settling Pond discharge.

³ Includes all Settling Pond, plant sanitation/clean-up, Cooling Pond, and supplemental irrigation water discharged to the LAAs.

WASTEWATER MONITORING

Wastewater samples shall be collected from the flow metering Station 3 as shown on Attachment B and shall be representative of wastewater from the Settling Pond, Cooling Pond, plant sanitation and clean-up water prior to discharge to the land application areas. Sampling is not required during periods when no wastewater is discharged to the land application areas. At a minimum, wastewater monitoring shall include the following:

Constituents	Units	Type of Sample	Sample Frequency	Reporting Frequency
BOD ₅ ¹	mg/L	Grab	Twice Weekly/Weekly ²	Monthly
Chemical oxygen demand	mg/L	Grab	Twice Weekly/Weekly ²	Monthly
Brix	Degrees Bx	Grab	Twice Weekly/Weekly ²	Monthly
FDS	mg/L	Grab	Weekly	Monthly
Total nitrogen	mg/L	Grab	Weekly	Monthly

¹ 5-day, 20 degrees Celsius biochemical oxygen demand.

² Twice weekly (minimum of three days between samples) for the first month of processing, or longer as needed to determine a correlation between COD and BOD, as well as Brix and BOD. After that, the frequency can be weekly.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas **daily during operation**, and shall submit the results in the corresponding monthly monitoring reports. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. The report shall also document any corrective actions taken based on observations made.

The Discharger shall perform the following routine monitoring and loading calculations for each LAA field during all months when land application occurs, and shall present the data in the Monthly and Annual Monitoring Reports.

- If irrigation does not occur during a reporting period, the monitoring report shall so indicate.
- If the drying time between irrigation cycles is less than six days for an LAA field, the monitoring report shall provide an explanation.

Beginning 1 May 2017, flows to each LAA shall be monitored in accordance with the approved Field Flow Monitoring Plan. Until then, flows shall be monitored and reported as below.

<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 ¹	Daily	Monthly
Hydraulic loading rate (from each source)	in	Calculated ²	Daily	Monthly, Annually
BOD ₅ loading rate as an irrigation cycle ⁶ average (including Settling Pond solids, residual solids, manure and commercial fertilizers)	lb/ac/day	Calculated ^{3,4}	Daily	Monthly
Total nitrogen loading rate (including Settling Pond solids, residual solids, manure and commercial fertilizers)	lb/ac	Calculated ^{3,5}	Monthly	Monthly, Annually

¹ Data obtained from the nearest National Weather Service, California Irrigation Management Information System (CIMIS) (Station ID No. 32, Colusa), or on-site rain gauge is acceptable.

² Rate shall be calculated for each LAA field. Volumes can be estimated based on the duration of flow, the number of checks being irrigated at any one time, and the daily flow rates for each field. Calculations and assumptions shall be clearly documented.

- ³ Rate shall be calculated for each LAA field.
- ⁴ BOD₅ shall be calculated using the daily applied volume of wastewater (representative of Settling Pond, Cooling Pond, and plant sanitation/clean-up water), actual application area, average of the three most recent BOD₅ results for the wastewater, and the number of days per irrigation cycle. Loading rates for Settling Pond solids, residual solids, and supplemental nitrogen (including commercial fertilizers, manure from cattle, etc.) shall be calculated using the actual load and application area.
- ⁵ Total nitrogen loading rates shall be calculated using the applied volume of wastewater (representative of Settling Pond, Cooling Pond, and plant sanitation/clean-up water), actual application area, and average of the three most recent total nitrogen results for the wastewater. Loading rates for Settling Pond solids, residual solids, and supplemental nitrogen (including commercial fertilizers, manure from cattle, etc.) shall be calculated using the actual load and application area.
- ⁶ Irrigation cycle is defined as the time period between the start of the irrigation event for a single field and the start of the next irrigation event for the same field.

At least **once per week** when wastewater is being applied to the land application areas, the application areas in use shall be inspected to identify any equipment malfunction or other circumstance that might allow wastewater or irrigation runoff to leave each LAA and/or create conditions that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facility and summarized for submittal with the monthly monitoring reports.

APPLICABILITY OF GROUNDWATER LIMITATIONS

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new wells shall be added to the compliance monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well.

MW1¹ MW2² MW3² MW4¹ MW5³ MW6² MW7² MW8² MW9²

¹ Background well not used for compliance monitoring.

² Compliance well.

³ Currently identified as a background monitoring well. This classification may change pending new information from wells installed as required by the CDO.

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells tabulated below. This table is subject to revision by the Executive Officer following construction of any new compliance monitoring wells.

Constituent	Groundwater Limitation	Compliance Wells to which Limitation Applies
Nitrate nitrogen	10 mg/L ¹	MW2, MW-6, MW7, MW8
Nitrate nitrogen	Current Groundwater Quality ^{1,2}	MW3, MW9

Constituent	Groundwater Limitation	Compliance Wells to which Limitation Applies
Manganese	0.05 mg/L ¹	MW2, MW3, MW6, MW9
Manganese	Current Groundwater Quality ^{1,2}	MW7, MW8
All Others	Concentrations that exceed either the Primary or Secondary MCL.	MW2, MW3, MW6, MW7, MW8, MW9
All Others	Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.	MW2, MW3, MW6, MW7, MW8, MW9

¹ Compliance with this requirement shall be determined on an intrawell basis for each of the specified wells using approved statistical methods.

² "Current groundwater quality" means the quality of groundwater in the well as evidenced by monitoring completed as of the date of WDRs.

GROUNDWATER MONITORING

Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction. Analytical methods shall be selected to provide reporting limits below the Water Quality Limit for each constituent.

Purging and sampling methods must be approved in the Sampling and Analysis Plan required by Cease and Desist Order R5-2016-0007. Quarterly groundwater monitoring shall occur in the first (January – March), second (April – June), third (July - September), and fourth (October – December) quarter of each calendar year. At a minimum, the following data shall be collected from each current and future monitoring well during each monitoring event:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Depth to groundwater	0.01 feet	Measurement	Quarterly	Semi-annual
Groundwater elevation ¹	feet	Calculated	Quarterly	Semi-annual
Gradient magnitude	feet/feet	Calculated	Quarterly	Semi-annual
Gradient direction	degrees	Calculated	Quarterly	Semi-annual
pH ⁴	pH units	Grab	Quarterly	Semi-annual
Oxidation reduction potential ^{3,4}	millivolts	Grab	Quarterly	Semi-annual
Dissolved oxygen ^{3,4}	mg/L	Grab	Quarterly	Semi-annual
TDS	mg/L	Grab	Quarterly	Semi-annual

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
TKN	mg/L	Grab	Quarterly	Semi-annual
Nitrate nitrogen	mg/L	Grab	Quarterly	Semi-annual
Ammonia ³	mg/L	Grab	Quarterly	Semi-annual
Dissolved Iron ²	mg/L	Grab	Quarterly	Semi-annual
Dissolved Manganese ²	mg/L	Grab	Quarterly	Semi-annual

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

² Samples for metals shall be field filtered with a 0.45-micron filter prior to sample preservation.

³ Only required for MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and any other Cooling Pond wells installed per the CDO.

⁴ May be measured in the field using hand-held instruments providing that the probe is properly calibrated probe and that calibration records are submitted with the monitoring reports.

Groundwater Trigger Concentrations

The following groundwater trigger concentrations are intended only to serve as a means of assessing whether the discharge might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date.

Constituent	Compliance Wells	Trigger Concentration, mg/L
Total dissolved solids	MW2, MW3, new MWs ¹	700
Total dissolved solids	MW6, MW7, MW8, MW9, new MWs ¹	1,200
Iron	MW2, MW3, MW6, MW7, MW8, MW9, new MWs ¹	0.2

¹A newly installed compliance groundwater monitoring well.

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average of one or more of the trigger concentrations has been exceeded in any compliance well during the calendar year, the Discharger shall submit one or both of the following technical reports by **1 May of the following calendar year** (e.g., if one or more trigger concentrations are exceeded for calendar year 2020, the appropriate report is due by **1 May 2021**):

- a. A technical evaluation of the reason[s] for the concentration increase[s] and a technical demonstration on a constituent-by-constituent that, although the concentration has increased more than expected in one or more compliance wells, continuing the discharge without additional treatment or control will not result in exceedance of the applicable groundwater limitation.

- b. An Action Plan that presents a systematic technical evaluation of each component of the facility's waste treatment and disposal system to determine whether additional treatment or control is feasible for each waste constituent that exceeds a trigger concentration. The plan shall evaluate each component of the wastewater treatment, storage, and disposal system (as applicable); describe available treatment and/or control technologies; provide preliminary capital and operation/maintenance cost estimates for each; designate the preferred option[s] for implementation; and specify a proposed implementation schedule. The schedule for full implementation shall not exceed one year, and the Discharger shall immediately implement the proposed improvements.

RESIDUAL SOLIDS MONITORING

The Discharger shall monitor the residual solids generated and disposed of on a monthly basis. The following shall be monitored and reported:

1. Volume of Solids Generated. Solids may include pomace, seeds, stems, diatomaceous earth, screenings, pond solids, and sump solids, or other material.
2. Volume Disposed of Off-site. Describe the disposal method (e.g. animal feed, land application, off-site composting, landfill, etc.); the amount disposed (tons); and the name of the hauling company.
3. Volume Disposed of On-site. Describe the amount disposed (tons); location of on-site disposal (e.g. land application area field); method of application, spreading, and incorporation; application rate (tons/acre), and weekly grab sample analysis for total nitrogen.

Results of the residual solids monitoring shall be included in the monthly monitoring.

SILAGE MONITORING

On a monthly basis, the Discharger shall inspect all areas involved in the mixing or storage of silage as described below.

1. **Operations area:** Perform monthly inspections of the working surfaces, berms, ditches, erosion best management practices, and any other operational surface. Identify the presence or absence of:
 - a. Cracking or subsidence in the working surfaces;
 - b. Ponding liquid over the working surfaces or within ditches;
 - c. Effectiveness of erosion control Best Management Practices (BMPs);
 - d. Maintenance activities associated with working surfaces, berms, ditches, and erosion control BMPs;

- e. Evidence of any water or wastewater leaving or entering the facility, estimated size of affected area, and estimated flow rate. Affected areas shall be shown on a map; and
 - f. Integrity of drainage system during the wet season.
2. **Wastewater Management System:** Perform monthly inspections of the wastewater management system to identify the presence or absence of:
- a. The overall condition of the wastewater management system;
 - b. The available capacity within the storage systems and the current volume of wastewater;
 - c. Presence of odors from the wastewater management system. Include characterization, source, and distance observable; and
 - d. Volume of wastewater discharged and location of discharge.

Results of the monthly field inspections of the operations area and the wastewater management system shall be included in the monthly monitoring reports. Photographs of observed and corrected deficiencies shall be included in the reports.

Silage Wastewater Monitoring

The Discharger shall monitor the wastewater associated with the silage operations on a monthly basis. At a minimum, the following data shall be collected.

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
pH	pH Units	Grab	Monthly	Monthly
Dissolved oxygen	mg/L	Grab	Monthly	Monthly
BOD ₅ ¹	mg/L	Grab	Monthly	Monthly
Total nitrogen	mg/L	Grab	Monthly	Monthly
Total dissolved solids	mg/L	Grab	Monthly	Monthly
Fixed dissolved solids	mg/L	Grab	Monthly	Monthly

¹ 5-day, 20 degrees Celsius biochemical oxygen demand.

ODOR MONITORING

Between 1 June and 1 October of each year, the Discharger shall conduct real-time odor monitoring in accordance with the *Odor Identification and Mitigation Plan* required by Cease and Desist Order R5-2016-0007 and approved by Board staff. The results of the odor monitoring shall be submitted with the monthly monitoring reports. The reports shall include odor plume maps and a discussion of odors attributable to the processing

facility and land application areas. If odors are present, then the report shall also describe the physical improvements that Morning Star took in response to reduce/prevent the odors. If sodium chlorite (ADOX 750) was used to control odors, then the report shall include a discussion of why Morning Star was not able to implement a non-chemical solution to prevent odors.

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
Odors	Odor units (e-noses)	Sensor	Continuous	Monthly

SODIUM CHLORITE (ADOX 750) MONITORING

The Discharger shall document the use of sodium chlorite (ADOX 750) at the facility during each month. At a minimum, the Discharger shall report: date applied, specific location applied to, volume applied, reason for application, and why a non-chemical solution to mitigate odor was not implemented. When used, effluent samples (from the same pond or ditch to which the chemical was applied) must be collected within 30 minutes of the initial application of the chemical. The samples shall be analyzed for TDS and FDS. Use of ADOX must be included in the calculations to determine compliance with the FDS loading limit.

TOMATO SOLIDS IN DITCHES

Whenever there is wastewater present in the Settling Pond, the Discharger shall conduct daily inspections of all irrigation ditches and shall record whether or not tomato solids are present. If solids are present, the Discharger shall immediately remove the solids and dispose of them appropriately. The results of all inspections and removal activities shall be submitted with the monthly monitoring reports. The reports shall document when and where the tomato solids were disposed of.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and 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 Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

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 Registered Professional Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in the monthly monitoring reports. Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Tabulated monitoring data and/or additional information as required by the Cooling Pond, Settling Pond, Storm Water pond, and Wastewater sections of the MRP. For the Wastewater results, include tabulated correlations between Brix and BOD, and between COD and BOD.
2. For the Flow Monitoring section: submit tabulated daily flow measurements from each wastewater source and supplemental irrigation water to each LAA field. Include the cumulative annual wastewater (Station 1 and Station 2) flow discharged to the LAAs to date, the average daily flow for the month, and comparison to the average daily flow limit.
3. Results of the Land Application Area Monitoring, including:
 - a. Tabulated land application area monitoring data for each LAA field, including; calculation of the hydraulic loading, irrigation cycle average BOD loading, and total nitrogen loading to date from all sources. The average of the three most recent monitoring results shall be used to determine irrigation cycle average BOD and total nitrogen loading. Loading rates for Settling Pond solids, residuals solids, cattle manure and commercial fertilizers shall be calculated separately using actual load analytical results and application areas.
 - b. An Excel spreadsheet that shows the BOD loading calculations for each irrigation cycle and field. This spreadsheet shall be cumulative for the year, and at a minimum, shall include the following columns: field irrigated, dates of irrigation, BOD concentration (based on three most recent results), estimated flow, BOD loading (lb/day), irrigation acreage, irrigation cycle in days, resting time between cycles, and BOD loading rate (lb/ac/day). The spreadsheet shall also include text documenting that the BOD loading rates were calculated as specified by Effluent Limitation C.2.b of the WDRs. All BOD results shall be used in the BOD loading calculations, even if samples are collected more frequently than once per week. If the drying time for any

irrigation cycle is less than 6 days, then the transmittal cover letter of the applicable monthly monitoring report shall explain why there was a shorter drying time.

- c. Documentation, including daily field logs, describing how the flow to each field was determined.
 - d. A summary of the daily pre-application inspection reports for the month.
4. A current site plan depicting the irrigation checks within each LAA field that will be used during the calendar year, including all water conveyance ditches and internal berms that divide each LAA (where applicable).
 5. Tabulated cropping information for each LAA field that includes at least:
 - a. The crop that will be grown in each field;
 - b. Planned and actual planting dates;
 - c. Planned and actual harvest dates;
 - d. Planned and actual cattle grazing schedule, location of cattle grazing, including the number of head on each field.
 - e. Typical maximum expected and actual yield at harvest in applicable crop units per acre;
 - f. Crop total nitrogen demand; and
 - g. Crop average evapotranspiration rate in inches.
 6. For the Residual Solids Monitoring: all information described in the Reporting section, including the monthly mass of residual solids generated and applied to each LAA field and/or disposed of off-site
 7. For the Silage Monitoring: All information described in the Reporting section, including: (a) results of the monthly inspections of the working surfaces, berms, ditches, erosion best management practices, and other operational surfaces, (b) results of the monthly inspections of wastewater management system, and (c) tabulated results of the silage wastewater samples.
 8. For the Odor Monitoring: Odor Monitoring shall be conducted from 1 June to 1 October each year, and results submitted with the monitoring reports submitted from 1 August through 1 December (or sooner if requested by staff due to complaints). The reports shall include odor plume maps along with a discussion

of odors attributable to the processing facility and land application areas. If odors are present, then the report shall also describe physical improvements that were taken to reduce/prevent the odors. If ADOX 750 was used to control odors, then the report shall have a discussion of why the Discharger was not able to implement a non-chemical solution to prevent odors.

9. For the Sodium Chlorite Monitoring: If sodium chlorite (ADOX 750) was used during the monitoring period, each report shall include the following information: date applied, specific location applied to, volume applied, reason for application, and why a non-chemical solution to mitigate odor was not implemented. The report shall also contain the results of the samples that were collected, and a description of the location for the samples and why this was an appropriate location.
10. For the Tomato Solids in Ditches Monitoring: Results of daily inspections of the irrigation ditches, including the presence or absence of any tomato solids in the ditches, and a description of activities associated with removal and disposal of the tomato solids, if applicable.
11. Calculation of the flow-weighted average FDS concentration to date (representative of the Settling Pond, Cooling Pond, and plant sanitation/clean-up water) as monitored at Station 3. Calculations shall be made as required by Effluent Limitation C.1.a of the WDRs. Each monitoring report shall include an Excel spreadsheet showing how the flow-weighted FDS concentration was calculated, and how the ADOX salt load was included in the calculations.
12. A comparison of monitoring data to the flow limitations, effluent limitations; mass loading limitations (for each LAA field), and discharge specifications, and an explanation of any violation of those requirements.
13. Copies of laboratory analytical report(s).
14. Copies of current calibration logs for all field test instruments.

B. Semi-Annual Monitoring Reports

The Discharger shall establish a sampling schedule for groundwater monitoring such that samples are obtained during the first, second, third, and fourth quarter of each calendar year and obtained approximately every three months. Semi-Annual Groundwater Monitoring Reports which include the quarterly sampling results shall be submitted to the Central Valley Water Board by the **1st day of the second month after the semi-annual period** (i.e., the January-July semi-annual report is due by 1 September each year). The monitoring report shall include the following:

1. Results of the quarterly monitoring of the groundwater in tabular format. The analytical result tables shall include the laboratory PQL for each analyte for each sampling event. A result of "0.0" is not acceptable and shall instead be replaced with "ND <" and the PQL. Any "J" flagged values shall be reported. Results shall be reported exactly as presented on laboratory reports; values shall not be rounded.
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, determination 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. Summary data tables of historical and current groundwater elevations;
5. A scaled map showing relevant structures and features of the facility, land application areas, locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
6. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Monitoring Report

An Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year and shall include the following:

1. A description of the following work conducted after the end of the processing season:
 - a. Irrigation/tailwater ditch draining procedures prior to the release of storm water runoff from the LAAs;
 - b. Inches of total precipitation between dates of last discharge and first off-site release of storm water runoff from the LAAs; and
 - c. Draining and cleaning of the Settling Pond, including the date, disposal method and location of off-site and/or on-site disposal.
2. Total annual flow measurements from each wastewater source and supplemental

irrigation water to the LAAs for the calendar year and comparison to the annual maximum flow limit.

3. Flow-weighted annual average FDS concentration from the Settling Pond, Cooling Pond, and plant sanitation/clean-up water for the calendar year with supporting data and calculations and comparison to the effluent limit. Each monitoring report shall include an Excel spreadsheet showing how the flow weighted FDS concentration was calculated, and how the ADOX salt load was included in the calculations. Calculations shall be made as required by Effluent Limitation C.1.a of the WDRs.
4. Total hydraulic loading rate and total nitrogen loading rate applied to each LAA field for the calendar year with supporting data and calculations and comparison to crop evapotranspiration rate and nitrogen demand.
5. A nitrogen mass balance (from all sources) for the calendar year with supporting data and calculations. Include description of the types of crops planted and dates of planting and harvest for each crop. For each LAA field used for pasture, include description of the number of grazing cattle, start and finish dates of grazing operations, agricultural practices of the pasture land including types of crops planted, and total nitrogen applied and comparison to the loading limits of the WDRs. If the mass balance indicates that nitrogen has been applied in excess of the agronomic rate, include a discussion of any corrective action performed during the year and a detailed plan and schedule for additional corrective actions that will be implemented to ensure future compliance with the land application area specifications of the WDRs.
6. Concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range, the trigger concentration specified above (where applicable), and the Groundwater Limitation as horizontal lines at the applicable concentration.
7. An evaluation of the groundwater quality beneath the site and determination of whether any trigger concentrations were exceeded in any compliance well at any time during the calendar year. This shall be determined by comparing the annual average concentration for each well during the calendar year to the corresponding trigger concentration specified above. If any groundwater trigger concentrations were exceeded, include acknowledgment that the technical report described in the Groundwater Trigger Concentrations section of this MRP will be submitted in accordance with the specified schedule.
8. An evaluation of the groundwater quality beneath the site and determination of Compliance with Groundwater Limitation E.1 of the WDRs based on statistical

analysis for each constituent monitored for each compliance well in accordance with the approved *Groundwater Limitations Compliance Assessment Plan*. Include all calculations and data input/analysis tables derived from use of statistical software as applicable.

9. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
10. A discussion of the following:
 - a. Waste constituent reduction efforts implemented in accordance with any required workplan;
 - b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order; and
 - c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.
11. 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 signature.

Ordered by: _____ Original signed by _____
PAMELA C. CREEDON, Executive Officer
5 May 2016

(Date)