



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

27 July 2012

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CLEANUP AND ABATEMENT ORDER R5-2012-0712, CITY OF LIVINGSTON INDUSTRIAL WASTEWATER TREATMENT FACILITY (WDID 5C24010600, RM 376868), LIVINGSTON, MERCED COUNTY

The enclosed Cleanup and Abatement Order is issued pursuant to Water Code sections 13267 and 13304, and requires that Foster Poultry Farms and City of Livingston (collectively referred to as "Dischargers") investigate the discharge of wastes from the old ponds, cleanup the wastes, and abate the effects of the discharge of wastes, including to soil and/or groundwater at the old City of Livingston Industrial wastewater treatment facility, Livingston, Merced County.

Initial tasks in Order R5-2012-0712 include the requirements that the Dischargers submit a groundwater assessment workplan by 27 September 2012 and that monitoring and reporting be conducted in accordance with Monitoring and Reporting Program R5-2012-0712 (also enclosed). The schedule for completion of dredging of the ponds specifies 31 December 2013 for Ponds 10, 11, and 12.

If you have any questions about the technical aspects of the Order, please contact Jan Alfson at (559) 488-4345. In addition, please contact Jan Alfson at least 72 hours in advance of all significant field work to allow staff an opportunity for direct regulatory oversight.

WARREN W. GROSS
Senior Engineering Geologist
EG 1528, CHG 681

Enclosures: Order R5-2012-0712
MRP R5-2012-0712

cc: Merced County Environmental Health Department, Merced
Donna Kenney, City of Livingston, 1416 C Street, Livingston, CA 95334
Lee Morse, Condor, 1739 Ashby Road, Suite B, Merced, CA 95348

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

1685 E Street, Fresno, CA 93706 | www.waterboards.ca.gov/centralvalley

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER R5-2012-0712
FOR
CITY OF LIVINGSTON
AND
FOSTER POULTRY FARMS
CITY OF LIVINGSTON INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

This Order is issued to the City of Livingston and Foster Poultry Farms, a California corporation, hereafter collectively referred to as "Dischargers", pursuant to Water Code section 13304, which authorizes the California Regional Water Quality Control Board, Central Valley Region, ("Central Valley Water Board" or "Board") to issue a Cleanup and Abatement Order ("CAO"), and pursuant to Water Code section 13267, which authorizes the Central Valley Water Board to require the preparation and submittal of technical and monitoring reports.

The Executive Officer finds, with respect to the Discharger's acts or failure to act, the following:

PROPERTY OWNERSHIP AND OPERATIONS

1. From 1963 to December 2010, the City of Livingston (the "City") operated a wastewater treatment and disposal facility that consisted of a series of unlined ponds (the "Ponds"). Treated effluent was discharged to nearby cropland (the "Disposal Area") owned by Foster Poultry Farms, a California corporation ("Foster Farms"). The Ponds are immediately south of the Merced River, one mile north of the City of Livingston, Merced County, in Township 6 South, Range 11 East, Sections 14 and 23, MDB&M. The City still owns the Ponds.
2. Wastewater treated and disposed of in the Ponds was solely from a chicken-processing complex owned and operated by Foster Farms. Foster Farms reimbursed the City for the operation and maintenance of the Ponds.
3. Foster Farms started operation of its new wastewater treatment facility on 22 December 2010. Wastewater is no longer discharged to the Ponds. The new Foster Farms facility is regulated under Waste Discharge Requirements (WDRs) Order R5-2009-0086.

BACKGROUND

4. The Ponds consist of 12 interconnected, treatment and effluent storage/disposal ponds (Ponds 1 through 12) encompassing 83 acres. Ponds 1 and 2 are reported to have partial or complete concrete liners while the remaining ponds are unlined. Ponds 1 through 9 are within the Merced River floodplain and Ponds 10, 11, and 12 are on a terrace at an elevation 25 to 35 feet above the other ponds. Influent was split at the headworks and routed through two parallel treatment trains. The first train consisted of Ponds 1 (aerated), 3, 8, and 6. The second train consisted of Ponds 2 (aerated), 4, 5, and 7. Effluent from Pond 6 could be directed to Pond 7 which in turn discharged to Ponds 9 through 12 for storage and disposal. Discharges from the Ponds to the Disposal Area occurred from either Pond 6 or 12.



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5. A sufficient quantity of treated water from the new Foster Farms wastewater treatment plant is kept in the Ponds, which are no longer in use, to cover accumulated sludge.
6. On 27 July 1979, the Central Valley Water Board adopted WDRs Order 79-178 for Foster Farms to authorize the reclamation of Facility effluent on its Discharge Area.
7. On 23 September 1979, the Central Valley Water Board adopted WDRs Order 79-209 to regulate discharges to the Ponds. WDRs Order 79-209, issued to the City, authorizes a monthly average daily wastewater flow of up to 3.5 million gallons per day (mgd) and states, in part, the following:
 - "A. Waste Discharge Specifications
 1. Neither the treatment nor the discharge shall cause a nuisance or pollution as defined in the California Water Code.
 2. The discharge shall not cause degradation of any water supply."
8. On 4 August 2000, Central Valley Water Board staff issued the City a Notice of Violation (NOV) for, in part, violations and threatened violations of WDRs Order 79-209, Waste Discharge Specifications A.1 and A.2.
9. On 26 October 2006, the Central Valley Water Board issued Cease and Desist Order R5-2006-0112 (the "CDO") to the City. The CDO stated that the City had violated WDRs Order 79-209 by causing impacts to groundwater in excess of the nitrate water quality objective, thereby creating a condition of pollution. The CDO also stated that four treatment ponds contained excessive accumulations of sludge characterized by high concentrations of nitrogen constituents. The CDO found that approximately 30% of the wastewater discharged to the Facility's unlined ponds percolates to groundwater. The CDO established a time schedule for the City to construct a Facility Upgrade Project by 15 January 2009.
10. On 31 January 2008, Foster Farms submitted a Report of Waste Discharge in support of its new treatment plant and discharge to approximately 223 acres owned by Foster Farms within the existing Disposal Area.
11. On 13 August 2009, the Central Valley Water Board adopted WDRs Order R5-2009-0086 for Foster Farms' new treatment plant and for its discharge to the Disposal Area. The new treatment system and Disposal Area are to the east and southeast of the Ponds. WDRs Order R5-2009-0086 authorizes a monthly average discharge flow of 3.77 mgd and an average maximum daily discharge flow of 5.0 mgd, and establishes, in part, monthly average effluent limitations of: 40 mg/L each for 5-day biochemical oxygen demand (BOD₅) and total suspended solids; 10 mg/L for total nitrogen; and 175 mg/L for chloride. The Foster Farms wastewater treatment facility became operational in December 2010.
12. Foster Farms submitted a Pond Maintenance and Closure Plan dated 23 April 2008. The plan details tasks for remediation and closure of the Ponds.

WASTE CHARACTERIZATION

13. Sludge from treatment of wastewater has accumulated in the Ponds with thickness varying from 1.2 feet to 4.5 feet, as measured in 2008. A composite sample of the sludge collected in 2007 had a total Kjeldahl Nitrogen concentration of 16,000 milligrams per kilogram and a total dissolved solids concentration of 17,000 milligrams per kilogram. These concentrations threaten groundwater beneath the Ponds.
14. Groundwater samples from monitoring wells near the Ponds had a maximum total nitrogen concentration of 91 milligrams per liter in July 2010 and a maximum nitrate as nitrogen concentration of 37.2 milligrams per liter. The groundwater samples had total dissolved solids concentrations up to 810 milligrams per liter. Maximum concentrations of total nitrogen and total dissolved solids in background wells BK-1 and BK-2 were 20.7 and 474 milligrams per liter (mg/L), respectively. Total coliform was found at greater than 23 MPN (most probable number) per 100 milliliters in samples from three of the monitoring wells.

SITE-SPECIFIC CONSIDERATIONS

15. Land uses in the discharge vicinity are primarily agricultural and light industrial. Residential housing is located within approximately 1,500 feet of the Ponds.

GROUNDWATER CONSIDERATIONS

16. WDRs Order 79-209 requires the City to monitor first-encountered groundwater under and around the Ponds. The City operates a network of nine shallow wells installed adjacent to or in the vicinity of the Ponds. WDRs Order 93-091 requires Foster Farms to monitor first-encountered groundwater affected by its effluent reclamation ponds. Foster Farms also operates a network of 10 shallow wells installed within or adjacent to reclamation fields comprising the Disposal Area. Both well networks are shown on Attachment A, which is attached hereto and made part of this Order by reference.
17. Quarterly groundwater elevation contour maps submitted by Foster Farms utilize elevation data from both networks and are prepared by Condor Earth Technologies, Inc. The maps typically show groundwater mounding under Area 5 in the Disposal Area, which is where Foster Farms historically impounded effluent in three ponds. Groundwater beneath the Facility generally flows in a northwesterly to northerly direction towards the Merced River.
18. Organic nitrogen and ammonia in wastewater percolating through the vadose zone can convert to nitrate in the soil profile and groundwater. In this Order, the term "ammonia" covers both the nonionized form (NH_3) and the ammonium cation (NH_4^+). Organic nitrogen converts to ammonia, which is oxidized by certain bacteria to nitrate in a process that requires the presence of dissolved oxygen. Bacterial denitrification converts nitrate to nitrogen gas in a process that requires the presence of a carbon source, as well as low concentrations of dissolved oxygen. If not sufficiently attenuated in the vadose zone, organic nitrogen, ammonia, and nitrate will cause groundwater impacts.

19. Average values of constituent concentrations based on data collected from January through July 2010 for select wells in the City's network are presented in the table below (note, units for all values are mg/L except where noted). Reported concentrations of total organic carbon (TOC), ammonia, TKN (total Kjeldahl nitrogen), nitrate, total dissolved solids (TDS), sodium, chloride, iron, and manganese in groundwater are elevated compared to background wells BK-1 and BK-2, indicating groundwater has been impacted by the Ponds.

<u>Constituent</u>	<u>MW-3</u>	<u>MW-5</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-9</u>	<u>MW-10</u>	<u>BK-1</u>	<u>BK-2</u>
TOC	2.9	3.2	3.1	3.0	0.7	1.7	na	na
Ammonia-N	9.3	55	21	23	0.2	1.1	na	na
TKN	11.0	74	28	29.3	<1	1.4	<1	1.06
Nitrate-N	0.3	<0.2	<0.2	<0.2	44	50.4	20.7	7.52
EC (uS/cm)	1,405	2,312	1,482	1,645	550	1167	684	356
TDS	693	747	703	700	423	783	474	263
Sodium	126	143	141	158	23	115	20.1	17.1
Chloride	125	120	120	136	21.7	136	10.0	4.45
Iron	4.96	14.3	----	0.9	<0.1	0.07	<0.1	<0.1
Manganese	4.20	7.02	8.34	5.41	0.08	6.57	<0.02	<0.02

milligrams per liter n.a. – not analyzed

20. Monitoring data indicates Pond operations have caused groundwater to contain elevated concentrations of decomposable waste constituents (i.e., ammonia and organic carbon). Once groundwater flows offsite and mixes with unaffected oxygenated groundwater, the ammonia will eventually convert to nitrate, which will continue to degrade groundwater quality.

LEGAL AUTHORITY FOR CLEANUP AND REPORTING

21. Water Code section 13304(a) states that:

Any person ... who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts.

22. Water Code section 13267(b)(1) states that:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of

having discharged or discharging, or who proposes to discharge waste within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

23. Water Code section 13304(c)(1) states that:

... the person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of the waste within the meaning of subdivision (a), are liable to that government agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial actions. . .

24. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised September 2009 (the "Basin Plan") designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference, plans and policies adopted by the State Water Resources Control Board ("State Water Board").
25. The Ponds lie within the San Joaquin River Basin. The Basin Plan designates the beneficial uses of groundwater as including municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply, and industrial process supply (IND).
26. The Basin Plan contains a narrative water quality objective for chemical constituents which requires, in part, that groundwater not contain chemical constituents in concentrations that adversely affect any beneficial use. For groundwater that is designated MUN, the Basin Plan incorporates by reference drinking water maximum contaminant levels ("MCLs") promulgated in Chapter 15 of the California Code of Regulations, title 22 ("Title 22"). The following constituents have numeric MCLs associated with them, and these numeric MCLs implement the narrative WQO for chemical constituents:

Constituent	Limits (mg/L)	WQO	Reference
Nitrate-N	10	Chemical	Primary MCL, Title 22

27. The Basin Plan also establishes other narrative water quality objectives (e.g., for bacteria, chemical constituents, tastes and odors, and toxicity). Chapter IV of the Basin Plan contains the Policy for Application of Water Quality Objectives, which provides that

"[w]here compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Regional [Water] Board will, on a case-by-case basis, adopt numerical limitations in Orders which will implement the narrative objectives."

28. Narrative water quality objectives prohibit chemical constituents from being discharged at concentrations that would impact agricultural uses in groundwater designated as supporting the AGR beneficial use, and prohibit taste- or odor-producing substances from being discharged at concentrations that would cause nuisance or adversely affect beneficial uses.
29. Ammonia is a chemical constituent that, when present in elevated concentrations, affects the odor and taste of water to a degree that its use for MUN is impaired. Upper limits (in mg/L) established by various entities for ammonia odor and taste are listed in the table below. These limits are relevant and appropriate to this discharge situation.

<u>Limit (mg/L)</u>	<u>Reference</u>
1.5	Odor threshold (<i>Hazardous Substances Data Bank: Ammonia</i> . Bethesda, MD, National Library of Medicine, 1990)
35	Proposed taste threshold (<i>Guidelines for Drinking Water Quality</i> , 2 nd ed. Vol. 2 <i>Health criteria and other supporting information</i> . World Health Organization)

30. Water Code section 13050(l)(1) defines pollution as "an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses."
31. A comparison of average well data (Finding 19) to the limits that implement the narrative water quality objectives (Findings 26 and 29) indicates that waste constituents discharged by Foster Farms and the City have created a condition of pollution for ammonia and nitrate and are threatening to create a condition of pollution for iron, manganese, total dissolved solids, chloride, and sodium. Additional data is necessary to characterize background groundwater quality, particularly with respect to chloride, iron, manganese, sodium, total dissolved solids, and total organic carbon. This information will help the Board evaluate the extent to which the discharge has degraded groundwater.
32. The State Water Board has adopted Resolution No. 92-49 (*The Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304*) ("Resolution 92-49"). Resolution 92-49 sets forth the policies and procedures to be used during an investigation and cleanup of a polluted site, and requires that cleanup levels be consistent with State Water Board Resolution No. 68-16 (*The Statement of Policy with Respect to Maintaining High Quality of Waters in California*) ("Resolution 68-16"). Resolution 92-49 requires the waste to be cleaned up in a manner that promotes attainment of either background water quality or the best water quality which is

reasonable if background levels of water quality cannot be restored. Any alternative cleanup level to background must: (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Water Board.

Resolution 92-49 directs that investigation proceed in a progressive sequence.

Resolution 92-49 generally requires that written work plans for each element and phase of the investigation and cleanup be submitted to the Board for its review, and also directs the Board to require the submittal of written reports that describe the results of each phase of the investigation and cleanup.

33. Chapter IV of the Basin Plan also contains a policy for the Investigation and Cleanup of Contaminated Sites. The strategy generally outlines a process that includes site investigation, source removal or containment, information requirements for the consideration of establishing cleanup levels, and a basis for establishing soil and groundwater cleanup levels.
34. California Code of Regulations, title 23, sections 3890 through 3895 require that the Dischargers submit analytical data electronically via the internet using electronically deliverable formats (EDF) designated by the State Water Board that are both non-proprietary and available as public domain. All EDF data must be submitted over the internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker). In addition, section 3895(b) allows the Central Valley Water Board to specify submittal in alternative forms provided the benefit or need for it bears a reasonable relationship to the burden of producing it.

DISCHARGER LIABILITY

35. As described in the above Findings, the Dischargers are subject to an order pursuant to Water Code section 13304 because the Dischargers have violated waste discharge requirements established in WDRs Order 79-209 and have discharged or deposited waste and caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution. Discharges occurred during the time that the Dischargers owned and/or operated the Site, and these discharges have resulted in a condition of pollution. The condition of pollution is a priority violation and the issuance of a cleanup or abatement order pursuant to Water Code section 13304 is appropriate and consistent with policies of the Central Valley Water Board.
36. As described in the above Findings, the Dischargers are subject to an order pursuant to Water Code section 13267 to submit technical reports because existing data and information about the Site indicate that waste has been discharged, is discharging, or is suspected of discharging, at the property, which is or was owned and/or operated by the Dischargers named in this Order. The technical reports required by this Order are necessary to assure compliance with the Basin Plan, Resolution 92-49, and this Order, which require the prompt identification and abatement of waste sources and the

investigation and cleanup of affected areas to protect the beneficial uses of waters of the state, to protect against nuisance, and to protect human health and the environment.

37. The issuance of this Order is an enforcement action by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13304 and 13267, Foster Poultry Farms and the City of Livingston; their agents, assigns, and successors, shall take cleanup and abatement actions as specified below:

1. Forthwith, investigate the discharges of waste, cleanup the waste, and abate the effects of the discharge of waste to soil and groundwater, in conformance with Resolution 92-49 and with the Basin Plan (in particular the Policies and Plans listed within the Control Action Considerations portion of Chapter IV). "Forthwith" means as soon as is reasonably possible without risk to health and safety. Staff, when referenced below, means Central Valley Water Board technical staff. Compliance with this requirement shall include, but not be limited to, completing the tasks listed below.
2. Remediate the former wastewater treatment ponds as proposed in the Foster Farms Pond Maintenance and Closure Plan dated 23 April 2008 (prepared by Condor Earth Technologies Inc.). The Discharger shall provide proof to the Board that it has obtained a Sludge Application Site Permit prior to disposing of the sludge in Merced County, or will submit a Report of Waste Discharge to the Central Valley Water Board to obtain regulatory coverage for the discharge of the sludge. The Discharger shall provide quarterly progress reports on the closure of the ponds, with the reports due on the last day of the first month following the end of each quarter. Completion of dredging of each pond shall be in accordance with the following schedule:
 - Ponds 10, 11, 12 31 December 2013
 - Ponds 5,7. 31 December 2014
 - Ponds 2,4 31 December 2015
 - Ponds 6,8 31 December 2016
 - Ponds 1,3,9 31 December 2017
3. Submit a technical report **within 60 days of issuance of the CAO** that describes a work plan to conduct a groundwater assessment. The area to be investigated shall include groundwater influenced by discharges of wastes to the ponds. The work plan needs to include a time schedule for completing the assessment in a reasonable amount of time. The assessment work plan shall include work to:
 - i. Evaluate the adequacy of the existing groundwater monitoring well networks for characterizing upgradient groundwater uninfluenced by discharges of wastes to

the Ponds and for estimating the lateral and vertical extent of groundwater influenced by the discharge,

- ii. Characterize upgradient groundwater uninfluenced by the discharge for waste constituents of concern (i.e., ammonia, chloride, iron, manganese, nitrate, sodium, total dissolved solids, total nitrogen, and total organic carbon).
- iii. Determine the lateral and vertical extent of waste constituents of concern in groundwater that exceed background quality if the exceedance is potentially caused by the Discharger.
- iv. Provide a site history of any lands which have received discharges currently and in the past. Include APNs and acreage for each parcel and identify any parcel for which the APN or boundary line has been changed. Provide a site map that identifies the individual parcels, total acreage and acreage utilized.

The technical report shall satisfy the information requirements set forth in Attachment B of this Order, which is attached hereto and made part of this Order by reference. Well design, construction, and destruction shall comply with appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94 81 (December 1981), and any more stringent standards adopted by Merced County pursuant to Water Code section 13801.

4. Within 30 days of staff concurrence with the Assessment Work Plan, but no later than 60 days from submittal of the plan, implement the work plan in accordance with the time schedule as approved or directed by the Executive Officer, which shall become part of this Order. The submitted report shall include, at a minimum, the items outlined in Attachment C of this Order. The technical report shall describe the distribution in groundwater of waste constituents of concern, identify groundwater gradients, and include graphs and contours where beneficial for interpretation and understanding of the situation. Where degradation is reported to be in part or whole from other sources, the technical report shall provide reasoning and evidence that supports such a conclusion. The technical report shall include a recommendation for additional investigation and ongoing monitoring, as appropriate.
5. Upon a determination by the Executive Officer that the investigation of lateral and vertical extent in groundwater of waste constituents of concern is complete, submit a technical report by a date to be specified by the Executive Officer that evaluates remedial action and cleanup alternatives and proposes an appropriate cleanup system.
6. Continue investigation, cleanup and abatement activities under this Order until such time as the Executive Officer determines that the Discharger has complied with the Order.

GENERAL REQUIREMENTS

The Dischargers shall:

7. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, have reports prepared by, or under the supervision of, a registered professional engineer or geologist and signed by the registered professional. All technical reports submitted by the Discharger(s) shall include a cover letter signed by the Discharger(s), or an authorized representative, certifying under penalty of law that the signer has examined and is familiar with the report and that to their knowledge, the report is true, complete, and accurate. The Discharger(s) shall also state whether they agree with any recommendations/proposals and whether they approved implementation of said proposals.
8. Conduct work only after Central Valley Water Board staff concurs with the proposed work.
9. Notify Central Valley Water Board staff at least three working days prior to any onsite work, testing, or sampling that pertains to environmental remediation and investigation and is not routine monitoring, maintenance, or inspection.
10. Obtain all local and state permits and access agreements necessary to fulfill the requirements of this Order prior to beginning the work.
11. Maintain a sufficient number of monitoring wells to completely define and encompass the above waste plume(s). If groundwater monitoring indicates the waste in groundwater has migrated beyond laterally or vertically defined limits during the quarter, then the quarterly monitoring reports must include a work plan and schedule, with work to begin within thirty days of Central Valley Water Board staff approval, to define the new plume limits.
12. Comply with Monitoring and Reporting Program R5-2012-0712, which is attached to and made part of this Order. A violation of Monitoring and Reporting Program R5-2012-0712 is a violation of this Order.
13. Reimburse the Central Valley Water Board for reasonable costs associated with oversight of the investigation and remediation of the Site, as provided in Water Code section 13304(c) (1). Failure to reimburse the Central Valley Water Board's reasonable oversight costs shall be considered a violation of this Order.

If, for any reason, the Dischargers are unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the Dischargers may request, in writing, an extension of the time specified. The extension request shall include justification for the delay. An extension may be granted by revision of this Order or by a letter from the Executive Officer.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

This Order is effective upon the date of signature.


for PAMELA C. CREEDON, Executive Officer
7/27/12
(Date)

Attachments

- A Location Map – Facility, Disposal Area, and Groundwater Monitoring Wells
- B Information Requirements for Site Assessment Work Plan
- C Information Requirements for a Site Assessment Report

ATTACHMENT B

INFORMATION REQUIREMENTS FOR SITE ASSESSMENT WORK PLAN

The outline below is a minimum requirement for items to be included and discussed in the text of the technical report describing a Site Assessment Work Plan submitted to the Central Valley Water Board pursuant to Order Paragraph 3 of the cleanup and abatement order. Other pertinent information specific to the investigation also should be included. The work plan must be certified by a geologist, engineering geologist, or civil engineer registered by the State of California.

I. BACKGROUND

A. Site History

1. State all operations conducted at the site.
2. Identify current and historic chemical usage, handling and disposal procedures.
3. Describe current and historic wastewater discharges to the Facility and Disposal Area with respect to hydraulic loadings and waste constituent loadings.

B. Map of site vicinity showing:

1. All natural and man-made surface waters including ditches and surface impoundments;
2. Locations of existing monitoring wells, including those installed by other parties;
3. Locations of private, municipal, or irrigation wells within 2,500 feet of the Facility and Disposal Area; and
4. Other major physical and man-made features.

C. Area Land Uses. Describe current and historical land use of overlying and surrounding land. For agricultural land uses, identify current and historical crop types, cropping patterns, and irrigation methods (furrow, sprinkler, drip), source(s) of irrigation water, and methods for controlling shallow groundwater.

II. GEOLOGY/HYDROGEOLOGY

- A. Provide detailed summaries of previous technical reports evaluating the geology and hydrogeology of the discharge site.
- B. Describe aquifer characteristics, velocity and direction of regional groundwater movement.
- C. Provide groundwater contour maps of the discharge vicinity representative of discharge conditions. Depict flow nets on the maps that show flow patterns. If groundwater elevation data exhibits seasonality, provide contour maps representative of each major season.

- D. Present a conceptual model of the hydrogeologic system within the area impacted or potentially impacted by discharges of waste to the Facility and the Disposal Area. The model must reasonably simulate the hydraulic situation, in part, by accounting for all significant hydraulic inputs, outputs, and barriers. Irrigation and drinking water wells likely affect the model as well, influencing gradients and providing conduits for poor quality surface water to reach deeper groundwater zones. The model must successfully address the dynamics of the aquifer system influenced by discharges of waste constituents by the Discharger and other sources in order to provide the context for evaluating compiled groundwater elevation and quality data.
- E. Provide annual water balances formulated on a monthly basis representative of discharge conditions. Each water balance must indicate inflows (i.e., Facility influent, precipitation) and outflows (i.e., evaporation, deep percolation, and discharge to the Disposal Area), show formulas for and sample calculations of each type of calculated value, and provide references or technical justification for input values, as appropriate.
- F. Provide annual mass balances representative of discharge conditions. Provide mass balances for, at a minimum, chloride, iron, manganese, sodium, total dissolved solids, and total nitrogen. Each mass balance must show formulas for and sample calculations of each type of calculated value, and provide references or technical justification for input values, as appropriate.
- G. Estimate the lateral and vertical extent of the portion of the aquifer(s) impacted by the discharge (e.g., the limits at which the effects of the discharge(s) cannot be distinguished from the regional aquifer's quality and flow patterns). Include an evaluation of the adequacy of the existing groundwater monitoring wells network for estimating the lateral and vertical extent of groundwater influenced by the discharge.
- H. Data Gaps. Identify data gaps and information needs that affect the opinions, evaluations, and recommendations of the registered civil engineer or geologist that will conduct the site assessment. Include recommendations for additional groundwater monitoring wells to perform a complete site assessment.

III. PROPOSED GROUNDWATER MONITORING WELLS.

This section shall contain, at a minimum, the following information:

- A. Proposed monitoring well locations and rationale for well locations
- B. Drilling Details:
 - 1. On-site supervision of drilling and well installation activities
 - 2. Description of drilling equipment and techniques
 - 3. Equipment decontamination procedures
 - 4. Cuttings disposal methods

5. Soil sampling intervals (if appropriate); logging methods; number and location of soil samples and rationale; and sample collection, preservation, and analytical methods.

C. Monitoring Well Design (in graphic form with rationale provided in narrative form):

1. Diagram of proposed well construction details

- i. Borehole diameter
- ii. Casing and screen material, diameter, and centralizer spacing (if needed)
- iii. Type of well caps (bottom cap either screw on or secured with stainless steel screws)
- iv. Anticipated depth of well, length of well casing, and length and position of perforated interval
- v. Thickness, position and composition of surface seal, sanitary seal, and sand pack
- vi. Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

1. Method of development to be used (i.e., surge, bail, pump, etc.)
2. Parameters to be monitored during development and record keeping technique
3. Method of determining when development is complete
4. Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

1. Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
2. Datum for survey measurements
3. List well features to be surveyed (i.e., top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

- G. Appendix: Groundwater Sampling and Analysis Plan (SAP). The Groundwater SAP, a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities, shall contain, at a minimum, a detailed written description of standard operating procedures for:

1. Equipment to be used during sampling
2. Equipment decontamination procedures
3. Water level measurement procedures
4. Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
5. Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
6. Purge water disposal
7. Analytical methods and required reporting limits
8. Sample containers and preservatives
9. Sampling. General sampling techniques. Record keeping during sampling (include copies of record keeping logs to be used). Quality Assurance/Quality Control samples.
10. Chain of Custody
11. Sample handling and transport

ATTACHMENT C
INFORMATION REQUIREMENTS FOR A
SITE ASSESSMENT REPORT

The outline below is a minimum requirement for items to be included and discussed text of the technical report describing the results of the first phase of Site Assessment submitted to the Central Valley Water Board pursuant to Order Paragraph 4 of the cleanup and abatement order. Other supporting data to be included in the report, either within the text of the report or in appendices, are italicized at the end of each section. The report must be certified by a geologist, engineering geologist, or civil engineer registered by the State of California.

I. INTRODUCTION

Summary of past investigations
Purpose of the recent investigation
Scope of the recent investigation
Time period in which the recent investigation was carried out
Topographic map showing facility location, roads, surface water bodies

II. SUMMARY

Number of wells drilled
Results of soil and water analyses
Groundwater contour map(s) showing flow direction and gradient

III. FIELD INVESTIGATION

Well Construction
Number and depth of wells drilled
Date(s) wells drilled
Description of drilling and construction equipment and techniques
Description of on-site supervision of drilling and well installation activities
Drilling contractor and driller's name
Large-scaled site map showing all previously existing wells, newly installed well wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and other major physical and man-made features relative to discharge site(s)

Supporting Data:

A well construction diagram for each newly installed well showing the following details:

Total depth drilled
Depth of open hole (same as total depth drilled if no caving occurs)
Footage of hole collapsed
Length of slotted casing installed
Depth of bottom of casing
Depth to top of sand pack
Thickness of sand pack
Depth to top of bentonite seal
Thickness of bentonite seal
Thickness of concrete grout
Sanitary seal thickness and location in addition to bentonite seal, as appropriate
Boring diameter
Casing diameter

Casing material
Size of perforations
Number of bags of sand
Well elevation at top of casing
Depth to first encountered groundwater and stabilized groundwater depth
Date of water level measurement
Monitoring well number
Date drilled and constructed
Type of well caps (bottom cap either screw on or secured with stainless steel screws)

Well Development

Date(s) of development of each newly installed well
Method of development
Volume of water purged from well
How well development completion was determined
Method of purge water disposal
Well Completion Report(s) (as defined in California Water Code §13751). Blank forms are available from California Department of Water Resources' website www.water.ca.gov. Submit Well Completion Report(s) under separate cover.

Supporting Data:

Field notes from well development and County-issued well construction permit(s)

Well Survey (provide for each newly installed well)

Reference elevation at the top rim of the well casing with the cap removed (feet above mean sea level to within 0.01 foot)
Ground surface elevation (feet above mean sea level to within 0.01 foot)
Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum, or acceptable alternative (provide rationale)
Present the well survey report data in a table

Water Sampling

Date(s) of sampling
How well was purged
How many well volumes purged
Levels of temperature, EC, and pH at stabilization
Sample collection, handling, and preservation methods
Sample identification
Analytical methods used

Soil Sampling (if applicable)

Date(s) of sampling
Sample collection, handling, and preservation method
Sample identification
Analytical methods used

IV. FINDINGS OF THE INVESTIGATION

Lithology

Types of sediments encountered

Detailed description of soils encountered during well drilling, using the Unified Soil Classification System

Presence, location, and lateral continuity of any significant sand, silt, or clay layers

Any visual signs of contamination

Supporting Data:

Well logs geologic cross-sections

Analytical Results of Soil and Groundwater Sampling

Tabular summary of analytical results of each monitoring well sampled

Supporting Data:

Laboratory analytical sheets

Chain-of-custody forms

Water Levels

Static water levels measured when well drilled

Date(s) of water level measurements

Water levels determined prior to sampling

Supporting Data:

Dates of water level measurement, depths to ground water, and groundwater elevations should be tabulated and included in the report.

Groundwater Gradient and Flow Direction

Discuss groundwater gradient and flow direction determined by the investigation and compare to the regional gradient and flow direction.

Supporting Data:

Provide a groundwater contour map, drawn to scale, which shows each well, its groundwater elevation, and lines of equal ground water elevation. Show on map the groundwater gradient and flow direction.

Provide supporting calculations for determining groundwater gradient.

Groundwater constituent concentration maps for, at a minimum, ammonia, chloride, iron, manganese, nitrate, sodium, total nitrogen, total dissolved solids, and total organic carbon.

Conceptual Model Refinement

Compare the conceptual model developed as part of the site assessment work plan against the field investigation findings.

Describe a modified conceptual model that incorporates the new findings, as appropriate

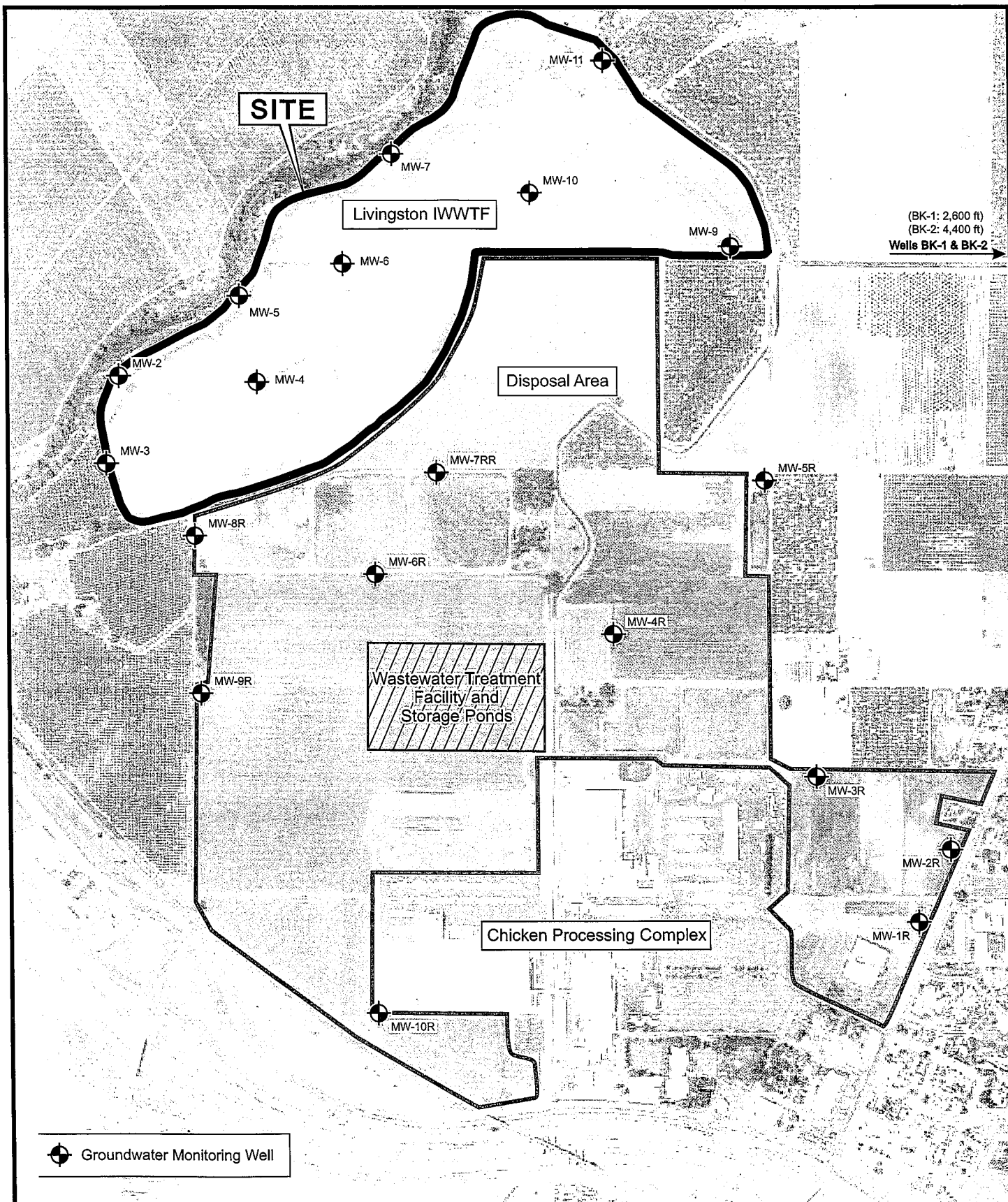
V. RESULTS OF QA/QC (Quality Assurance/Quality Control)

QA/QC procedures
Equipment decontamination procedures
QC sample identification
Field blank analyses
Comparison of duplicate sample results

VI. CONCLUSIONS AND RECOMMENDATIONS

Extent of Impacted Groundwater

- Identify groundwater gradients, describe vertical and lateral extent of groundwater containing waste constituents attributed or potentially attributed to the discharge in concentrations (a) above background and (b) above water quality objectives identified in the cleanup and abatement order, and include graphs and contours where beneficial for interpretation and understanding of the situation.
- Identify any suspected contributing source(s) of waste constituents in groundwater, if possible, and provide reasoning and evidence that supports such identification.
- Recommend additional investigation and ongoing monitoring, as appropriate.



FACILITY MAP

ORDER NO. R5-2011-0701

CLEANUP & ABATEMENT

FOR

CITY OF LIVINGSTON & FOSTER POULTRY FARMS
LIVINGSTON INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2012-0712 FOR
CITY OF LIVINGSTON
AND
FOSTER POULTRY FARMS
LIVINGSTON INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

Compliance with this Monitoring and Reporting Program (MRP) is required pursuant to the California Water Code section 13267 as ordered by Cleanup and Abatement Order R5-2012-0712 (CAO). Failure to comply with this program constitutes noncompliance with the CAO and California Water Code, which can result in the imposition of civil monetary liability. All sampling and analyses shall be by USEPA approved methods. The test methods chosen for detection of the constituents of concern shall be subject to review and concurrence by the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board).

The MRP replaces MRP 79-209 and its revisions.

The Dischargers shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

A complete list of substances which are tested for and reported on by the testing laboratory shall be provided to the Central Valley Water Board. All peaks must be reported. In addition, both the method detection limit and the practical quantification limit shall be reported. Detection limits shall equal or be more precise than USEPA methodologies. Water samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by a California Department of Health Services certified laboratory.

The Dischargers shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Central Valley Water Board.

LEVEE MONITORING

The Discharger shall perform monthly visual inspections of the river levee protecting the facility and shall note the location of liquid seepage or threatened seepage on the surface of the levee slopes. If liquid is observed ponding or flowing over the ground surface, the volume and/or flow rate shall be estimated and noted in the logbook, and a sample taken and tested for ammonia, nitrate, nitrite, chloride, pH, EC, chemical oxygen demand (COD), and standard minerals. The Discharger shall notify the Board immediately upon discovery on the levee's surface of any liquid seepage or threatened seepage. Further, the Discharger shall summarize the observations noted on any seep, spring, or boil as well as any lab analyses performed in the quarterly monitoring report.

SLUDGE MONITORING

The Discharger shall measure and report on sludge in the former ponds as follows:

1. Perform annual sludge survey to determine the depth of the sludge blanket in Ponds 1 through 12. The depth of the sludge blanket shall be determined using a sludge depth finder such as a "sludge judge" at a sufficient number of locations to properly characterize the depth of sludge blanket in each pond. The month selected by the Discharger to perform this survey shall remain the same from year to year.
2. Measure and report the annual progress from removing sludge from Ponds 1 through 12, in complying with sludge removal requirements of the CAO.

SURFACE WATER MONITORING

All surface water samples shall be grab samples from the two monitoring stations described below.

<u>Station</u>	<u>Description</u>
R-1a	100 feet downstream from the confluence of the Livingston Canal Overflow and the Merced River.
R-2a	1000 feet downstream of the downstream edge of Pond 5.

Surface water sampling shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Stations</u>	<u>Frequency</u>
Stage	feet	S-2	Quarterly
7-day average flow	cfs	Merced River at Cressey	Quarterly
EC	umhos/cm	R-1a, R-2a	Quarterly
pH	pH Units	R-1a, R-2a	Quarterly
Dissolved Oxygen	mg/L	R-1a, R-2a	Quarterly
Temperature	°C	R-1a, R-2a	Quarterly
BOD ₅	mg/L	R-1a, R-2a	Quarterly
TKN	mg/L	R-1a, R-2a	Quarterly
Ammonia (as N)	mg/L	R-1a, R-2a	Quarterly
Nitrate (as N)	mg/L	R-1a, R-2a	Quarterly
Minerals Analysis	mg/L	R-1a, R-2a	Quarterly

INFLUENT MONITORING

Influent samples shall be collected at a point in the system following treatment and before Discharge to Ponds 1 through 12. Time of collection of the sample shall be recorded. Influent monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
pH	pH units	grab	Weekly
EC	umhos/cm	grab	Weekly
Nitrate as N	mg/L	24-hour composite	Weekly
TKN	mg/L	24-hour composite	Weekly
Total Nitrogen	mg/L	computed	Weekly
BOD ₅	mg/L	24-hour composite	Monthly

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
TSS	mg/L	24-hour composite	Monthly
TDS	mg/L	24-hour composite	Monthly
FDS	mg/L	24-hour composite	Monthly
Chloride	mg/L	24-hour composite	Monthly
General Mineral	mg/L	24-hour composite	Annual

POND MONITORING

Permanent markers shall be in place with calibrations indicating the water level at design capacity and available operational freeboard. The freeboard shall be monitored on all ponds to the nearest tenth of a foot. Monitoring shall include at least the following for Ponds 1 through 12.

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Influent Flow	Acre-feet	Metered	Monthly
Freeboard	feet	Observation	Monthly
Pond Conditions ¹	n/a	Observation	Monthly

¹ Pond conditions include whether sludge is submerged, any nuisance conditions present such as odors or vectors, other nuisance conditions.

GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. The groundwater surface elevation (in feet and hundredths, M.S.L.) shall be measured in all monitoring wells and used to determine the gradient and direction of groundwater flow. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume. Water levels shall be measured and wells sampled at the same time as groundwater monitoring is conducted at the adjacent Foster Poultry Farms wastewater treatment facility.

The Discharger shall monitor all wells in its Groundwater Monitoring Network, and any additional wells installed pursuant to this MRP, for the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly
Groundwater Elevation	Feet ²	Computed	Quarterly
pH	pH Units	Grab	Quarterly
EC	µmhos/cm	Grab	Quarterly
Dissolved Oxygen (field)	mg/L	Grab	Quarterly
Nitrate as N	mg/L	Grab	Quarterly
Ammonia	mg/L	Grab	Quarterly
TKN	mg/L	Grab	Quarterly

MONITORING AND REPORTING PROGRAM R5-2012-0712
CITY OF LIVINGSTON AND FOSTER POULTRY FARMS
LIVINGSTON INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

-4-

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Total Nitrogen		mg/L	Quarterly
Phosphorus	mg/L	Grab	Quarterly
Arsenic	ug/L	Grab	Quarterly
Iron	ug/L	Grab	Quarterly
Manganese	ug/L	Grab	Quarterly
Total Organic Carbon	mg/L	Grab	Quarterly
Total Coliform Organisms	MPN/100 mL	Grab	Quarterly
General Minerals ³	mg/L	Grab	Quarterly

¹ To nearest hundredth of a foot

² To nearest tenth of a foot above Mean Sea Level

³ General mineral analysis to consist of calcium, magnesium, sodium, potassium, bicarbonate, carbonate, chloride, sulfate, TDS, EC, pH, hardness, fluoride.

*Instrument calibration logs shall be included in the monitoring reports
ug/L – micrograms per liter

MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted or parameters and locations removed or added by the Executive Officer if site conditions indicate that the changes are necessary.

REPORTING REQUIREMENTS

1. The Dischargers shall report all monitoring data and information as specified herein. Reports that do not comply with the required format will be REJECTED and the Dischargers shall be deemed to be in noncompliance with the Monitoring and Reporting Program.
2. Quarterly monitoring and remediation system reports shall be submitted to the Central Valley Water Board according to the schedule below.

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 30
April – June	July 31
July – September	October 31
October – December	January 31

Each quarterly report shall include the following minimum information:

- (a) data from and a summary of all monitoring as required by the MRP.
- (b) an update on the status of remediation of the former ponds.

- (c) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, and how and when samples were collected.
 - (d) field logs that contain, at a minimum, water quality parameters including pH, EC, and dissolved oxygen measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
 - (e) groundwater elevation contour maps including data from the adjacent Foster Poultry Farm wastewater treatment facility;
 - (f) isocontour pollutant concentration maps for ammonia, nitrate, and total dissolved solids;
 - (g) a table showing well construction details such as well number, ground surface elevation, reference elevation, elevation and depth of screen, seal, filter pack, and well bottom;
 - (h) a table showing historical flow directions and gradients;
 - (i) cumulative data tables containing the water quality analytical results and depth to groundwater;
 - (j) a copy of all laboratory analytical data reports for the monitoring period;
 - (i) results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program or at other locations at the site;
 - (j) field monitoring well sampling sheets shall be completed for each monitoring well sampled;
 - (k) a summary of any spills/releases that occurred during the quarter and tasks undertaken in response to the spills/releases;
 - (l) an update and status on each of the outstanding tasks required by the CAO or Executive Officer;
 - (m) a map showing all wells on the facility.
3. In reporting the monitoring data, the Discharger's shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements. All data shall be submitted in electronic form in a form acceptable to the Regional Water Board.
4. The Dischargers shall submit an annual report by January 31 of each year for the preceding year. The report can be combined with the Dischargers' fourth quarter report. The report shall contain:
- a. Both tabular and graphical summaries of all data obtained during the year;
 - b. An in-depth evaluation of groundwater conditions at the site including short and long-term trends of the constituents of concern in each area of the site;

- c. An evaluation of the effectiveness of the groundwater monitoring network in delineating the lateral and vertical extent of impacts to groundwater in all affected areas of the site. This should include an identification of any data gaps and potential deficiencies in the monitoring system or reporting program. The report shall include recommendations to address any deficiencies in the monitoring and report program.
 - d. A summary of all spills/releases, if any, that occurred during the year, tasks undertaken in response to the spills, the results of the tasks undertaken.
5. The Dischargers shall maintain a database containing historical and current monitoring data in an electronic form acceptable to the Executive Officer. The data base shall be updated quarterly and provided to the Regional Water Board in electronic format.
6. The Dischargers shall submit electronic copies of all workplans, reports, analytical results, and groundwater elevation data over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) at <http://geotracker.swrcb.ca.gov>. Electronic submittals shall comply with GeoTracker standards and procedures as specified on the State Water Board's web site. In addition, a hardcopy of each document shall be submitted to the Regional Water Board at 1685 E Street, Fresno, CA. 93706, attention Cleanup Unit.

Ordered by:

Clay L. Rodgers
for PAMELA C. CREEDON, Executive Officer

7/27/12
(Date)