

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0007

CEASE AND DESIST ORDER
REQUIRING
LAKE COUNTY SANITATION DISTRICT
KELSEYVILLE COUNTY WATER WORKS DISTRICT NO. 3
LAKE COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The Regional Water Quality Control Board, Central Valley Region, (hereafter referred to as “Regional Board”) finds that:

1. Waste Discharge Requirements (WDRs) Order No. 99-094, adopted by the Regional Board on 11 June 1999, prescribes requirements for the Lake County Sanitation District, Kelseyville County Water Works District No. 3 (hereafter referred to as “Discharger”).
2. The Discharger’s wastewater treatment facility is near the town of Kelseyville, in Section 11, T13N, R9W, MDB&M, while the disposal facilities are 2.5 miles away in Section 13, T13N, R9W, MDB&M.

Treatment Facility

3. The wastewater system serves most of the town of Kelseyville and portions of the surrounding areas. The wastewater system provides secondary treatment of a dry weather flow of 0.26 million gallons per day (mgd) of domestic wastewater with effluent disposal to a series of evaporation/percolation ponds or for use as irrigation supply water.
4. The wastewater system consists of three facultative ponds, a chlorine feed and contact system, and a fourth hydraulic pond. From these ponds, the wastewater is pumped to a remote disposal site consisting of a series of seven evaporation/percolation ponds and an irrigation area. A small portion of the wastewater is also used to irrigate approximately five acres of vineyard owned by Mr. Michael Fowler (regulated by WDRs Order No. 99-070).

Violations of Waste Discharge Requirements

5. Discharge Specification No. B.2 of WDRs Order No. 99-094 states: “*The monthly average dry weather discharge flow shall not exceed 0.26 million gallons per day (mgd).*”
6. Monthly self-monitoring reports for the dry weather season between June 2000 and August 2004 show that the average dry weather flows (May through October) range from 0.196 mgd in the year 2001 to 0.237 mgd in the year 2003. These flows comply with the WDR’s dry weather flow limit.
7. The WDRs do not contain a wet weather flow limit. However, since January of 2001, the wastewater collection system has consistently experienced wet weather flows in excess of its wet weather flow design capacity of 0.20 mgd. Monthly self-monitoring reports for the wet weather

periods between January 2001 and April 2004 show that the average wet weather wastewater flows range from 0.256 mgd in the year 2001 to 0.333 mgd in the year 2004. Average wet weather flows have been consistently greater than 0.20 mgd and have increased annually during this time period.

8. Discharge Specification No. B.4 of the WDRs states: *“As a means of discerning compliance with Discharge Specification No. B.3, the dissolved oxygen content in the upper zone (1 foot) of wastewater ponds shall not be less than 1.0 mg/L.”* Monthly self-monitoring reports from June 2000 through August 2004 indicate that dissolved oxygen measurements were less than 1 mg/L on eight weekly occasions. The Discharger is required to take monthly measurements at a minimum, but typically measures the dissolved oxygen on a weekly basis.
9. Discharge Specification No. B.5 of the WDRs states: *“Ponds shall not have a pH less than 6.5 or greater than 8.5.”* Monthly self-monitoring reports for June 2000 through August 2004 indicate that effluent pH measurements have chronically exceeded a pH of 8.5; with pH measurements ranging from 7.12 to 10.26, and exceeding 8.5 a total of 113 times. The Discharger is required to take monthly measurements at a minimum, but typically measures the pH on a weekly basis.
10. Discharge Specification No. B.7 of the WDRs states: *“A minimum 1.0 freeboard shall be maintained in the ponds at all times.”* Monthly self-monitoring reports for February 2001 through April 2004 show that weekly pond freeboard measurements have ranged from 0.1 feet to 3.8 feet. During this period, freeboard was measured at less than 1-foot 89 times during wet weather months. Pond freeboard was also reported at less than 1-foot in February 2001 and from 19 February to 9 April 2004. On 27 and 28 February 2004, the Discharger installed sandbags around the perimeter of Pond Nos. 3 and 4 to prevent a wastewater overflow. The Discharger has indicated that sand bags have also been installed around the ponds in the past.
11. Discharge Prohibition A.1 of WDRs Order No. 99-094 states: *“The direct discharge of wastes to surface waters or surface water drainage courses is prohibited.”*
12. On 6 December 2003, a 270-gallon raw sewage spill occurred at 4031 Gray Stone Court in Kelseyville. The spill was the result of a grease blockage in the 6-inch main sewer line that caused a discharge of raw sewage through a cleanout and into a drainage ditch along 3rd Street. The spill report indicated that the discharge did not enter surface waters. The District stated that it would investigate installation of an additional manhole, annual line cleaning would be conducted, and a public education program about grease and grease disposal would be implemented.
13. Monitoring and Reporting Program No. 99-094 requires that the Discharger collect samples from the one on-site well located at the evaporation/percolation ponds on a quarterly basis. However, staff’s review indicates that groundwater sampling has not been conducted since 1993 due to insufficient water in the well to collect samples.
14. On 14 July 2004 the Discharger submitted notification that the Kelseyville County Water Works District No. 3 Wastewater Treatment Facility was experiencing capacity problems which have resulted in emergency measures including the sandbagging of two ponds to create additional temporary storage and prevent overflow. Numerous monthly self-monitoring reports indicate that the facility is operating at, or exceeding, the designed treatment capacity for wet weather flows. To

address the capacity issue, the Discharger states that a consultant will conduct an Inflow/Infiltration study during the 2004/2005 budget year. The Discharger also plans to apply for a Small Communities Grant, Water Recycling Grant, and State Revolving Fund loan in 2004/2005 to fund the necessary upgrades to the facility.

15. On 4 August 2004, the County of Lake Department of Health Services Environmental Health Division issued a Compliance Order to Lake County Sanitation District for insufficient treatment and storage capacity during the winter season. This Compliance Order states: *“Pursuant to Section 5412 of the California Health and Safety Code, the local Health Officer hereby orders the District to take any and all action necessary to secure funding and complete design and construction improvements to the Kelseyville System to prevent any further discharges and to adequately, dependably and safely operate the treatment plant.”*

Regulatory Considerations

16. As a result of the events and activities described in this Order, the Regional Board finds that the Discharger has caused or permitted waste to be discharged in such a manner that it has created, and continues to threaten to create, a condition of pollution or nuisance. The Regional Board also finds that the Discharger has discharged, and has the potential to discharge, waste in violation of WDRs No. 99-094.
17. Surface water drainage from the facility is to Cole Creek and then to Clear Lake. The beneficial uses of Clear Lake, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.
18. Section 13301 of the California Water Code states in part: “When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action.”
19. Section 13267(b) of the California Water Code states: “ 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, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters 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.”
20. The technical reports required by this Order are necessary to assure compliance with WDR Order No. 99-094 and to assure protection of public health and safety. The Discharger operates the facility that discharges the waste subject to this Order.

21. 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, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations.
22. On 27 January 2005, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Regional Board conducted a public hearing at which evidence was received to consider a Cease and Desist Order.
23. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, CA, 95812-0100, within 30 days of the date on which the Regional Board action took place. Copies of the law and regulations applicable to filing petitions are available at www.swrcb.ca.gov/water_laws/index.html and also will be provided upon request.

IT IS HEREBY ORDERED that pursuant to Sections 13301 and 13267 of the California Water Code, Lake County Sanitation District, its agents successors, and assigns, shall implement the following measures necessary to ensure long-term compliance with WDRs No. 99-094, or any superceding permits or orders issued by the Regional Board.

Any person signing a document submitted under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

1. The Discharger shall **immediately** comply with all aspects of WDRs Order No. 99-094.
2. By **1 March 2005**, the Discharger shall submit and implement an emergency contingency plan to prevent unauthorized discharges of wastewater during the wet weather months of 2005. The plan shall consider options including, but not limited to: operational adjustments to draw down pond levels in Pond Nos. 3 and 4, sandbagging the pond berms, trucking of effluent to another properly permitted facility, or other temporary measures to prevent discharges.
3. By **1 September 2005**, the Discharger shall submit and implement a short-term contingency plan to prevent unauthorized discharges of wastewater until all long-term measures have been implemented. The plan shall consider options including, but not limited to: diversion of surface runoff away from ponds, enhanced evaporation, trucking of effluent to another properly permitted facility, water conservation measures, reduction of inflow/infiltration, or any other measures to prevent discharges.
4. By **1 September 2005**, the Discharger shall submit an *Inflow and Infiltration (I/I) Assessment Report* that describes the results of the Discharger's I/I evaluation of the collection system, and

describes the repairs which must be completed to reduce I/I to industry standards. The report shall also include a proposed schedule for these repairs.

5. By **1 December 2005**, the Discharger shall submit a *Long Term Wastewater Master Plan* that describes the facility improvements needed to:
 - a. Increase overall storage and disposal capacity as necessary to comply with a 100-year total annual precipitation event;
 - b. Provide enough wastewater storage and disposal capacity for current flows, as well as growth projected over the next 15 years;
 - c. Prevent sanitary sewer overflows;
 - d. Comply with pond freeboard requirements in the WDRs;
 - e. Maintain a pH between 6.5 and 8.4 in each of the wastewater ponds; and
 - f. Ensure that the dissolved oxygen content in the upper zone (1 foot) of wastewater ponds is not less than 1.0 mg/L.

The *Long Term Wastewater Master Plan* shall include a water balance for both the current inflow and projected flows through at least the year 2020, and shall clearly show the times of the year when wastewater must be stored versus when it may be applied to land. The water balance shall evaluate the storage ponds' ability to provide sufficient capacity to maintain two feet of freeboard on a month-by-month basis. The water balance shall include monthly evaporation, precipitation, and percolation rates, and shall identify contributions from major sources to monthly discharge volumes such as subsurface inflows, stormwater run-on, and any inflow and infiltration from the collection system. Rainfall shall be based on the 100-year return period total annual precipitation.

The *Long Term Wastewater Master Plan* shall include a proposed timeline for all improvements.

6. **Within 60 days of staff's written approval** of the *Long Term Wastewater Master Plan*, the Discharger shall submit a *Report of Waste Discharge* (RWD) to allow WDRs to be revised to reflect the proposed upgrades. The RWD consists of the Form 200 (*Application for Report of Waste Discharge*) and a technical report that addresses all items listed in Attachment A to this Order, "*Additional Information Requirements for a Report of Waste Discharge.*"
7. By **1 July 2006**, the Discharger shall submit a *Revenue Plan* that describes the costs associated with making the necessary improvements to the collection, treatment storage and disposal system to ensure continuous compliance with WDRs Order No. 99-094. The plan shall show whether the District has the necessary funds to implement the improvements. Should the Revenue Plan show that there are inadequate funds, the District must also include an implementation schedule that shows how the Discharger will raise the funds.
8. By **1 July 2006**, the Discharger shall submit a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan) that describes the actions designed to prevent, or minimize the potential for sanitary sewer overflows. The Discharger shall maintain the SSS Plan in an up-to-date condition and shall amend the SSS Plan whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for sanitary sewer overflows. The Discharger shall ensure that the

up-to-date SSS Plan is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

At a minimum, the Operation and Maintenance portion of the plan shall contain or describe the following:

1. Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;
2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
3. A schedule for routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
4. Provisions for repair or replacement of old, worn out, or defective equipment; and
5. Provisions to minimize the need for manual operation of critical systems and provide spill alarms or other "fail safe" mechanisms.

At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:

1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;
 2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows;
 3. Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and to minimize the adverse effects of sewer overflows on water quality and beneficial uses;
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported; and
 5. A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Lake County Environmental Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified
9. By **1 December 2007**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan* prepared in accordance with, and including the items listed in, the first section of Attachment B "*Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports.*" The workplan shall describe the locations of existing wells, data on the groundwater flow direction, and installation of additional wells to adequately characterize background water quality and potential groundwater impacts from the wastewater storage and

discharge. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost water bearing zone and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment B, including a Groundwater Sampling and Analysis Plan.

10. **By 1 May 2008**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment B.
11. **Beginning 1 May 2005**, and by the first day of the second month following each calendar quarter (**i.e., by 1 February, 1 May, 1 August, and 1 November each year**), the Discharger shall submit a progress report describing the work completed to date regarding each of the reporting requirements described above.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.

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 or may issue a complaint for administrative civil liability.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 January 2005.

THOMAS R. PINKOS, Executive Officer

Attachments:

Additional Information Requirements for a Report of Waste Discharge
Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports

ATTACHMENT A
ADDITIONAL INFORMATION REQUIREMENTS
FOR A REPORT OF WASTE DISCHARGE
LAKE COUNTY SANITATION DISTRICT
KELSEYVILLE COUNTY WATER WORKS DISTRICT NO. 3

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

1. A narrative description of all wastewater conveyance, treatment, and disposal systems currently existing at the facility.
2. A narrative description of all planned physical improvements, their purpose, and anticipated completion dates. If phased build out is planned provide scope and completion dates for each phase.
3. A process flow diagram, scaled treatment plant site plan, and scaled map(s) showing all existing and proposed effluent disposal areas (including conveyance and tailwater control systems).
4. For each pond and other waste containment structure, provide the following information. Discuss both existing and proposed ponds:
 - a. Identification (name) and function of the pond;
 - b. Surface area, depth, and volumetric capacity at two feet of freeboard;
 - c. Height (relative to surrounding grade), crest width, interior slope, and exterior slope of each berm or levee;
 - d. Materials used to construct each berm or levee;
 - e. Description of engineered liner, if any;
 - f. Estimated steady state percolation rate for each unlined pond;
 - g. Depth to shallow groundwater below the planned base of the ponds;
 - h. Overfilling/overflow prevention features; and
 - i. Operation and maintenance procedures.
5. For each reclamation site, provide:
 - a. Complete ownership information.
 - b. A scaled map showing the topography, property boundary, streets, residences, surface waters, etc. A USGS topo map may be sufficient as a base map.
 - c. A scaled map showing the limits of the reclamation areas, reclaimed water conveyance systems, other irrigation water conveyance systems, on-site drainage, tailwater systems, and runoff controls (existing and proposed).
 - d. Net irrigation area.
 - e. Method(s) of irrigation, including typical frequency and depths of application for each month when irrigation will occur.

- f. Typical cropping practices (crops grown, rotation cycles, use of fertilizers and pesticides, etc.).
- g. Typical storm water management practices.
6. A description of the sources and types of wastewater flowing into the wastewater treatment system, design flow rates, and the design capacity of the system (existing and proposed). Include projected infiltration/inflow rates and peaking factors used in design calculations.
7. A description of emergency wastewater storage facilities or other means of preventing system bypass or failure during reasonably foreseeable overload conditions (e.g., power failure, sewer blockage, and illicit sewer discharges). Consider both potential problems at the plant and within the community sewer system.
8. A description of the community sewer system: materials, age, infiltration/inflow estimate, and lift station details (type, location, capacity, backup systems, and alarm features).
9. Chemical characterization of influent wastewater quality, including biochemical oxygen demand, total suspended solids, total dissolved solids, and nitrogenous compounds. Include a discussion of seasonal variations, if any, and supporting analytical data.
10. A description of all known or anticipated industrial and commercial dischargers whose individual BOD, total dissolved solids and/or hydraulic loads will be greater than 2% of the plant's total daily influent loading, including the following:
 - a. Name;
 - b. Industry/business type;
 - c. Nature of waste stream;
 - d. Average daily flow (gpd and percentage of total plant loading);
 - e. Peak daily flow;
 - f. Average daily BOD loading (lb/day and percentage of total plant loading);
 - g. Peak daily BOD loading;
 - h. Salinity (e.g., total dissolved solids, electrical conductivity, major ions);
 - i. Nitrogen (all forms);
 - j. Nature of seasonal or diurnal variations in influent flow or quality, if any; and
 - k. Pre-treatment or self-monitoring programs, if any.
11. A description of the following for the both existing system and each phase of the proposed expansion:
 - a. Average dry weather flow;
 - b. Peak wet weather flow; and

- c. Effluent quality at the point of discharge to the disposal system (BOD, total suspended solids, settleable matter, nitrogenous compounds, electrical conductivity, pH, and total coliform organisms).
12. Narrative description of expected solids generation rates and handling/storage procedures:
 - a. Debris;
 - b. Grit and screenings; and
 - c. Biosolids.
 13. Narrative description of proposed solids disposal practices for debris, grit, screenings, and biosolids:
 - a. Method of disposal;
 - b. Frequency of disposal;
 - c. Disposal site/area name(s) and location(s); and
 - d. For biosolids (if beneficial re-use is proposed for reclamation sites):
 - Land application rates (dry tons per unit area per application, number of applications per year);
 - Soil incorporation practices;
 - Vegetation grown;
 - Runoff controls, if any; and
 - Public access controls.
 14. A description of the types of soil underlying the planned ponds and effluent disposal areas (include a copy of the geotechnical report).
 15. Projected monthly water balance for each phase of buildout demonstrating adequate containment capacity for the 100-year return period total annual precipitation, including consideration of at least the following.
 - a. A minimum of two feet of freeboard in each pond at all times;
 - b. Historical local evaporation data (monthly average values);
 - c. Local precipitation data with the 100-year return period annual total distributed monthly in accordance with mean monthly precipitation patterns;
 - d. Proposed wastewater loading rates distributed monthly in accordance with expected seasonal variations;
 - e. Projected long-term percolation rates (including consideration of percolation from unlined ponds and the effects of solids plugging on all ponds); and
 - f. Projected irrigation usage rates (if recycling is proposed).
 16. Proposed flow limits and basis for the limit for the current facility and each phase of the planned expansion. Consider dry weather flows vs. peak flows and seasonal variations associated with major

industrial dischargers. Include the technical basis for the proposed flow limit (e.g., design treatment capacity; hydraulic capacity of a main lift station, headworks, or other system element; and demonstrated effluent disposal capacity).

17. A narrative description of plant operation and maintenance procedures to be employed, including those associated with effluent storage and disposal.
18. A description of any policies or facility design features that reduce the potential for groundwater degradation (best practicable treatment and control or BPTC measures). Such features might include industrial discharger effluent quality limits, prohibitions on discharge of certain types of waste, advanced treatment, disinfection, concrete treatment structures, and pond lining systems.
19. Provide a technical report prepared by a Registered Geologist or Certified Hydrogeologist that provides an assessment of the following:
 - a. Baseline groundwater quality at each new disposal or reclamation site.
 - b. Groundwater degradation, if any, that has resulted from the existing operation; and
 - c. The potential for the proposed effluent disposal expansion to degrade groundwater quality (at the plant and at reclamation/disposal sites).

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

- ◆ What is the groundwater elevation and gradient at the existing facility? At least one new well will be required to better define background groundwater quality outside the influence of any mounding around the ponds and at least one more well will required downgradient of the existing ponds.
- ◆ What is background shallow groundwater quality for typical municipal waste constituents? Compare to established water quality objectives for protection of the beneficial uses of groundwater.¹
- ◆ For each monitored constituent, has the existing facility degraded groundwater quality? If so:
 - What constituents exceed the applicable water quality objective?
 - What constituents exceed background concentrations?
 - Based on site hydrogeology, is the degradation contained within a defined area (or one that could be defined by additional investigation)?
- ◆ What are subsurface conditions at the proposed new disposal sites?²

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

- ◆ What is the character of groundwater quality at the proposed new disposal sites? ³
- ◆ Based on site hydrogeology, the nature of the waste, and the proposed disposal method, what level of degradation is expected to result from the expansion (if any)?
- ◆ If the proposed expansion will cause degradation, how will the degradation be confined or controlled?
- ◆ At a minimum, the report shall include the following:
 - Rationale for field investigation approach.
 - Description and documentation of all proposed investigational methods and activities.
 - Description of the site hydrogeology including stratigraphy, groundwater elevation and gradient, transmissivity, and influence of all recharge and pumping sources (i.e., a site conceptual model).
 - Description of fate and transport mechanisms for all monitored constituents.
 - Description of data reduction/analysis techniques and results.
 - Presentation of historical and supplemental site-specific soil and groundwater data.
 - Comparison of groundwater quality data to background groundwater quality and water quality objectives for each constituent.
 - An analysis of all data and conclusions regarding each of the above questions.

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



California Regional Water Quality Control Board

Central Valley Region



Alan C. Lloyd, ph.D
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ATTACHMENT B REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

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

California Environmental Protection Agency

- D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):
Method of development to be used (i.e., surge, bail, pump, etc.)
Parameters to be monitored during development and record keeping technique
Method of determining when development is complete
Disposal of development water
- E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):
Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
Datum for survey measurements
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 shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
 - General sampling techniques
 - Record keeping during sampling (include copies of record keeping logs to be used)
 - QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

- A. General Information:
Purpose of the well installation project
Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells

Number of monitoring wells installed and copies of County Well Construction Permits
Topographic map showing facility location, roads, surface water bodies
Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0007

CEASE AND DESIST ORDER
REQUIRING
LAKE COUNTY SANITATION DISTRICT
KELSEYVILLE COUNTY WATER WORKS DISTRICT NO. 3
LAKE COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

The Regional Water Quality Control Board, Central Valley Region, (hereafter referred to as "Regional Board") finds that:

1. Waste Discharge Requirements (WDRs) Order No. 99-094, adopted by the Regional Board on 11 June 1999, prescribes requirements for the Lake County Sanitation District, Kelseyville County Water Works District No. 3 (hereafter referred to as "Discharger").
2. The Discharger's wastewater treatment facility is near the town of Kelseyville, in Section 11, T13N, R9W, MDB&M, while the disposal facilities are 2.5 miles away in Section 13, T13N, R9W, MDB&M.

Treatment Facility

3. The wastewater system serves most of the town of Kelseyville and portions of the surrounding areas. The wastewater system provides secondary treatment of a dry weather flow of 0.26 million gallons per day (mgd) of domestic wastewater with effluent disposal to a series of evaporation/percolation ponds or for use as irrigation supply water.
4. The wastewater system consists of three facultative ponds, a chlorine feed and contact system, and a fourth hydraulic pond. From these ponds, the wastewater is pumped to a remote disposal site consisting of a series of seven evaporation/percolation ponds and an irrigation area. A small portion of the wastewater is also used to irrigate approximately five acres of vineyard owned by Mr. Michael Fowler (regulated by WDRs Order No. 99-070).

Violations of Waste Discharge Requirements

5. Discharge Specification No. B.2 of WDRs Order No. 99-094 states: "*The monthly average dry weather discharge flow shall not exceed 0.26 million gallons per day (mgd).*"
6. Monthly self-monitoring reports for the dry weather season between June 2000 and August 2004 show that the average dry weather flows (May through October) range from 0.196 mgd in the year 2001 to 0.237 mgd in the year 2003. These flows comply with the WDR's dry weather flow limit.
7. The WDRs do not contain a wet weather flow limit. However, since January of 2001, the wastewater collection system has consistently experienced wet weather flows in excess of its wet weather flow design capacity of 0.20 mgd. Monthly self-monitoring reports for the wet weather

periods between January 2001 and April 2004 show that the average wet weather wastewater flows range from 0.256 mgd in the year 2001 to 0.333 mgd in the year 2004. Average wet weather flows have been consistently greater than 0.20 mgd and have increased annually during this time period.

8. Discharge Specification No. B.4 of the WDRs states: *“As a means of discerning compliance with Discharge Specification No. B.3, the dissolved oxygen content in the upper zone (1 foot) of wastewater ponds shall not be less than 1.0 mg/L.”* Monthly self-monitoring reports from June 2000 through August 2004 indicate that dissolved oxygen measurements were less than 1 mg/L on eight weekly occasions. The Discharger is required to take monthly measurements at a minimum, but typically measures the dissolved oxygen on a weekly basis.
9. Discharge Specification No. B.5 of the WDRs states: *“Ponds shall not have a pH less than 6.5 or greater than 8.5.”* Monthly self-monitoring reports for June 2000 through August 2004 indicate that effluent pH measurements have chronically exceeded a pH of 8.5; with pH measurements ranging from 7.12 to 10.26, and exceeding 8.5 a total of 113 times. The Discharger is required to take monthly measurements at a minimum, but typically measures the pH on a weekly basis.
10. Discharge Specification No. B.7 of the WDRs states: *“A minimum 1.0 freeboard shall be maintained in the ponds at all times.”* Monthly self-monitoring reports for February 2001 through April 2004 show that weekly pond freeboard measurements have ranged from 0.1 feet to 3.8 feet. During this period, freeboard was measured at less than 1-foot 89 times during wet weather months. Pond freeboard was also reported at less than 1-foot in February 2001 and from 19 February to 9 April 2004. On 27 and 28 February 2004, the Discharger installed sandbags around the perimeter of Pond Nos. 3 and 4 to prevent a wastewater overflow. The Discharger has indicated that sand bags have also been installed around the ponds in the past.
11. Discharge Prohibition A.1 of WDRs Order No. 99-094 states: *“The direct discharge of wastes to surface waters or surface water drainage courses is prohibited.”*
12. On 6 December 2003, a 270-gallon raw sewage spill occurred at 4031 Gray Stone Court in Kelseyville. The spill was the result of a grease blockage in the 6-inch main sewer line that caused a discharge of raw sewage through a cleanout and into a drainage ditch along 3rd Street. The spill report indicated that the discharge did not enter surface waters. The District stated that it would investigate installation of an additional manhole, annual line cleaning would be conducted, and a public education program about grease and grease disposal would be implemented.
13. Monitoring and Reporting Program No. 99-094 requires that the Discharger collect samples from the one on-site well located at the evaporation/percolation ponds on a quarterly basis. However, staff’s review indicates that groundwater sampling has not been conducted since 1993 due to insufficient water in the well to collect samples.
14. On 14 July 2004 the Discharger submitted notification that the Kelseyville County Water Works District No. 3 Wastewater Treatment Facility was experiencing capacity problems which have resulted in emergency measures including the sandbagging of two ponds to create additional temporary storage and prevent overflow. Numerous monthly self-monitoring reports indicate that the facility is operating at, or exceeding, the designed treatment capacity for wet weather flows. To

address the capacity issue, the Discharger states that a consultant will conduct an Inflow/Infiltration study during the 2004/2005 budget year. The Discharger also plans to apply for a Small Communities Grant, Water Recycling Grant, and State Revolving Fund loan in 2004/2005 to fund the necessary upgrades to the facility.

15. On 4 August 2004, the County of Lake Department of Health Services Environmental Health Division issued a Compliance Order to Lake County Sanitation District for insufficient treatment and storage capacity during the winter season. This Compliance Order states: *“Pursuant to Section 5412 of the California Health and Safety Code, the local Health Officer hereby orders the District to take any and all action necessary to secure funding and complete design and construction improvements to the Kelseyville System to prevent any further discharges and to adequately, dependably and safely operate the treatment plant.”*

Regulatory Considerations

16. As a result of the events and activities described in this Order, the Regional Board finds that the Discharger has caused or permitted waste to be discharged in such a manner that it has created, and continues to threaten to create, a condition of pollution or nuisance. The Regional Board also finds that the Discharger has discharged, and has the potential to discharge, waste in violation of WDRs No. 99-094.
17. Surface water drainage from the facility is to Cole Creek and then to Clear Lake. The beneficial uses of Clear Lake, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; water contact recreation; noncontact water recreation; warm freshwater habitat, cold freshwater habitat; spawning, reproduction, and/or early development; and wildlife habitat.
18. Section 13301 of the California Water Code states in part: “When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action.”
19. Section 13267(b) of the California Water Code states: “ 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, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters 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.”
20. The technical reports required by this Order are necessary to assure compliance with WDR Order No. 99-094 and to assure protection of public health and safety. The Discharger operates the facility that discharges the waste subject to this Order.

21. 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, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations.
22. On 27 January 2005, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Regional Board conducted a public hearing at which evidence was received to consider a Cease and Desist Order.
23. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, CA, 95812-0100, within 30 days of the date on which the Regional Board action took place. Copies of the law and regulations applicable to filing petitions are available at www.swrcb.ca.gov/water_laws/index.html and also will be provided upon request.

IT IS HEREBY ORDERED that pursuant to Sections 13301 and 13267 of the California Water Code, Lake County Sanitation District, its agents successors, and assigns, shall implement the following measures necessary to ensure long-term compliance with WDRs No. 99-094, or any superceding permits or orders issued by the Regional Board.

Any person signing a document submitted under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

1. The Discharger shall **immediately** comply with all aspects of WDRs Order No. 99-094.
2. By **1 March 2005**, the Discharger shall submit and implement an emergency contingency plan to prevent unauthorized discharges of wastewater during the wet weather months of 2005. The plan shall consider options including, but not limited to: operational adjustments to draw down pond levels in Pond Nos. 3 and 4, sandbagging the pond berms, trucking of effluent to another properly permitted facility, or other temporary measures to prevent discharges.
3. By **1 September 2005**, the Discharger shall submit and implement a short-term contingency plan to prevent unauthorized discharges of wastewater until all long-term measures have been implemented. The plan shall consider options including, but not limited to: diversion of surface runoff away from ponds, enhanced evaporation, trucking of effluent to another properly permitted facility, water conservation measures, reduction of inflow/infiltration, or any other measures to prevent discharges.
4. By **1 September 2005**, the Discharger shall submit an *Inflow and Infiltration (I/I) Assessment Report* that describes the results of the Discharger's I/I evaluation of the collection system, and

describes the repairs which must be completed to reduce I/I to industry standards. The report shall also include a proposed schedule for these repairs.

5. By **1 December 2005**, the Discharger shall submit a *Long Term Wastewater Master Plan* that describes the facility improvements needed to:
 - a. Increase overall storage and disposal capacity as necessary to comply with a 100-year total annual precipitation event;
 - b. Provide enough wastewater storage and disposal capacity for current flows, as well as growth projected over the next 15 years;
 - c. Prevent sanitary sewer overflows;
 - d. Comply with pond freeboard requirements in the WDRs;
 - e. Maintain a pH between 6.5 and 8.4 in each of the wastewater ponds; and
 - f. Ensure that the dissolved oxygen content in the upper zone (1 foot) of wastewater ponds is not less than 1.0 mg/L.

The *Long Term Wastewater Master Plan* shall include a water balance for both the current inflow and projected flows through at least the year 2020, and shall clearly show the times of the year when wastewater must be stored versus when it may be applied to land. The water balance shall evaluate the storage ponds' ability to provide sufficient capacity to maintain two feet of freeboard on a month-by-month basis. The water balance shall include monthly evaporation, precipitation, and percolation rates, and shall identify contributions from major sources to monthly discharge volumes such as subsurface inflows, stormwater run-on, and any inflow and infiltration from the collection system. Rainfall shall be based on the 100-year return period total annual precipitation.

The *Long Term Wastewater Master Plan* shall include a proposed timeline for all improvements.

6. **Within 60 days of staff's written approval** of the *Long Term Wastewater Master Plan*, the Discharger shall submit a *Report of Waste Discharge* (RWD) to allow WDRs to be revised to reflect the proposed upgrades. The RWD consists of the Form 200 (*Application for Report of Waste Discharge*) and a technical report that addresses all items listed in Attachment A to this Order, "*Additional Information Requirements for a Report of Waste Discharge.*"
7. By **1 July 2006**, the Discharger shall submit a *Revenue Plan* that describes the costs associated with making the necessary improvements to the collection, treatment storage and disposal system to ensure continuous compliance with WDRs Order No. 99-094. The plan shall show whether the District has the necessary funds to implement the improvements. Should the Revenue Plan show that there are inadequate funds, the District must also include an implementation schedule that shows how the Discharger will raise the funds.
8. By **1 July 2006**, the Discharger shall submit a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan) that describes the actions designed to prevent, or minimize the potential for sanitary sewer overflows. The Discharger shall maintain the SSS Plan in an up-to-date condition and shall amend the SSS Plan whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for sanitary sewer overflows. The Discharger shall ensure that the

up-to-date SSS Plan is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

At a minimum, the Operation and Maintenance portion of the plan shall contain or describe the following:

1. Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;
2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
3. A schedule for routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
4. Provisions for repair or replacement of old, worn out, or defective equipment; and
5. Provisions to minimize the need for manual operation of critical systems and provide spill alarms or other "fail safe" mechanisms.

At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:

1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;
 2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows;
 3. Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and to minimize the adverse effects of sewer overflows on water quality and beneficial uses;
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported; and
 5. A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Lake County Environmental Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified
9. By **1 December 2007**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan* prepared in accordance with, and including the items listed in, the first section of Attachment B "*Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports.*" The workplan shall describe the locations of existing wells, data on the groundwater flow direction, and installation of additional wells to adequately characterize background water quality and potential groundwater impacts from the wastewater storage and

discharge. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost water bearing zone and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment B, including a Groundwater Sampling and Analysis Plan.

10. **By 1 May 2008**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment B.
11. **Beginning 1 May 2005**, and by the first day of the second month following each calendar quarter (**i.e., by 1 February, 1 May, 1 August, and 1 November each year**), the Discharger shall submit a progress report describing the work completed to date regarding each of the reporting requirements described above.

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.

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 or may issue a complaint for administrative civil liability.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 January 2005.

THOMAS R. PINKOS, Executive Officer

Attachments:

Additional Information Requirements for a Report of Waste Discharge
Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports