



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

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14 February 2011

Ms. Wendy Wyels, Supervisor, Compliance & Enforcement

Ms. Anne Olson, Senior WRCE

Mr. Howard Hold, EG

Regional Water Quality Control Board

Central Valley Region

11020 Sun Center Drive, Suite 200

Rancho Cordova, CA 95670-6144

VIA: Electronic Submission

Hardcopy if Requested

RE: Stanislaus County Department Of Environmental Resources, Geer Road Class III
Landfill, Cease and Desist Order Comments

Dear Mesdames Wyels, Olson and Mr. Hold:

The California Sportfishing Protection Alliance (CSPA) has reviewed the proposed Cease and Desist Order for the Geer Road Landfill and respectfully submits the following comments.

The site was operated as a sanitary landfill by Stanislaus County from 1970 until 1990 and accepted residential, commercial, industrial, cannery, construction and demolition wastes. The Discharger estimates that the landfill contains approximately 4.5 million tons of waste. The landfill was closed in 1995. The conditions at the closed landfill promote the generation of landfill gas and uncontrolled leachate drainage, both of which have caused groundwater pollution. The discharge of wastes has polluted the groundwater beneath the landfill with volatile organic compounds (VOCs), metals, salts and bicarbonate.

The Discharger has closed the landfill, installed a landfill gas extraction system, and installed a shallow zone groundwater extraction and treatment system. However, (a) the horizontal and vertical extent of contamination has not been completely defined on the south, southwest, and north sides of the landfill; and (b) the existing groundwater extraction system is not adequate to prevent VOC migration away from the site or to deeper groundwater zones.

The Geer Road Landfill operated as a cut and fill operation adjacent to the Tuolumne River. During the dry months, the landfill operator would excavate down to the water table and begin to fill the pit with waste. When the groundwater elevation rises during the wet months, waste in the lower portion of the pits becomes inundated with groundwater, thus promoting the generation of

landfill gas and leachate. Because the landfill does not have a bottom liner system, leachate and landfill gas freely drain to the underlying groundwater.

Quarterly groundwater monitoring data show that aromatic VOCs, halogenated VOCs, and metals are present in groundwater in both the shallow and deeper groundwater zones under the landfill and downgradient of the site. The landfill has also degraded and/or polluted groundwater with specific (electrical) conductance (EC), chlorine and bicarbonate.

The Discharger has installed a groundwater extraction and treatment system to address the migration of contamination in the underlying aquifer, however the area of influence around the extraction wells is minimal and no influence (drawdown) was observed in the nearby monitoring wells.

The landfill is surrounded on two sides by the Tuolumne River. Groundwater elevations tend to vary over time by up to five feet, and can rise up to 15 feet above normal levels in response to seasonal high river flows. This indicates that the shallow groundwater beneath the landfill is in hydraulic communication with the river. During the February and May 2010 monitoring events, the groundwater flow direction for the shallow zone was calculated to be southwest, towards the Tuolumne River.

The Cease and Desist Order was prepared to address the following violations of WDRs Order R5-2009-0051:

1. Failure to completely define the vertical and lateral extend of VOC pollution in groundwater.
2. Failure to submit a corrective action plan for groundwater remediation at the north end of the landfill.
3. Failure to submit an adequate corrective action plan for additional LFG and dual zone groundwater extraction wells.
4. Failure to make upgrades to the corrective action systems.
5. Failure to protect the underlying aquifer from contaminants emanating from the landfill; and
6. Failure to construct a groundwater monitoring system that meets the standards in California Code of Regulations Title 27 (Title 27) Section 20415.

The Cease and Desist Order proposed the following tasks be completed:

Landfill Gas Corrective Action Tasks

1. By **30 March 2011**, the Discharger shall submit a Landfill Gas Extraction System Optimization Plan that includes the following:

An evaluation of the ability of the existing LFG extraction system to provide continuous negative pressure in each LFG extraction well for each interval monitored.

If the evaluation concludes that the existing system can achieve continuous negative pressure site-wide and within each interval:

A description of the measures that have been taken to do so;

Certification that those measures have been fully implemented; and

An operational protocol to ensure that LFG extraction is continuously optimized.

If the evaluation concludes that the existing system cannot achieve continuous negative pressure site-wide:

An Interim LFG Extraction System Optimization Plan to ensure that LFG extraction is optimized within the limits of the current system, and certification that those measures have been fully implemented; and

A detailed plan and schedule to install sufficient LFG extraction wells and associated flares or other treatment systems such that LFG is captured and destroyed throughout the entire landfill unit, including the waste and the vadose zone. The schedule for full implementation of this plan shall not extend beyond **30 December 2011**.

2. If the existing LFG system cannot be optimized to achieve continuous negative pressure site-wide, by **30 December 2011**, the Discharger shall submit an *Expanded LFG System Construction Completion Report* that documents that construction and startup testing for all site improvements have been completed in accordance with the approved plan submitted pursuant to Task 1.c.ii above.

Groundwater Corrective Action Tasks

3. By **30 March 2011**, the Discharger shall submit an *Interim Groundwater Extraction and Treatment System Expansion Plan* that presents a specific plan and schedule to implement the recommendations in the 29 October 2010 *Corrective Action Workplan* (summarized in Finding 23, above). The plan shall include a detailed description of the improvements to be constructed, proposed effluent limits for the treatment system, and a design for the expanded treated groundwater disposal system. The schedule shall show that all construction and startup testing will be completed by **30 December 2011**.

4. By **30 April 2011**, the Discharger shall submit a *Supplemental Groundwater Investigation Workplan* that describes a specific plan to define the nature and extent of

groundwater impacts associated with the Geer Road landfill. Consistent with Title 27 Section 20425, the investigation shall include the installation of additional groundwater monitoring wells as needed and shall be designed to:

Determine the vertical and lateral extent of the geologic interval (paleosol) that separates the shallow zone from the deeper zone.

Determine the vertical and lateral distribution and concentration of each constituent of concern 6 in groundwater in each aquifer zone affected by the release.

Define the lateral extent of contamination within the deeper gravel zone beneath and beyond the landfill and provide a permanent groundwater monitoring system for that interval. The workplan shall identify all water supply wells within a one-mile radius that utilize this interval to support the proposed scope of investigation and monitoring.

Evaluate whether groundwater on the opposite side of the Tuolumne River has been affected by the releases.

5. By **30 October 2011**, the Discharger shall submit a *Supplemental Groundwater Investigation Report* that presents of the findings of the hydrogeologic investigation completed pursuant to the approved workplan. The report shall include:

A well installation report for any newly installed monitoring points.

Documentation of all investigative activities and data derived from the investigation.

A detailed evaluation of the lateral extent of all COCs in the shallow and deeper saturated zones that extends in all directions from the landfill to the points where all COCs are not detected in groundwater samples from those zones.

A site conceptual model that defines the stratigraphy; hydrogeologic properties of the shallow and deeper aquifer zones; and the influence of water supply wells, river stage and on-site disposal of treated groundwater on groundwater elevation and gradient.

A calibrated numeric groundwater model based on site-specific data that depicts the existing groundwater plumes and can be used to model alternative groundwater remediation strategies.

6. By **30 January 2012**, the Discharger shall submit an *Interim Groundwater Extraction and Treatment System Expansion Report* documenting that construction and startup testing of the groundwater extraction and treatment system upgrades proposed in the *Interim Groundwater Extraction and Treatment System Expansion Plan* have been completed.

7. By **30 December 2012**, the Discharger shall submit an *Updated Engineering Feasibility Study Report* that presents an updated engineering feasibility analysis of alternatives to expand and/or modify the existing groundwater extraction and treatment system so that it will achieve compliance with the water quality protection standards for each COC. The analysis shall include consideration of the following factors:

The nature and extent of groundwater impacts for each COC;

The Water Quality Protection Standards and date when compliance with all water quality protection standards will be achieved for all zones affected by the release.

The extent of buried waste in contact with groundwater, whether seasonal or continuous; and

The potential for continued LFG generation to represent an ongoing source of releases to groundwater.

The feasibility analysis shall include a revised cost estimate for capital and annual operation/maintenance/monitoring costs, as well as selection of the preferred alternative and justification for the selection.

8. By **30 April 2013**, the Discharger shall submit a *Final Design Report* for the enhanced groundwater extraction and treatment system based on the approved updated feasibility study. The report shall provide a narrative description of improvements to be constructed, and engineering drawings and construction specifications at the 70 percent completion level.

9. By **30 January 2014**, the Discharger shall submit a *Groundwater Correction Action System Improvements Construction Completion Report* that documents all site improvements completed pursuant to the approved *Final Design Report* submitted pursuant to Task 8 above.

10. By **30 April 2014**, the Discharger shall submit a *Groundwater Correction Action System Improvements Start-up Testing Completion Report* that certifies successful completion of start-up testing for the groundwater treatment system and documents any post-construction modifications that were made to ensure that the system operates as designed.

The Cease and Desist Order is insufficient, as it does not address possible pollutant discharges to the Tuolumne River.

As is stated above; the landfill is surrounded on two sides by the Tuolumne River. Groundwater elevations tend to vary over time by up to five feet, and can rise up to 15 feet above normal levels in response to seasonal high river flows. This indicates that the shallow groundwater

beneath the landfill is in hydraulic communication with the river. During the February and May 2010 monitoring events, the groundwater flow direction for the shallow zone was calculated to be southwest, towards the Tuolumne River.

California Water Code § 13376. Requires that Any person discharging pollutants or proposing to discharge pollutants to the navigable waters of the United States within the jurisdiction of this state or any person discharging dredged or fill material or proposing to discharge dredged or fill material into the navigable waters of the United States within the jurisdiction of this state shall file a report of the discharge in compliance with the procedures set forth in Section 13260, except that no report need be filed under this section for discharges that are not subject to the permit application requirements of the Federal Water Pollution Control Act, as amended.

Based on the facts that the Discharger has polluted groundwater; the landfill is adjacent to the Tuolumne River; groundwater flow is at times toward the Tuolumne River and there is documented hydraulic continuity between groundwater and the Tuolumne River: it is reasonable to assume that pollutants from the landfill in the groundwater would migrate to the Tuolumne River. The proposed Cease and Desist Order does not require the Discharger assess possible pollutant impacts to the Tuolumne River. At a minimum the Regional Board should require that the Discharger assess whether pollutants from the landfill and polluted groundwater are migrating to the Tuolumne River. If pollutants are found migrating to the Tuolumne River a Report of Waste Discharge in accordance with CWC 13376 must be submitted. The study should be conducted during periods when groundwater is shown to be flowing in the direction of the river and when the river is likely to be a gaining stream.

Summary and Conclusion

The Discharger has amassed an extensive record of noncompliance and failing to complete tasks that would result in meaningful improvements to water quality. We concur with and are supportive of most of the requirements of the proposed Cease and Desist Order as minimal measures to define the extent of groundwater pollution and to begin effective remediation. We must question however whether sufficient time has elapsed without meaningful progress at the site warranting an assessment of monetary penalties. We are also greatly concerned that the Regional Board has not required an assessment of the potential impacts to the Tuolumne River and pray that our recommendation regarding sampling will be added to the proposed CDO with an acceptably short compliance schedule.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Jennings". The signature is written in a cursive, flowing style with some loops and flourishes.

Bill Jennings, Executive Director
California Sportfishing Protection Alliance