

OLIN COMMENTS:

DRAFT CLEANUP AND ABATEMENT ORDER NO. R3-2005-0014

February 23, 2005

In the following paragraphs, Olin's comments and requested modifications are shown in italicized text, followed by a modified paragraph. Deleted text is shown using strikethrough font (e.g.: ~~strikethrough~~) and inserted text is shown using underlined text.

Ordering Preamble:

Requested Modification: At the end of the paragraph, delete the colon and insert the phrase "in Sections A through P." This modification is shown below:

IT IS HEREBY ORDERED, pursuant to Sections 13267 and 13304 of the California Water Code that the Dischargers shall cleanup and abate the effects of the perchlorate discharge from the Property as follows: in Sections A through P.

Ordering Section A, second full paragraph and numbered list:

Comment: During negotiations, the work plan and schedule were moved to Ordering paragraph B. It appears that deleting the phrase "and a work plan and schedule for installation" was missed during previous reviews. Also, in the next to last sentence, the word "sized" is used, but probably should have been "sited." Requested modifications are shown below:

The monitoring plan shall include locations of proposed and or newly installed offsite monitoring wells ~~and a work plan and schedule for installation~~. If the Dischargers propose to use supply wells as part of the offsite monitoring system, the Dischargers shall demonstrate, to the Executive Officer's satisfaction, that those supply wells will be effective at providing groundwater quality data comparable to properly constructed and sited monitoring wells or piezometers. The Dischargers may submit data from supply wells that are not properly constructed in order to supplement data from properly constructed and ~~sized~~ sited monitoring wells, but the Regional Board will only consider the supplemental data to the extent it provides valuable information. The Llagas Subbasin Monitoring Plan shall include the following elements in addition to addressing the aforementioned objectives:

In the first two numbered items following paragraph above, delete the phrase "and other groundwater users" and "and or other water users". If these phrases are not deleted, then the requirement to recommend location of new and existing offsite monitoring wells to determine the lateral and vertical extent of perchlorate pollution and act as sentry wells to other water users could create a situation where any water user, regardless of location, could demand a monitoring or sentry well for their well. In the 2nd item, the sentence: "Supply wells proposed for monitoring shall be shown to be equivalent to conventional monitoring wells." is redundant is should be deleted. Finally, the phrase: "The Dischargers' shall use the following criteria or propose alternative criteria..." is too

OLIN COMMENTS:

DRAFT CLEANUP AND ABATEMENT ORDER NO. R3-2005-0014

prescriptive and demands that each criterion be used regardless of whether it is appropriate. Suggest including the phrase "one or more of" in the sentence. Requested modifications are shown below:

1. Recommendations for locations of new and existing offsite monitoring wells to determine the lateral and vertical extent of perchlorate pollution and act as sentry wells for the City of Gilroy ~~and other water users.~~
2. Recommendations for and identification of water supply wells that are proposed for inclusion in the Llagas Subbasin Monitoring Plan and or act as sentry wells for the City of Gilroy ~~and or other water users.~~ If the Dischargers choose to include water supply wells, those wells shall be shown to be equivalent to properly sited and constructed monitoring wells. ~~Supply wells proposed for monitoring shall be shown to be equivalent to conventional monitoring wells.~~ The Dischargers' shall use one or more of the following criteria or propose alternative criteria, acceptable to the Executive Officer, to evaluate water supply wells:

Comment: Normally, a minimum of eight analytical results for a single population are required for statistically valid evaluation of a data set. Requiring a statistical evaluation of all wells, regardless of the statistical requirements, would result in an inappropriate evaluation. A suggested revision is shown below:

5. Recommendations for statistical method to determine if perchlorate concentrations are increasing, decreasing or static. The statistical method shall be applied to all monitoring wells after collection of eight quarterly monitoring events.

Ordering Paragraphs E & H:

Comment: These plume migration requirements include the term "remediation." They should not. Use of the term "remediation" is appropriate in paragraphs K and L when referring to the Llagas Subbasin Cleanup, but not to assess or control plume migration. If so included, ordering schedule requirements are incorrect and infeasible. As indicated in paragraph F, plume migration assessment and control is focused on areas that are currently not impacted. Remediation is necessary for impacted areas and is implemented as required and scheduled in Ordering Paragraphs K and L as part of cleanup workplan and cleanup workplan implementation but not as part of Ordering Paragraphs E through H regulating plume migration control to prevent perchlorate migration toward unimpacted areas.

Requested modifications to Paragraph E are shown below:

The Dischargers shall evaluate the need for plume migration control to stop and or contain the migration of perchlorate that has originated from the Site ~~and to restore groundwater beneficial uses.~~ To complete this work, the Dischargers shall develop a Plume Migration Control Assessment Report, acceptable to the

OLIN COMMENTS:

DRAFT CLEANUP AND ABATEMENT ORDER NO. R3-2005-0014

Executive Officer, that evaluates whether plume cutoff ~~and remediation is necessary~~. The assessment report should consider hydrogeologic information and analyses related to groundwater elevations, aquifer parameter data, field investigation, modeling, and or other pertinent data. The Dischargers may not rely on any groundwater modeling unless they provide the Regional Board with a legal copy of the modeling software, electronic input data files, assumptions used, model calibration information and all other data or information used in the model upon request. Any claims by the Dischargers of trade secret shall be subject to California Water Code section 13267(b)(2). If the Dischargers determine or the Executive Officer concludes that plume migration control is required, then the Dischargers shall submit a Plume Migration Control Feasibility Study, as outline below.

Requested modifications to Paragraph H are shown below:

Dischargers shall implement the Plume Migration Control Work Plan within 30 days of the Executive Officer's concurrence with the work plan, or if earlier, 120 days after submitting the Plume Migration Control Work Plan. The tasks and due dates in the schedule for implementation of the selected cutoff ~~and remediation alternative(s)~~ (including the monitoring schedule) shall, after approval by the Executive Officer, become enforceable terms of this Order. Within 30 days of completion of field activities, Dischargers shall submit an Implementation Report documenting the implementation of the cutoff and remedial alternatives.

Ordering Paragraph E:

Comment: Requires Olin to provide "legal copy of any modeling software etc" to be able to rely on modeling. Clarification is sought as to whether licensed modeling software would be excluded from this requirement.

The numerical models that have been used in Olin's site groundwater models are: (1) Modular Three-Dimensional Finite Difference Groundwater Flow Model (MODFLOW) and (2) Groundwater Modeling Systems (GMS). MODFLOW is a program which is in the public domain, has been around for many years, and can be downloaded from various web sites. MODFLOW operates on a binary framework. Accordingly, the Regional Board may need the GMS software to translate MODFLOW into a useable, Windows[®] format. GMS is licensed software that can be easily purchased but has to be purchased for licensing purposes and cannot be transferred. A trial version of GMS (functional but no printing or saving capabilities), which includes MODFLOW, can be downloaded from www.ems-i.com. The MODFLOW source code by itself is also available at <http://water.usgs.gov/nrp/gwsoftware/modflow.html>.