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# California Regional Water Quality Control Board Central Valley Region

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CROWS LANDING  
SSIC NO. 5090.3.A

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## **17 NOVEMBER 2008 DRAFT HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT FOR GROUNDWATER ASSOCIATED WITH AN OFF-SITE AGRICULTURAL WELL, FORMER NASA CROWS LANDING FLIGHT FACILITY, CROWS LANDING, STANISLAUS COUNTY**

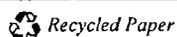
Contingent on the comments presented below, the Regional Water Board has no objection to the overall approach proposed in the referenced draft Human Health and Ecological Risk Assessment (Assessment). In addition, the Human Health and Ecological Risk Division (HERD) of the Department of Toxic Substance Control (DTSC) has prepared a 20 January 2009 memorandum commenting on the Assessment. The Regional Water Board will defer to DTSC regarding its specific comments to the Assessment. The Regional Water Board's comments to the Assessment are presented below.

### **Main Assessment Points**

The Assessment addresses the potential exposure to carbon tetrachloride (CCl<sub>4</sub>) in groundwater produced from an irrigation well on the Escobar property, which is adjacent and east of the former NASA Crows Landing Flight Facility. Pumping the Escobar well has drawn CCl<sub>4</sub> into the well from the former NASA Crows Landing Flight facility. The highest concentration of CCl<sub>4</sub> detected in the Escobar well to date has been 1.8 micrograms per liter (µg/L) in September 2008. Maximum CCl<sub>4</sub> concentrations in monitoring well 17-MW-42(D), approximately 380 feet northwest of the Escobar well (between the NASA Crows Landing Flight facility and the Escobar well), were reported at 19 µg/L in February 2008. With the movement of the CCl<sub>4</sub> contaminant to the Escobar well, a concern was raised that irrigation water containing CCl<sub>4</sub> would be discharged to land creating possible exposure risks to humans and wildlife. The Assessment addresses the question of at what CCl<sub>4</sub> concentration is the risk of exposure considered too great.

The Assessment calculated risk levels using the highest concentrations of CCl<sub>4</sub> detected in the Escobar well (1.8 µg/L) and monitoring well 17-MW-42(D) (19 µg/L). Using these concentrations, risk levels from exposure to CCl<sub>4</sub> in both wells (as calculated in the Assessment) did not exceed a cancer risk of 1E-6 and a non-cancer hazardous index (HI)

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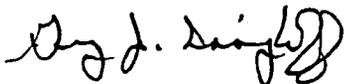
of 1. The Assessment back-calculated a threshold risk-based concentration of 35 µg/L, which, according to the Assessment, is protective of both cancer and non-cancer health hazards to an orchard worker. This number should also be protective of wildlife and underlying groundwater quality.

The Assessment proposes to sample both the Escobar well and monitoring well 17-MW-42(D) on a monthly basis during the irrigation season, and on a quarterly basis during the remainder of the year. The Assessment indicated that if CCl<sub>4</sub> concentrations reach 35 µg/L in monitoring well 17-MW-42(D), then corrective actions to manage potential risks to exposure will be undertaken; that is to say, a treatment system will be installed on the Escobar well.

### Comments

1. Using monitoring well 17-MW-42(D) as a sentry well to determine when the installation of treatment equipment on the Escobar well is necessary and a good idea. Monitoring well 17-MW-42(D) is approximately 380 feet from the Escobar well. This distance should allow adequate time to install treatment equipment before CCl<sub>4</sub> travels to the Escobar well in concentrations that reach the threshold risk-based concentration of 35 µg/L.
2. The Assessment indicates that a treatment system will be installed on the Escobar well if the threshold risk-based concentration of 35 µg/L is reached in monitoring well 17-MW-42(D). However, no details are given as to what the treatment system will entail. A separate document detailing the installation and use of the treatment system should be provided and ready for implementation before the 2009 irrigation season begins.
3. The Escobar well is not sealed through the Corcoran Clay. To monitor possible migration of CCl<sub>4</sub> to aquifer zones below the Corcoran Clay, and to reiterate our 17 November 2008 letter, a deep monitoring well should be installed very near to the Escobar well (within 15 feet). The monitoring well should be screened immediately below the Corcoran Clay interval. If contaminants (CCl<sub>4</sub>) are detected in the monitoring well, then the Escobar well can be immediately destroyed and the Corcoran Clay interval properly sealed off. This new monitoring well should be sampled monthly during the irrigation season along with the Escobar well and monitoring well 17-MW-42(D), and quarterly during the remainder of the year.

If you have any questions regarding the above, please call Greg Issinghoff at 559-488-4390.



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