Terry Tamminen
*Secretary for Environmental Protection*

# California Regional Water Quality Control Board

## Central Coast Region

Arnold Schwarzenegger
*Governor*

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November 18, 2003

Mr. Richard W. McClure
Olin Corporation
Environmental Remediation Group
P.O. Box 248
Charleston, TN 37310-0248

Mr. Jay McLaughlin
President and CEO
Standard Fusee Corporation
P.O. Box 1047
Easton, MD 21601

Dear Messrs. McClure and McLaughlin:

**SLIC: 425 TENNANT AVENUE, MORGAN HILL; COMMENTS ON THE 90% DESIGN REPORT FOR ON-SITE CONTAINMENT AND TREATMENT OF PERCHLORATE IN GROUNDWATER**

The Regional Board has reviewed GeoSyntec Consultants' October 2003, *90% Design Report for On-Site Containment and Treatment of Perchlorate in Groundwater* (Report) prepared and submitted on behalf of Olin Corporation. The Report presents a plan to extract perchlorate-contaminated groundwater from beneath the former Olin facility and treat the extracted groundwater prior to offsite or onsite (at a future time) disposal. The Report describes the installation of two groundwater extraction wells and two observation wells and presents the results of aquifer pumping tests and groundwater modeling. Based on this work Olin proposes to install an additional extraction well, pump up to 250 gallons per minute (gpm) of groundwater from the three extraction wells, remove perchlorate from the extracted groundwater with an ion-exchange treatment system, and dispose of the treated water in the Butterfield Retention Pond via a storm drain near the site. Onsite disposal options such as infiltration or aquifer recharge are being evaluated for potential future use. Olin proposes to implement a performance monitoring program to assess hydraulic containment and performance of the ion-exchange perchlorate treatment system. If results of the performance monitoring program indicate that the extraction well network does not provide full hydraulic containment, pumping rates or the number of extraction wells will be modified.

On October 28, 2003, a telephone conference was held among staffs of the Regional Board, City of Morgan Hill Public Works, Olin and its consultant to discuss the report. Regional Board staff provided Olin with verbal authorization to proceed with the procurement and installation of the containment and treatment system to meet the December 31, 2003, operational date.

Olin indicates that the proposed groundwater extraction system will provide hydraulic containment of two upper water-bearing zones beneath the Site, designated as the A Zone and the B1 Zone. The A Zone reportedly consists of mostly sand and gravel from the ground surface to a depth of approximately 52 feet below the ground surface (bgs), and the B1 Zone consists of mostly sand and gravel from approximately 79 feet bgs to approximately 103 feet bgs. The A and B1 Zones are reportedly separated by a relatively low-conductivity layer consisting of

mostly silt and clay. The need for further assessment and remediation of deeper groundwater-bearing zones will be evaluated based on results of groundwater monitoring.

This letter confirms our verbal authorization for Olin to immediately implement the proposed groundwater containment and perchlorate treatment system provided our comments (which incorporate comments provided by Santa Clara Valley Water District (District) and by Komex on behalf of the cities of Morgan Hill and Gilroy) are considered in its implementation. Our comments are presented below.

- The A Zone aquifer test indicated confined conditions in the A Zone (page 8), which appears to be valid based on the nearly instantaneous response to pumping observed in Monitoring Well MWSW0011SA1, which is located over 700 feet away from the pumping well. If the A Zone is confined under current low water table conditions, then the presence of a relatively impermeable unit across the site above the current water table is implied. This means that high water table conditions in the winter and spring would likely be due to the presence of a seasonal perched aquifer above the A Zone. Groundwater in a seasonal perched aquifer would not be extracted and treated by the proposed system, and any water infiltrated at the surface of the site would tend to spread laterally due to the presence of the underlying confining layer. This could cause offsite migration of shallow perchlorate-impacted groundwater in high water table conditions.

- The ability of the Butterfield Retention Pond to accept 250 gpm (360,000 gallons per day) of treated water has not been sufficiently addressed. The highest groundwater extraction rates are proposed to occur during the periods of high water table, which would likely be coincident with the periods of heaviest rainfall when the pond capacity to accept treated water might be reduced. Additional evaluation of pond capacity and infiltration rate should be performed, and the City of Morgan Hill should retain the right to reduce or shut off flow to the pond at any time. In our October 28 teleconference, Olin agreed to evaluate the pond's capacity.

- The modeled A Zone capture zones (Figures 6a-e) indicate that contaminated groundwater from the nearby Castle Vegtech site and from the Glastek/Joleen Way site could be captured by the extraction system. Pumping large volumes from the shallow zone might entrain contaminants from upgradient, crossgradient, or from sources presently unknown.

- There is no discussion of how pumping of the Tennant well will influence the containment system. The groundwater model should account for the operation of Tennant Well pumping full-time at 470 gpm.

- Manganese, lead, and nitrate were all detected in monitoring wells at elevated levels close to their respective primary or secondary MCLs. Our upcoming authorization of the proposed treatment system discharge will include a monitoring program to verify inorganic compounds and organic compounds found at upgradient cleanup sites do not pose a threat to water quality.

If you have any questions, please contact **A. John Mijares at (805) 549-3696** or Harvey Packard at (805) 542-4639.

Sincerely,

Roger W. Briggs
Executive Officer

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cc: Olin Correspondence List