



**Linda S. Adams**  
Secretary for  
Environmental Protection

# Air Resources Board

**Mary D. Nichols, Chairman**  
1001 I Street • P.O. Box 2815  
Sacramento, California 95812 • [www.arb.ca.gov](http://www.arb.ca.gov)



**Arnold Schwarzenegger**  
Governor

#07-07

November 7, 2007

Mr. Bob J. Hill  
Franzen-Hill Corporation  
1100 North J Street  
Tulare, California 93274-7939

Dear Mr. Hill:

Thank you for your letter dated May 4, 2007, in which you requested Air Resources Board (ARB) modification of the Hill-Vac Executive Order (EO) G-70-193 to reflect the manufacturing changes in the production of your cargo tankers. The Phase I and Phase II components will remain the same. The only difference will be the insulation and the wrap encapsulating the insulation. Currently, the cargo tank surface is insulated with a minimum thickness of two inches of rigid, seamless polyurethane foam that provides an insulating value of R-14. The exterior surface of the insulation surrounding the current cargo tank is then painted white or off-white to provide the reflectivity of 75 percent or better (see enclosure). The redesigned cargo tank surface will now be insulated with three inches of cellular polymer foam that provides an insulating value of R-15.9. This insulation will then be wrapped with 1/16" 304 stainless steel to achieve a better reflectivity value than the current method (see enclosure). Note that both cargo tankers will not have any insulation between the frame rails and can be built to a variety of shapes and sizes as long as all the EO requirements are satisfied. All cargo tankers with the Hill-Vac Stage II Vapor Recovery system will also have a sticker (see enclosure) affixed on the vehicle.

On the week of September 4, 2007, comparison tests were conducted between an existing and the redesigned cargo tanker by ARB staff at the SMUD vehicle storage facility in Sacramento, California. Both cargo tankers were filled at the same time with the same amount of fuel and positioned so that they would be exposed to equal amount of sun light. Pressure integrity testing was performed on both tankers to comply with leak decay requirements. The cargo tankers were conditioned to similar temperature and pressure values to avoid any significant variations between them. Ambient temperature, ullage temperature, ullage pressure and barometric pressure

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

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were monitored and recorded on both cargo tankers for a continuous period of 48 hours. Based on an engineering performance evaluation, it was determined that the redesigned cargo tanker performed as good as or better than that which is specified in Executive Order G-70-193.

Pursuant to sections 41955, 41956, and 41957 of the California Health and Safety Code, the approval or determination from three state agencies are a precondition to certification by ARB. We have received the appropriate approval or letters from the agencies listed below.

- Department of Food and Agriculture  
Division of Measurement Standards  
July 30, 2007
- Department of Industrial Relations  
Division of Occupational Safety and Health  
August 9, 2007
- Office of the State Fire Marshal  
Department of Forestry and Fire Protection  
October 3, 2007

The redesigned cargo tankers, when built according to the new insulating specifications and in conjunction with Executive Order G-70-193, will not adversely affect the Phase I or Phase II vapor recovery system. Therefore, the redesigned cargo tanker is certified to be used in motor vehicle fueling operations.

If you have any questions or need further assistance, please contact Sam Vogt at (916) 322-8922 or via email at [svogt@arb.ca.gov](mailto:svogt@arb.ca.gov), or Joe Guerrero at (916) 324-9487 or via email at [jguerrero@arb.ca.gov](mailto:jguerrero@arb.ca.gov).

Sincerely,



William V. Loscutoff, Chief  
Monitoring and Laboratory Division

Enclosure

cc: See next page

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cc: Kevin Graves  
State Water Resources Control Board

John Marvin  
Bay Area Air Quality Management District

Randy Matsuyama  
South Coast Air Quality Management District

Randy Smith  
San Diego County Air Pollution Control District

Jim Swaney  
San Joaquin Valley Air Pollution Control District

Gary Ma  
Yolo-Solano Air Quality Management District

**Current Cargo Tank Refueler**



**Proposed Cargo Tank Refueler**



**Sticker Affixed to All Cargo Tankers Manufactured by Franzen-Hill**

**This Vehicle is equipped  
with the Hill-Vac Vapor  
Recovery System**

**Executive order G-70-193  
U.S. Patent 6,170,275 B1  
1-800-655-3436**