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## State Water Resources Control Board

October 26, 2012

Rick Whately  
Regional Sales Manager – Phoenix System  
Xerxes Corporation – A ZCL Company  
7901 Xerxes Ave.  
Minneapolis, MN 55431-1288

Dear Mr. Whately:

### **XERXES CORPORATION “PHOENIX SYSTEM”**

This letter is in response to your inquiry concerning the eligibility of installing the Phoenix System (PS) in underground storage tanks (USTs) in California. The State Water Resource Control Board (State Water Board) staff has determined that the PS system is a rigid bladder system as defined in section 2611 of chapter 16, title 23 of the California Code of Regulations (UST regulations). As such, the PS can be utilized within California in accordance with specified requirements and limitations. As a rigid bladder system, the PS is required to meet all applicable laws and regulations set forth in California Health and Safety Code (CH&SC), chapter 6.7 and the UST regulations. These requirements are primarily contained in sections 2660 and 2664 of the UST regulations and include, but are not limited to, the following:

- Installing a bladder system into an existing UST is considered to be an upgrade for that UST. As such, any owner or operator installing the PS into an UST is required to meet all applicable requirements of section 2660 of the UST regulations. Upgrades shall be properly conducted in accordance with article 6 of the UST regulations and any additional manufacturer specifications. (UST regulations, § 2660(a).)
- Before upgrading in accordance with section 2660, the owner or operator shall prove to the satisfaction of the local agency that the UST system has not caused an unauthorized release. The owner or operator shall notify the local implementing agency in advance of taking any soil samples. (UST regulations, § 2660(i).)
- In California, bladder systems may be installed only in USTs which store motor vehicle fuel. (UST regulations, § 2664(a).)
- In accordance with the Underwriter’s Laboratory (UL) certification of the PS, the interstitial space of the PS may be monitored for leakage by an interstitial sensor, vacuum (up to a maximum of 10.1 in Mercury), pressure (up to a maximum of 5 psi), or hydrostatic brine<sup>1</sup> (specific gravity not exceeding 1.3). UST Regulations stipulate that the interstitial space

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<sup>1</sup> Hydrostatic monitoring is not an appropriate application for monitoring the interstitial of steel tanks.

between the tank and the bladder shall be monitored using a continuous monitoring system which meets the requirements of section 2643(f). (UST regulations, §§ 2664(b)(2) & 2632(c)(2)(A).)

- In accordance with UST Regulation section 2631(j) prior to installation an UST owner or operator is required to provide a manufacturer's affirmative statement of compatibility for stored substances not covered by the UL certification.
- Installation of the PS in a double-walled tank system with failed secondary containment is limited to tanks installed post-January 1, 1984 and pre-July 1, 2003 equipped with overflow prevention with no manual override that meets UST Regulation, section 2636(a)(1) by either: 1) restricting delivery of flow to the tank at least 30 minutes before the tank overfills (The flow restriction must occur when the tank is filled to no more than 95 percent of capacity, and must activate an audible alarm at least five minutes before the tank overfills.); or 2) shutting off the flow of fuel to the tank when the tank is 95 percent full. (UST regulations, § 2635(b)(2)(B) & (b)(2)(C).)

The PS also must be installed, maintained, and operated in accordance with the requirements and limitations set forth in the UL certification as well as the attached ZCL PS installation reference documents *LL-WIN-1 Steel Tank Lining* and *LL-WIN-2 FRP Tank Lining*. These requirements and limitations include, but are not limited to, the following:

- Single-walled and double-walled tank systems meeting *UL 1316 - Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures*, *UL 58 - Standard for Safety for Steel Underground Tanks for Flammable and Combustible Liquids*, or *UL 1746 - External Corrosion Protection Systems for Steel Underground Storage Tanks*.
- Tanks with capacities up to a maximum of 33,333 gallons and up to a 120 inch diameter.
- Tank systems that have not deflected more than 2 percent of the nominal diameter.
- Steel tanks that have an operational cathodic protection system for the prevention of corrosion of the existing tank shell.
- The tank has not been abandoned or left unattended for an extended period of time.
- Only those contractors specifically authorized, trained, and certified by ZCL Composites Inc. are permitted to install any portion of the PS.
- Prior to storage of the hazardous substance the appropriate leak testing, as designated by the ZCL PS installation reference documents *LL-WIN-1 Steel Tank Lining* and *LL-WIN-2 FRP Tank Lining*) and UST Regulation, must be performed.
- UST systems not monitored through the use of vacuum, pressure, or hydrostatic liquid are required to test the secondary containment in accordance with UST Regulation, section 2637 using a method developed by ZCL Composites Inc. for the PS.

Since the installation of the PS is an upgrade pursuant to section 2660 of the UST regulations, the facility owner or operator must seek approval and obtain any required permits from the appropriate local agency before installing the PS. In addition, the facility owner or operator may be required to

obtain approval from other authorities having jurisdiction, such as the local Fire Marshall or the California Air Resource Board, before installing the PS.

Installation of the PS does not convert an existing<sup>2</sup> tank into a new<sup>3</sup> tank system. UST systems with a PS installed will be regulated according to the tank installation date and as a UST containing a rigid bladder system. Please note that existing single-walled USTs are regulated under CH&SC section 25292.

The Xerxes Corporation or ZCL Composites Inc. must notify State Water Board staff immediately of any revisions to the ZCL PS installation reference documents *LL-WIN-1 Steel Tank Lining* and *LL-WIN-2 FRP Tank Lining* (November 18, 2009) or to the UL approval (September 1, 2006) for the PS.

If you have any questions pertaining to the details of this letter, please contact Mr. Cory Hootman at (916) 341-5668 or [chootman@waterboards.ca.gov](mailto:chootman@waterboards.ca.gov).

Sincerely,



Laura S. Fisher  
UST Leak Prevention Unit &  
Office of Tank Tester Licensing

Enclosure

cc: Julie Osborn, Staff Counsel  
Office of Chief Counsel  
State Water Resources Control Board

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<sup>2</sup> "Existing underground storage tank" means a UST installed prior to July 1, 2003.

<sup>3</sup> "New underground storage tank" means a UST which is not an existing UST.