



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

June 9, 2004

David Bruny
Fabco Industries Incorporated
170 Wilbur Place, Suite 12
Bohemia, New York 11716

Re: **Fablite Pure Flow Filter**

Dear Mr. Bruny:

The Bureau of Petroleum Storage Systems hereby reaffirms its acceptance of the Fablite Pure Flow zeolite-based molecular filtration system for removal of trace metals, hydrocarbons, chlorinated hydrocarbons and other suitable contaminants from water. This letter updates your firm's name and street address, web page address, and supersedes all of our previous acceptance letters for this product. The current web address is www.fabco-industries.com.

As indicated in your literature, the Fablite Pure-Flow filter uses a zeolite-based (aluminosilicate) molecular filter media called Fablite IIC, which is capable of absorption, adsorption, ion-exchange, or chemisorption, depending on the material being processed. Enclosure 1 contains additional information about the filter and its media that the Bureau of Petroleum Storage Systems would like to pass along to readers of this letter.

This acceptance applies only to the jurisdiction of this Bureau, which is the cleanup of petroleum pursuant to Chapter 62-770, Florida Administrative Code (F.A.C.). Other bureaus within the Department of Environmental Protection, or other state agencies and local governments may choose to recognize it if their needs and regulations are similar. This Bureau, however, is not responsible for applications beyond its jurisdiction. We suggest that a copy of this letter be provided in the appendix of site-specific Remedial Action Plans proposing the use of the Fablite Pure-Flow Filter, so that technical reviewers throughout the state will be informed that the Bureau has evaluated the product from a regulatory standpoint.

While the Bureau does not endorse specific or brand name remediation products or processes, it does recognize the need to determine their acceptability from an environmental standpoint with respect to applicable rules and regulations, and the interests of public health, safety and welfare. Vendors must then market the products and processes on their own merits regarding performance, cost and safety in comparison to competing alternatives in the marketplace. In no way, however, shall this regulatory acceptance letter be construed as certification of product performance. Additionally, the Department emphasizes a distinction between its regulatory "acceptance" and an approval. Products and processes are accepted but they are not approved.

It is also not a requirement that a particular remediation product or process have an official acceptance letter in order for it to be proposed in a site-specific Remedial Action Plan. The plan, however, must contain sufficient

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information about the product or process to show that it meets all applicable and appropriate rules and regulations.

The Bureau reserves the right to revoke its acceptance of a product or process if it has been falsely represented. Additionally, Bureau acceptance of any product or process does not imply it has been deemed applicable for all cleanup situations, or that it is preferred over other treatment or cleanup techniques in any particular case. A site-specific evaluation of applicability and cost-effectiveness must be considered for any product or process, whether conventional or innovative, and adequate design details must be provided in a site-specific Remedial Action Plan. You may contact me at (850) 877-1133, extension 29.

Sincerely,

Rick Ruscito, P.E.
Ecology and Environment, Inc.
Bureau of Petroleum Storage Systems
Petroleum Cleanup Section 6

Rebecca S. Lockenbach
FDEP Section Leader
Bureau of Petroleum Storage Systems
Petroleum Cleanup Section 6

c: T. Conrardy - FDEP MS 4530/Tallahassee

History:

ppl 153
inn_061.doc
5/30/2001

inn_061a.doc
8/16/2001

ppl 239
inn_061b.doc
6/9/04

ADDITIONAL INFORMATION ABOUT THE FABLITE PURE FLOW FILTER AND FABLITE IIC MEDIA

1. Configuration: The prototype Fablite Pure Flow filter system was designed as a portable unit for the treatment of effluent produced by the washing of military jet engines. The design objectives included removal of cadmium from the effluent, and production of a spent filter media that would pass the Toxicity Characteristic Leachate Procedure (TCLP) test in order for it to be disposed as a non-hazardous material. The prototype operated as a batch mode closed-loop system that recirculated effluent between a 55-gallon drum and the filter itself for periods of time ranging from 3 hours to overnight. The manufacturer indicates that the zeolite filter media can be operated in other modes, such as continuous flow or applied directly to a spill. It is the opinion of the Bureau of Petroleum Systems that the Pure Flow filter can be adapted for use in the cleanup of contaminated sites in Florida, especially when there is a need to remove metals from groundwater that is pumped through a treatment system.
2. Zeolite filter media: The key component of the Fablite Pure Flow filter system is the zeolite filter media. Zeolites are porous crystalline aluminosilicate structures whose internal pores serve as surface area for adsorption. They are efficient adsorption materials by virtue of their inherent high ratio of pore surface area to volume. The manufacturer of the Fablite IIC zeolite filter media indicates that its pore size ranges from 3 to 10 angstroms and that it provides 800 square meters of surface area per gram. Its bulk density is 67.5 pounds per cubic foot.
3. Operation: The manufacturer has indicated that pressurized operation of the zeolite filter media speeds up the treatment process. It was also found during operation of the prototype that a pre-filter is necessary to remove debris that will otherwise clog the media before it has been fully spent.
4. Design: For Remedial Action Plans that serve as the design document for systems that will clean up contaminated sites, the Bureau of Petroleum Storage Systems believes that the design considerations for a Pure Flow filter will be similar to those of conventional filters, including the sizing of motors, the absorption capacity of the media, pressure drops, and flow rates.
5. Safety: The Bureau of Petroleum Storage Systems believes that safety considerations associated with a Fablite Pure Flow filter that will be part of a remediation system for the cleanup of a contaminated site will be similar to those of a conventional filter. The National Electrical Code should be observed to ensure that electrical components are appropriately rated when used in hazardous Class I, Group D, Division 1 or Class I, Group D, Division 2 areas, to prevent fires. Appropriate instrumented shutdown features and/or pressure reliefs to prevent over-pressurization should also be included, if necessary, to maintain a safe working environment.
6. Disposal of spent media: The manufacturer indicates that the spent Fablite IIC zeolite media has passed a number of California tests regarding Land Disposal Restrictions and the TCLP for non-hazardous disposal. A word of caution was provided as a reminder, though, that Fablite IIC, when oversaturated with organic liquids may remain hazardous. In addition to these reminders by the manufacturer, the Bureau of Petroleum Storage Systems provides a reminder that the onus shall be on the user regarding proper disposal of spent filter media when

the Fablite Pure Flow filter system is used at a remediation site in Florida.

7. Soil cleanup: It has also been indicated that the zeolites can be used as an additive in the cleanup of contaminated soil, by mixing them into the soil. An application in Argentina is cited. The Department has no objection to the proposal of this method in Remedial Action Plans, provided it is the most cost-effective method in comparison to other viable alternatives.

Additionally, all appropriate rules and regulations must be met in regard to sampling of the treated soil for contaminants of concern and leachability. Provision for the proper maintenance of caps shall be included in remediation plans for sites where such an engineering control is proposed.

Lastly, if the contaminants in the soil are adsorbed by the zeolites but not immediately destroyed or degraded, then institutional controls on the use of the treated soil may be required.