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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 18, 2013

Ms. Cyndi Benson
Harmsco Filtration Products
P.O. Box 14066
North Palm Beach, Florida 33408

Subject: Challenge Study Review
Notification of Change in Housing Design
New Harmsco® MUNI FL-304 Housings with Model HC/170-LT2 Cartridge Filters

Dear Ms. Benson:

On October 1, 2012, the Texas Commission on Environmental Quality (TCEQ) received your letter dated August 21, 2012. Your letter and included documentation was submitted in accordance with federal and state requirements for changes in approved challenge tested cartridge filtration systems. The TCEQ previously reviewed the Challenge Test Report for the Harmsco® Model HC/170-LT2 Cartridge Filters and granted pathogen removal credits for this cartridge filter when used with Harmsco® Hurricane Model HUR 1X170FL, 3X170FL, 5X170FL, and 8XFL170FL housings in our letter dated June 22, 2012.

Based on our review of the changes to the cartridge filter housing, new chanllenge testing will not be required.

The Harmsco® Model HC/170-LT2 Cartridge Filters will continue to receive the same removal credits for *Cryptosporidium* oocysts and *Giardia lamblia* cysts removal. We have restated these removal credits below and the conditions for the granted removal credits.

TCEQ Cartridge Specific Granted Removal Credits			
Bin & Configuration	**Crypto**	**Giardia**	**Viruses**
Bin 1 Individual	2.0-log	3.0-log	0.0
Bin1 Series	2.0-log	3.0-log	0.0
Bin 2, 3, 4 Individual	2.0-log	3.1 log	0.0
Bin 2, 3, 4 Series	2.0-log	3.1-log each cartridge filter, But no more than 6.7-log for two in series	0.0

The above removal credits for *Cryptosporidium* oocysts and *Giardia lamblia* cysts were based on:

1. For public water systems assigned Bin 1 classification due to the occurrence of *Cryptosporidium* oocysts in their raw water sources, the minimum required removal for *Cryptosporidium* oocysts is 2.0-log and 3.0-log inactivation and/or removal for *Giardia lamblia* cysts. The Harmsco® Model HC 170 – LT2 cartridge filter demonstrated 3.6-log removal of the 2.0-micron surrogate and the use of a safety factor would result in a removal credit greater than what is required.
2. For public water systems assigned Bin 2, 3, or 4 classifications due to the occurrence of *Cryptosporidium* oocysts in their raw water sources and proposing to use the Harmsco® Model HC 170 – LT2 cartridge filter, only the allowed removal credit was granted because:
    a. Although a greater inactivation and/or removal treatment than 2.0-log is required for *Cryptosporidium* oocysts, 40 Code of Federal Regulations (CFR) §141.719(a) only allows up to 2.0-log removal credit to be granted for individually tested cartridge filters; and
    b. The Harmsco® Model HC 170 – LT2 cartridge filter was not challenge tested in series and cannot receive up to 2.5-log removal credit allowed by 40 CFR §141.719(a) for cartridge filters challenged in series.
3. Please note that the federal rules do not address the inactivation and/or removal for *Giardia lamblia* cysts at public water systems assigned Bin 1, 2, 3, or 4 classifications due to the occurrence of *Cryptosporidium* oocysts in their raw water sources. However, when cartridge filters are used for the removal of *Giardia lamblia* cysts, the TCEQ has chosen to apply a safety factor of 0.5-log to:
    a. The demonstrated challenge test removal for a single cartridge filter installed individually;
    b. The sum of two or more individually challenged cartridge filters installed in series; and
    c. The demonstrated log removal credit for series challenged cartridge filters.

The above TCEQ approved removal credits are valid only:

1. For the submitted Harmsco® Model HC 170 – LT2 cartridge filter model and not for any other Harmsco cartridge filter models or variations of this model.
2. For the Harmsco® Model HC 170 – LT2 cartridge filters without any modifications to the design and construction as challenged.
3. If the Harmsco® Model HC/170 – LT2 cartridge filters are operated:
    a. At a pressure drop no greater than 30 pounds per square-inch (psi);
    b. At a flow rate no greater than 100 gallons per minute (gpm); and
    c. In a Harmsco®
        i. Hurricane Swing Bolt Filtration Systems with Model HUR 1X170FL, 3X170FL, 5X170FL, or 8X170 FL housings; or

ii. Municipal Filtration Systems with Model MUNI-1-2FL-304, 3-3FL-304, 5-4FL-304, or 8-6FL-304 housings.

4. All cartridge filters and o-rings must be intact and the integrity cannot be compromised to receive the granted removal credit.

5. For the current Federal and State statutes and rules.

The submittal included the following information:
The difference between the Harmsco® Hurricane Swing Bolt four Model HUR housings and the four new Municipal Filtration Systems Model MUNI housings:

- The four Municipal Filtration Systems Model MUNI housings include:
  - Side and bottom ball valves for draining the housings; and
  - Pressure gauges on the inlet and outlet piping for differential pressure monitoring.

  Internally the four Model MUNI housings are the same as the corresponding (based on the number of cartridge filters that can be installed per housing) four Hurricane Swing Bolt Model HUR housings.

- The Model HC/170 – LT2 cartridge filters are constructed of pleated microglass design;

- Each Model HC/170 – LT2 cartridge filter has the following dimensions:
  - 30.75 inches in length;
  - 4.0 inches inner diameter;
  - 7.75 inches outer diameter; and
  - A surface area of 120 square-feet.

- The four Harmsco® Hurricane Swing Bolt Model HUR housing models, Municipal Filtration Systems four Model MUNI housings, and Model HC/170 – LT2 cartridge filters conform to American National Standards Institute (ANSI)/NSF Standard 61 and have been certified by a testing organization accredited by ANSI.

Please provide a copy of this letter to each of your Texas customers and their consulting engineers. This letter is not to be construed as:

- A TCEQ-granted exception for a public water system to use the challenge tested cartridge filters discussed in this letter;
- TCEQ approval for a public water system to install the referenced cartridge filters; or
- TCEQ approval for a public water system's required concentration × time (CT) study.

Each public water system must request and receive **site-specific approval** to use cartridge filtration in accordance with 30 TAC §290.42(g) and §290.39(l).

If you have questions or need further assistance, please contact James "Red" Weddell, P.E. of my staff by telephone at (325) 481-8056 or by email at james.weddell@tceq.texas.gov or by correspondence at the following address:

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Sincerely,

Joel P. Klumpp, Team Leader
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Plan & Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

JPK/JSW/

cc: Ms. Cindy Haynie, TCEQ Technical Review & Oversight Team – MC 159
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