



December 15, 2011

HELLENBRAND INCORPORATED
JILL MCDONALD
404 MORAVIAN VALLEY ROAD
WAUNAKEE WI 53597

VERSACOLD-AMERICOLD
W8876 HIGHWAY X
DARIEN WI 53114

Re: Description: WATER TREATMENT DEVICE - SITE SPECIFIC/COMMERCIAL
Manufacturer: VERSACOLD-AMERICOLD
Product Name: VERSACOLD - AMERICOLD
Model Number(s): ARSENIC REDUCTION USING IRON OXIDE BASED ADSORPTION MEDIA
(anion based macroporous polystyrene containing functional groups of hydrous
iron oxide)
Product File No: 20110372

The specifications and/or plans for this site specific water treatment system has been reviewed and determined to be in compliance with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of December 15, 2013.

This approval is contingent upon compliance with the following stipulation(s):

- This plumbing plan approval supersedes the plan approval issued under transaction I.D. 2020297. The only alteration was a change in the dimensions of the chlorination retention tanks due to onsite space limitations. The two 24 x 72-inch tanks were replaced with two 18 x 65-inch tanks. This is a non-functional change that does not affect the efficacy of treatment.
- These devices have undergone sufficient testing to document the device's ability to reduce only those contaminants and/or substances as specified in this approval letter when the product is installed and maintained in strict accordance with the manufacturer's published instructions.
- Where the Department of Natural Resources (DNR) has jurisdiction, a written approval may be required prior to installation of this product in a water supply system to reduce the concentration of a contaminant that exceeds the primary drinking water standards contained in ch. NR 809, Wis. Admin. Code, the enforcement standards contained in ch. NR 140, Wis. Admin. Code, or for a water supply system that is subject to a written advisory opinion by the DNR. For more information contact the DNR Section of Private Water Systems, P.O. Box 7921, Madison, WI 53707, telephone (608) 267-9787.
- The finished installation must undergo a final inspection prior to the treated water being used for consumptive purposes. The Plumbing Consultant having jurisdiction in this area is Scott Altenberger. Mr. Altenberger can be reached via the following:

Phone: 608-235-0557
E-mail: scott.altenberger@wi.gov

If the treated water is used for consumptive purposes prior to passing the final inspection, then this approval may be rendered null and void and the devices ordered removed. The Plumbing Consultant shall provide a written indication of the results of the final inspection to the system owner.

When the final inspection has been passed, the Plumbing Consultant will notify the Wisconsin Department of Natural Resources (WDNR) Field Staff having authority over the well. The WDNR will then monitor the quality of the treated water to its satisfaction. Monitoring advice, which the WDNR is

free to accept or reject, is provided elsewhere in this letter. The WDNR Field Staff having authority over this well is Rick Engelfried. Mr. Engelfried can be contacted via the following:

Phone: 262-884-2361
E-mail: engelw@dnr.state.wi.us

➤ The suggested monitoring interval for this installation is quarterly. The following tests should be performed:

1. Total dissolved arsenic;
2. Free chlorine residual;
3. Manganese (NR 140.10, Table 1)
4. Total iron

The water quality samples should be collected at a time of day when the devices are as near peak demand as possible. Untreated and treated water samples should be collected together in sets, the untreated samples taken upstream of all water treatment devices and the treated samples for arsenic and free chlorine downstream of all water treatment devices. The treated water samples for manganese and total iron should be taken downstream the water softeners, but prior to the arsenic reduction devices.

It is important that the monitoring of these systems be continued on an ongoing basis because the arsenic treatment media has a finite capacity and is not regenerated onsite. This means that eventually the arsenic treatment media must be replaced with new media of the same specific type for the treatment to remain effective. The goal is to replace the arsenic treatment media prior to arsenic breakthrough. For this reason, it makes sense to increase the frequency of sampling as the arsenic treatment devices approach the end of their estimated service life.

- Flow controls shall be installed to preclude each arsenic reduction device from exceeding its maximum rated service flow rate.
- No bypass piping shall be installed on these arsenic reduction devices.
- Any wall hydrant that is not served by these arsenic treatment devices must have one, or more, of the following:
1. The handles of the hydrant shall be removed;
 2. The hydrant shall be capped and sealed using solder; or
 3. Signage shall be posted immediately above the hydrant indicating the water is unfit for human consumption
- All water distribution piping shall be marked as required by Table 82.40-1a.
- If these approved devices are modified or additional assertions of function or performance are made, then this approval shall be considered null and void, unless the change is submitted to the department for review and the approval is reaffirmed.

Based on testing data submitted to and reviewed by the department, this approval recognizes that these devices will reduce the concentration of contaminants as specified on pages 1 through 3 of this letter.

DISSOLVED ARSENIC REDUCTION CAPABILITIES

Rated Service Flow Rate @ Pressure Loss Per Tank: 14 gpm @ 10 psig

Estimated Capacity per tank: 36,000 bed volumes (x 4 tanks)

Tested Contaminant	Tested Influent Concentration (mg/l) ¹
Pentavalent Arsenic (As ⁺⁵)	0.0231

1 = milligrams per liter (mg/l) are equivalent to parts per million (ppm) **± = plus or minus**
≤ = less than or equal to

To qualify for pentavalent arsenic reduction as described above, the water must first be chlorinated such that all trivalent arsenic is converted to pentavalent arsenic and detectable free chlorine residuals exist prior to the arsenic reduction devices at all times. Iron must be ≤ 0.3 mg/l and manganese must be ≤ 0.05 mg/l prior to the arsenic reduction devices at all times. The free chlorination pretreatment step (i.e. chemical injection via positive displacement pump) is a necessary part of this system approval as is iron and manganese pretreatment step (i.e. water softeners). The arsenic reduction devices must reduce the influent pentavalent arsenic concentrations such that all effluent concentrations are ≤ 0.010 mg/l. There are 4 treatment tanks, each capable or providing 14 gpm. As the water demand increases, additional tanks come on line to meet demand up to a maximum of 56 gpm (i.e. all four tanks).

These devices were tested under controlled laboratory, or field, conditions. The actual performance of these devices for this specific end use installation may vary from the tested conditions based on local factors such as water pressure, water temperature and water chemistry.

The department is in no way endorsing these devices, this specific installation or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

Glen W. Schlueter
Engineering Consultant-Plumbing Product Reviewer
Bureau of Integrated Services
Safety and Buildings Division
Department of Safety and Professional Services
(608) 267-1401 **Phone**
(608) 267-9566 **Fax**
glen.schlueter@wi.gov **Email**
8:00AM – 4:30PM CT **Work Hours**
GWS:gws