



September 25, 2015

Tyco International  
Attn: Mr. Joseph Janeczek  
9 Roszel Rd  
Princeton NJ 08540

Tyco FTC Site  
2700 Industrial Parkway South  
Marinette WI 54143  
Attn: Mr. Scott Stacy

Subject: Infiltration/Injection Temporary Exemption Request for  
Tyco FTC Site, 2700 Industrial Parkway, Marinette, Wisconsin  
WDNR BRRTS Activity # 03-38-001345 FIN#14905

Dear Mr. Janeczek and Mr. Stacy:

The purpose of this letter is to provide a temporary exemption for the injection of a remedial material into groundwater. A request for a temporary exemption to inject emulsified vegetable oil and or lactate into groundwater at the Ansul Fire Technology Center was received from your consultant, Eric Frauen of O&M, Inc., on August 27, 2015. A review fee of \$700 was submitted on August 27, 2015. This temporary exemption is intended to provide assurances to Tyco Safety Products that the environmental cleanup being conducted in response to a release of contaminants on the Property is being conducted in accordance with s. 292.12, Wis. Stats.

The proposed injection is a pilot test utilizing emulsified vegetable oil and or lactate to remediate TCE in the shallow aquifer on site.

**Determination on the NR 812 Injection Prohibition:**

The injection prohibition under s. NR 812.05, Wis. Adm. Code, is not applicable in this case because the proposed action is a Department-approved activity necessary for the remediation of groundwater. This letter serves as your approval from the Department to inject emulsified vegetable oil and or lactate, to treat TCE in groundwater, in accordance with this temporary exemption.

**NR 140 Temporary Exemption:**

Department approval is hereby granted to Tyco International for the injection of emulsified vegetable oil and or lactate to groundwater on the Tyco FTC Site property, with certain terms and conditions. The expiration date of this temporary exemption shall be 2 years from the date of this letter.

The need to obtain a temporary exemption for the injection of a remedial material for which a groundwater quality standard has not been established is required under s. NR 140.28 (1) (d), Wis. Adm. Code. Based on the information provided by your consultant, it appears the requirements for a temporary exemption for the injection of a remedial material for which a groundwater quality standard has not been established under s. NR 140.28 (1) (d) have been or will be met, in accordance with s.

NR 140.28 (5) (c) and (d), Wis. Adm. Code.

Department approval is granted with the following terms and conditions:

A. General:

1. The remedial action for restoring contaminated groundwater or soil, and any infiltrated or injected contaminated water and remedial materials, shall achieve the applicable response objectives required by s. NR 140.24 (2) or s. NR 140.26 (2), Wis. Adm. Code, within a reasonable period of time.
2. The type, concentration and volume of substances or remedial material to be infiltrated or injected shall be minimized to the extent that is necessary for restoration of the contaminated groundwater.
3. Any infiltration or injection of contaminated water or remedial material into groundwater shall not significantly increase the threat to public health or welfare, or to the environment.
4. No uncontaminated or contaminated groundwater, substance or remedial material shall be infiltrated or injected into an area where a floating non-aqueous liquid is present in the contaminated groundwater.
5. There shall be no expansion of soil or groundwater contamination, or migration of any infiltrated or injected contaminated water or remedial material, beyond the edge of previously contaminated areas, except that infiltration or injection into previously uncontaminated areas may be allowed if the Department determines that expansion into adjacent, previously uncontaminated areas is necessary for the restoration of the contaminated groundwater, and the requirements of s. NR 140.18 (1), Wis. Adm. Code will be met.
6. All necessary federal, state and local licenses, permits and other approvals are obtained and compliance with all applicable environmental protection requirements is required. A WPDES general permit for Discharge of Contaminated Groundwater from Remedial Action Operations is required for this action.

B. Specific:

7. The remedial materials to be injected to the groundwater shall be limited to emulsified vegetable oil and or lactate
8. The remedial material and injection project shall be as described in the ERD Pilot Test Work Plan.
9. O&M, Inc shall notify the Department of field activities no less than one (1) week before implementation.
10. In the monitoring plan, include screening for soil vapor as a best management practice.
11. Remediation progress reports shall be submitted with the semi-annual progress reports. The progress reports shall include the groundwater monitoring results. The first report should be submitted not more than 6 months after the first injection. Recommendations as to the next phase of sampling and/or the need for additional treatment shall be included in a future report. This report shall be submitted as soon as the necessary information is available, and must be submitted prior to the expiration date of this temporary approval.
12. Any significant changes based on information from the injection groundwater monitoring reports or results shall be submitted to the Department for approval prior to the changes being implemented at the Tyco FTC site. This includes, but is not limited to, adjustments to the volume/mass of the media injected, additional injection points, number of injection events, and/or changes in the type of remediation media used in the injection points.
13. Modifications to the sampling schedule may be requested.
14. In the event of future injection activities, the responsible party may apply for an extension of this approval. A request for an extension of this approval must be received by the Department before the expiration date.

15. Any permit extension approvals will be dependent on WI DNR review of site-specific data or any other information it deems necessary.
16. Upon completion of the project, the injection holes must be abandoned in accordance with s. NR 141.25, Wis. Adm. Code, and later topped off with grout or native soils if settling occurs, unless converted to NR 141 complying monitoring wells, or an alternative approved by the DNR Project Manager.

Monitoring Conditions:

1. That the actual volume injected be recorded on an hourly basis for each day of the project.
2. That baseline monitoring be performed prior to the first injection event, for the following groundwater parameters, at the following wells:
  - a. VOC,s methane, total orgai carbon, dissolved iron and manganese, sulfate, dissolved oxygen and oxygen reduction potential
  - b. at monitoring wells: MW-6D, PZ-2,PZ-16D and PZ-17D
3. That after completion of the injection phase of the remedial action (between 30 to 40 days), all monitoring wells be sampled for the parameters listed in #2.a.
4. That a Site Specific Health and Safety Plan be followed.
5. That the injection is performed at less than 100 psi at a rate which prohibits solution mounding in the aquifer, and plume disfigurement.

Failure to adhere to the provisions of this temporary exemption may result in the Department requiring revisions to the remedial action design, operation or monitoring procedures, or the revocation of this exemption and the implementation of an alternative remedial action to restore soil or groundwater quality, or both.

If you have any questions regarding this letter, please contact me at 920-424-7890 or [kevin.mcknight@wisconsin.gov](mailto:kevin.mcknight@wisconsin.gov).

Sincerely,



Kevin D. McKnight  
Hydrogeologist  
Remediation & Redevelopment Program

cc: Eric Frauen O&M, Inc – via email  
Brian Austin, DG/5  
Bill Phelps, DG/5  
David Haas