



December 2, 2016

M(s). Shelly Billingsley
Director of Public Works
City of Kenosha
Kenosha, WI 53140

Subject: Temporary Injection Exemption Request for Former Kenosha Engine Plant, 5555 30th Avenue, Kenosha WI 53140, BRRTS # 02-30-000327, FID # 230004500

Dear M(s). Billingsley:

The purpose of this letter is to provide a temporary exemption for the injection of a remedial material into groundwater. On October 24, 2016 the Wisconsin Department of Natural Resources (WDNR) received a request for a temporary exemption to pilot inject Sodium Permanganate and Enhanced Reductive Dechlorination (ERD) using ABC®+ and Bioaugmentation to treat targeted CVOCs in the soil and groundwater at the 5555 30th Avenue, Kenosha, Wisconsin. The request was submitted by AECOM the project's environmental consultant, who is representing the 5555 30th Avenue, Kenosha WI including the submission of a \$700 review fee. AECOM also made a request for a WPDES General Permit for Contaminated Groundwater for Remedial Action Operations at the site dated September 30th, 2016. A WDNR injection approval and a WPDES permit are required prior to the injection of remedial materials into the subsurface. This temporary exemption provides assurance to the City of Kenosha that the proposed diluted oxidant method proposed for the environmental cleanup conforms to s. 292.12, Wis. Stats. WDNR approved the Remedial Action of this site on August 18 2016 which was modified on August 22, 2016

AECOM proposes to pilot test 7% ABC®+, a mixture of lactates, fatty acids, glycerol, phosphate buffer and zero-valent iron (ZVI) and RTB-1®, commercial culture of Dehalococcoides (DHC) solution. The pilot study will consist of injecting sodium permanganate at six to eight locations. The injection point spacing will be 20 feet with a 10 foot radius. Sodium permanganate and any catalyst will be diluted with portable water to a vendor recommended concentration of 2.7 to 4.0%. Injection will be through direct push of the diluted oxidant. The saturated treatment zone ranges in depth from about 8 feet bgs to 20 feet bgs with a thickness of 12feet treat targeted CVOCs in the soil and groundwater at the 5555 30th Avenue, Kenosha, Wisconsin

Determination on the NR 812 Injection Prohibitions:

The injection prohibition under s. NR 812.05, Wis. Adm. Code, is not applicable in this case because the proposed action is a WDNR-approved activity necessary for the remediation of soil and groundwater. This letter serves as your approval from the WDNR to inject the proposed diluted oxidant method to treat CVOCs, including PCE, trichloroethylene (TCE), and breakdown products, cis-1, 2-dichloroethene (cis-1, 2-DCE) and vinyl chloride (VC) in groundwater, in accordance with this temporary exemption.

NR 140 Temporary Exemptions:

WDNR approval is hereby granted to AECOM for the injection of the proposed in-situ enhanced reductive dechlorination using in-situ blending methods at the Former Kenosha Engine Plant, 5555 30th Avenue, Kenosha,

WI with certain terms and conditions. The expiration date of this temporary exemption must be less than 5 years, per NR 140.28(5) (e) 1. 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 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 7% ABC®+, a mixture of lactates, fatty acids, glycerol, phosphate buffer and zero-valent iron (ZVI) and RTB-1®, commercial culture of Dehalococcoides (DHC) solution to treat targeted CVOCs in the soil and groundwater at the Former Kenosha Engine Plant, 5555 30th Avenue, Kenosha, Wisconsin
8. The remedial material and injection project shall be as described in AECOM's October 24, 2016 request.
9. AECOM notify the Southeast Region WDNR Project Manager of field activities no less than one (1) week before starting the injection.
10. Include soil vapor screening, using a PID, as a best management practice as part of the monitoring plan.
11. Remediation progress reports shall be submitted semi-annually, and shall include the groundwater Monitoring results. The first report should be submitted not more than three 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 prior to the expiration date of this temporary approval.
12. Any significant changes to the injection process, based on information from the injection groundwater Monitoring reports or results shall be submitted to the WDNR for approval prior to the changes being implemented to plot test 7% ABC®+, a mixture of lactates, fatty acids, glycerol, phosphate buffer and zero-valent iron (ZVI) and RTB-1®, commercial culture of Dehalococcoides (DHC) solution to treat

targeted CVOCs in the soil and groundwater at the Former Kenosha Engine Plant, 5555 30th Avenue, Kenosha. This includes, but is not limited to, adjustments to the volume/mass of the media injected, additional injection points, number of Injection/delivery 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. The responsible party may apply to the WDNR for an extension of this approval in the event that future injection/delivery activities are required, and the WDNR must receive any extension request before the expiration date of this approval.
15. The WDNR will review all permit extension requests, site-specific data and or any other necessary information.
16. Upon completion of the project, the placement monitoring wells 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 NR141 complying monitoring wells, or through an alternative approved by the WDNR Project Manager.

Monitoring Conditions: In addition to your plan, it is your responsibility to meet all of the following approval conditions during and related to your proposed infiltration/injection procedures at this site. The conditions are:

1. Maintain and follow the Site Specific Health and Safety Plan in accordance with the Occupation Safety and Health Administration (OSHA) and the United States Environmental Protection Agency (USEPA) health and safety standards for hazardous waste workers.
2. If a chlorinated water source (i.e. municipal water) is used as the make-up water, it shall be filtered through an activated carbon filter or method proposed in your report to remove chlorine.
3. Record the start and stop times and the actual volume of the proposed in-situ enhanced reductive dechlorination using in-situ blending methods injected into each Injection or delivered to each placement monitoring well.
4. Monitor the ambient air in and around the work area during the proposed in-situ enhanced reductive dechlorination using in-situ blending methods.
5. Monitor the headspace of all injection points prior to each the proposed in-situ enhanced reductive dechlorination using in-situ blending methods.
6. Monitor the headspace of all groundwater monitoring wells prior to each groundwater monitoring event.
7. Conduct vapor monitoring at the closest proposed monitoring well locations, including a measurement of percent (%) LEL every 15 minutes during the first hour of each infiltration event.
8. Immediately notify the WDNR if any new groundwater quality enforcement standards are exceeded during monitoring.
9. Notify digger's hotline and all owners of utility-lines if your project requires this. Also notify the local fire department prior to injection activities, and ensure that any representatives of these entities be allowed to observe the injection activities, as needed after completing the injection, sample all monitoring wells for applicable parameters quarterly.
10. Ensure that the injection is performed at less than 100 psi at a rate which minimizes solution mounding in the aquifer, and plume disfigurement.
11. Maintain a log of all field monitoring results and injection/delivering activities.
12. Document and report all project activities and all test results to the WDNR within 60 days of completing the injection activities.

Failure to adhere to the provisions of this temporary exemption may result in WDNR 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.

WPDES Permit

Your proposed discharge is eligible for coverage under the general Wisconsin Pollutant Discharge Elimination System (WPDES) permit WI-0046566-06 for Discharge of Contaminated Groundwater from Remedial Action Operations. You are responsible for compliance with the conditions contained in this permit. The permit and an accompanying facts sheet can be downloaded from the WDNR website at <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>. The amended water will be injected into the groundwater. No pollutants shall be injected into the groundwater.

Discharges under this permit are required to be consistent with a discharge management plan that has been approved by the WDNR. Your plan, AECOM's October 24, 2016 request will be considered as the required discharge management plan, which specifies analytical sampling of the discharge for VOC and RCRA Metals.

Treatment will be provided by injection/delivering of the proposed in-situ enhanced reductive dechlorination using in-situ blending methods to soil and groundwater. The facility must immediately notify the WDNR if any treated groundwater will be discharged to surface water. Any significant system changes will require WDNR approval.

The WDNR hereby authorizes your pollutant discharge under the general WPDES permit for Discharge of Contaminated Groundwater from Remedial Action Operations (WI-0046566-6). The following conditions are highlighted for your information:

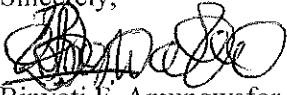
Section 283.35, Wisconsin Statutes, authorizes the WDNR to issue general permits for discharges from categories or classes of point sources. If a permittee believes coverage of a facility under a general WPDES permit is not appropriate, the permittee may apply for issuance of an individual WPDES permit pursuant to section 283.35 (2) and may petition the WDNR for withdrawal of coverage under the general permit. The individual permit application should indicate which site specific factors would justify alternate WPDES limits for the operation. Issuance of such a site specific WPDES permit will provide for a 30 day public comment period, and potentially a public informational hearing and/or an adjudicatory hearing. The WDNR may withdraw a facility from coverage under a general permit if it is determined that a discharge is a significant contributor of pollutants to waters of Wisconsin, or in certain other cases set out in s. 283.35, Stats. In lieu of general permit withdrawal, the WDNR may refer any violation of this permit to the Department of Justice for enforcement under s. 283.89, Stats. In order to avoid any enforcement action, please read the WPDES permit carefully and comply with the permit requirements.

If you believe you have a right to challenge the WDNR's decision to cover this facility with a WPDES general permit, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review WDNR decisions must be filed. To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the WDNR, to serve a petition for hearing on the Secretary of the Department of Natural Resources. Such a petition should identify pollutant(s) that are believed to be not appropriately regulated by the general permit for the specific site. All requests for contested case hearings must be made in accordance with section NR 2.05 (5), Wis. Adm. Code, and served on the Secretary in accordance with section NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the time period for filing a petition for judicial review.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the WDNR, to file your petition with the appropriate circuit court and serve the petition on the WDNR. A petition for judicial review must name the Department of Natural Resources as the respondent.

If you have any questions regarding this letter, please contact either me at 414-263-8607 or
BinyotiAmungwafor@Wisconsin.gov

Sincerely,

A handwritten signature in black ink, appearing to read 'Binyoti F. Amungwafor', written over a horizontal line.

Binyoti F. Amungwafor
Hydrogeologist
Remediation & Redevelopment Program

Cc: M(s). Lanette L. Altenbach, AECOM
Mr. Brian Austin, WDNR DG/5
Mr. Bill Phelps, WDNR DG/5
Case File

