Known for excellence.
Built on trust.

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

17975 West Sarah Lane
Suite 100
Brookfield, WI 53045
T: 262.754.2560
F: 262.923.7758
www.gza.com

September 23, 2021
File No. 20.0155935.01

Mr. Jeff A. Ackerman, Advanced Hydrogeologist
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Madison, Wisconsin 53711-5367

RE: Request for Extension and Continuation of Groundwater Treatment Injection Program
Former Trent Tube Plant No. 1
2188 Church Street
East Troy, Wisconsin
BRRTS No. 02-65-245827

Dear Mr. Ackerman:

GZA GeoEnvironmental, Inc. (GZA), on behalf of EnPro Holdings LLC (EnPro), is submitting this request for extension of the NR 140 exemption for treatment of groundwater by injection of carbon amendments that was approved by the Wisconsin Department of Natural Resources (WDNR) on October 7, 2019, and July 27, 2020. The information in this request for extension is based on our conversation on September 16, 2021, regarding the remedial activities implemented at the former Trent Tube Plant No. 1 at 2188 Church Street in East Troy, Wisconsin ("Site"), and the results of the performance monitoring that was conducted at the Site. GZA is requesting WDNR approval of this extension to perform additional injection events in the pilot test area and around MW-41 to continue the chlorinated hydrocarbon groundwater treatment at this Site. The injections are planned to be performed in mid-October 2021, pending approval.

In addition, GZA has been in contact with Ms. Maya Welch of the WDNR Wastewater section regarding the Wisconsin Pollutant Discharge Elimination System (WPDES) permit. The Wastewater Section indicated that the existing WPDES permit for the Site is active and approved, and available for the continuation of carbon amendments, pending the approval from the Remediation and Redevelopment section. The information below describes the performance monitoring results for the pilot test area and around MW-41, provides the basis for additional injection activities, and provides details regarding the proposed injection activities being requested for WDNR approval.

BACKGROUND

In October 2019, GZA implemented a pilot test on the southwestern portion of the Site to evaluate the viability for treating chlorinated hydrocarbons in groundwater using enhanced reductive dechlorination (ERD). The pilot test injection wells and groundwater monitoring wells at the Site are shown on Figure 1 below. This area was selected for the pilot test because the historic groundwater sampling indicated that the TCE concentration in this area was stable, the degradation daughter products (cis-1,2-dichloroethene [cis-1,2-DCE] and vinyl chloride) were not present, and the groundwater indicator parameters (oxidation-reduction potential [ORP] and dissolved oxygen [DO]) did not indicate degradation processes were occurring. It was assumed that if injection of carbon amendment could create groundwater conditions favorable for ERD in this area, it could be applied across the Site. The pilot test injection was performed based on the scope of work and NR 140 temporary exemption that was approved by the WDNR in correspondence dated October 7, 2019.

The pilot test included mixing and injecting an emulsified vegetable oil solution with dilution water that was treated with an oxygen scavenger at 28 injection points. A total of approximately 16,650 gallons of emulsified vegetable oil and dilution water were injected as a 5% solution, which included approximately 830 gallons of vegetable oil. The 28 injection points were distributed across an area approximately 120 feet by 120 feet around monitoring MW-42 and upgradient of monitoring well MW-2 and the solution was injected at three depth intervals in the water column in each injection point. The injection program was completed during the period from October 8 through 14, 2019, with a daily injection volume of approximately 3,500 gallons.

Following completion of the injection program, GZA implemented a post-injection performance monitoring program to evaluate the viability of ERD. The monitoring program consisted of collecting baseline samples prior to the injection program, monthly samples for three months, and one quarterly event from eight monitoring wells in and around the pilot test area.

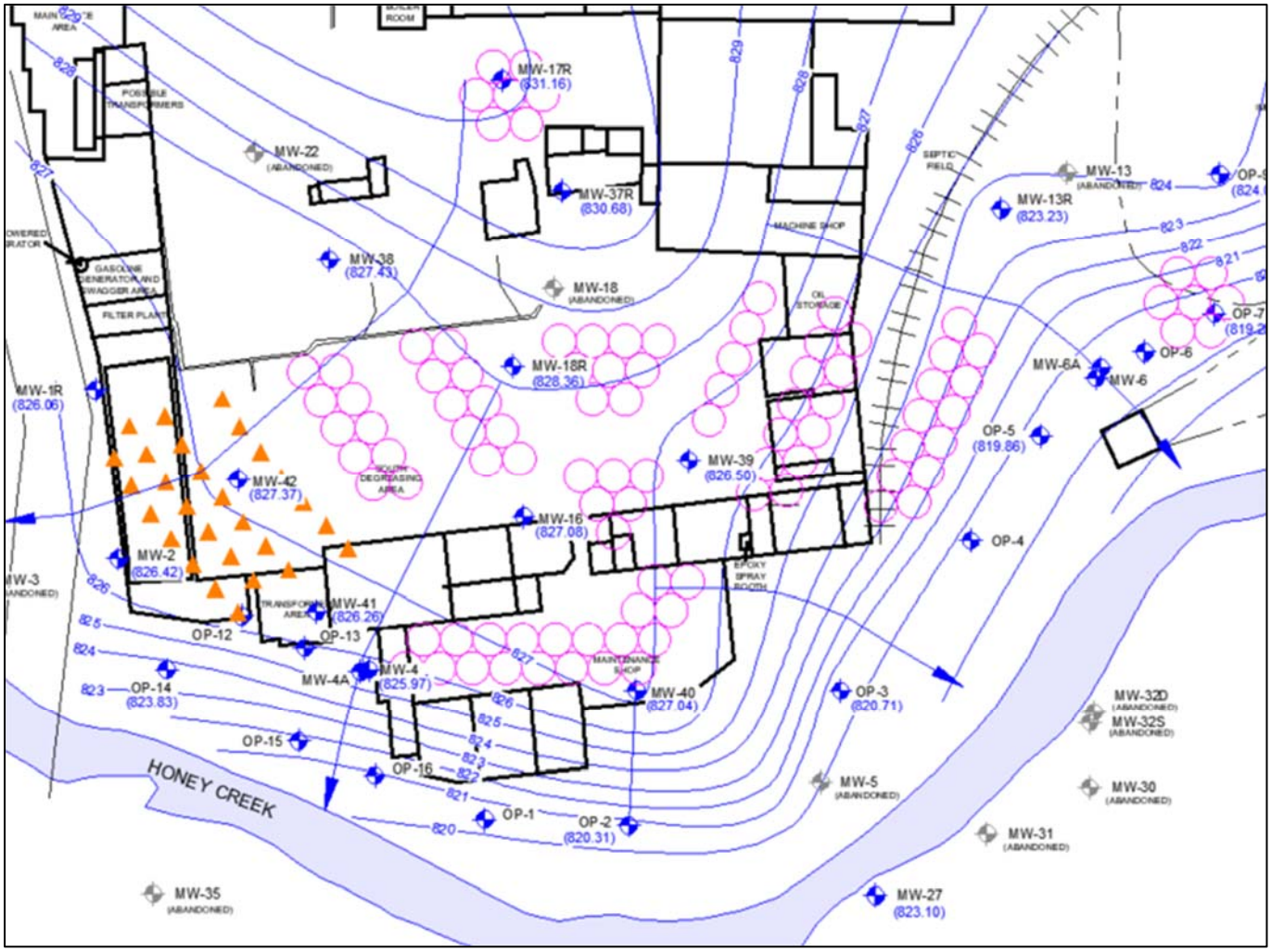


Figure 1. Pilot Test (Orange Triangles) and Full-Scale (Purple Circles) Injection Arrays

The results of the pilot test injection program indicated that anaerobic groundwater conditions were present, trichloroethene (TCE) concentrations were reduced, and daughter product concentrations increased in the pilot test area, and that ERD is a viable remedial alternative to treat chlorinated hydrocarbons in groundwater at the Site.

Based on the results of the pilot test, GZA developed a scope of work to expand the injection program across the Site to treat the chlorinated hydrocarbon groundwater plume on the southern portion of the Site adjacent to Honey Creek. The full-scale scope of work and NR 140 temporary exemption were approved by the WDNR in correspondence dated July 27, 2020.

The full-scale injection program, as shown on Figure 1, was implemented at the Site during the period from August 5 through 27, 2020. The full-scale injection program included mixing and injecting an emulsified vegetable oil solution with dilution water that was treated with an oxygen scavenger at 110 injection points. A total of approximately 68,200 gallons of emulsified vegetable oil and dilution water were injected as a 5% solution, which included approximately 2,600 gallons of vegetable oil. The 110 injection points were distributed in injection arrays across approximately 3 acres of the Site that were located primarily on the southern portion of the Site, as shown on Figure 1. At each injection point, the solution was injected at three depth intervals in the water column. The daily injection volume was approximately 4,200 gallons.

Following completion of the injection program, GZA implemented a post-injection performance monitoring program to evaluate the performance of the injection program in the pilot test and full-scale injection areas. The monitoring program consisted of collecting baseline samples prior to the injection program, monthly samples for four months after injection, and quarterly sampling thereafter.

Overall, the combined results of the pilot test and full-scale injections indicated that the injections created anaerobic conditions across the Site and the ERD process is effectively reducing both the chlorinated hydrocarbon mass and concentrations in groundwater.

PILOT TEST AREA PERFORMANCE MONITORING DATA EVALUATION

The recent monitoring results for the pilot test area indicate that the vegetable oil injected in this area was consumed and additional injection of emulsified vegetable oil is necessary to continue the remedial process. The concentrations of volatile organic compounds (VOCs), organic carbon, and volatile fatty acids were reviewed and evaluated for monitoring well MW-42, which is located within the injection array in the pilot test area, to determine if additional injection was necessary.

As shown in Figure 2, the TCE concentration in monitoring well MW-42 prior to the injection program was measured at 14,200 micrograms per liter (µg/L) in September 2019. Following the injection program, the TCE concentration was reduced to a concentration as low as 237 µg/L by September 2020, but has rebounded from October 2020 to August 2021 to a concentration of 5,620 µg/L. Following the injection program, the TOC concentration in MW-42 was measured at its highest concentration in January 2020 at 229 milligrams per liter (mg/L) and has steadily decreased since that time to a concentration of 3.3 mg/L in August 2021. As a general guideline for ERD to be an effective alternative to reduction mass using microbial mediated anaerobic degradation, the TOC concentration should be maintained at a concentration of at least 20 mg/L.

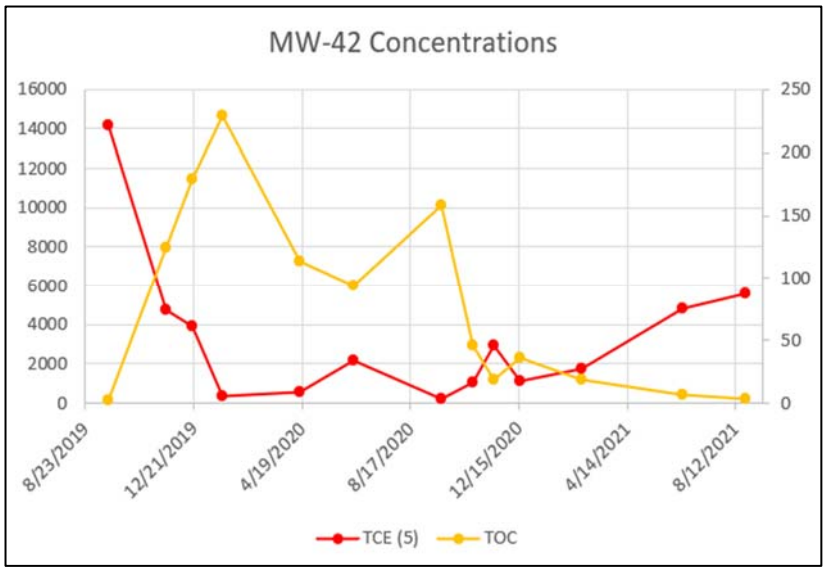


Figure 2. TCE and TOC Concentrations in MW-42

In the subsurface, the vegetable oil is fermented by microbes that sequentially break down the longer chain oils into shorter chain volatile fatty acids, which results in the production of hydrogen that is used as an electron donor for the reductive dechlorination process. The fermentation process continues until the oil is degraded to acetic acid. Groundwater samples were collected from monitoring well MW-42 and were analyzed for volatile fatty acids to evaluate the remaining life of the oil. The results of the volatile fatty acid analyses identified the primary short-chain volatile fatty acid in the pilot test area as acetic acid, which is an indication that the injected oil is consumed and the effective treatment of groundwater by ERD is near the end of the treatment cycle.

The performance monitoring data from monitoring well MW-2, located west and downgradient of MW-42, was reviewed and compared to the results of monitoring well MW-42 to verify that the on-Site injection was effective at controlling the migration of contaminants from the Site and treating contmainants in the downgradient area. As shown on Figure 3, the TCE concentration in monitoring well MW-2 was highest prior to the injection in September 2019 at a concentration of 2,770 µg/L and decreased significantly immediately following the injection program and has continued a steady decline through August 2021, at which time the TCE concentration was 0.44 µg/L. Following the injection program, the TOC concentration in MW-2 was measured at its highest concentration in December 2019 at 321 mg/L and has steadily declined since that time to a concentration of 37.8 mg/L in August 2021. This TOC concentration, while reduced from its highest concentration, is higher than measured in monitoring well MW-42, indicating that as the vegetable oil degrades to short-chain lengths, there is downgradient influence by the emulsified vegetable oil by migration of the volatile fatty acids that is continuing to effectively treat dissolved contaminants approximately 50 feet downgradient of the pilot test area.

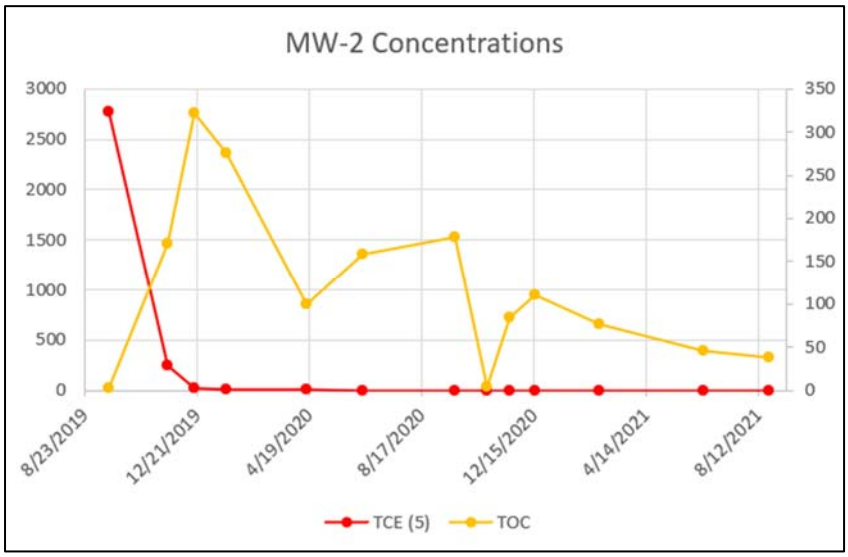


Figure 3. TCE and TOC Concentrations in MW-2

Based the evaluation of the performance monitoring sampling results of monitoring wells MW-42 and MW-2, GZA proposes to inject additional emulsified vegetable oil in the pilot test area to provide further treatment of the chlorinated hydrocarbons in groundwater. The details of the products and quantities proposed for injection and the performance monitoring proposed are presented below.

MONITORING WELL MW-41 PERFORMANCE MONITORING DATA EVALUATION

Following the full-scale injection program, the performance monitoring sampling program was implemented across the injection area, which included collecting samples from MW-41. The results of the groundwater sampling beginning in October 2020, following the full-scale injection to present, indicated that the TCE concentration increased in this well from approximately 30 µg/L to as high as 8,740 µg/L. The TCE concentration in monitoring well MW-41 was historically approximately 20 to 30 µg/L. During the injection process, the emulsified vegetable oil is injected at a pressure of 20 to 30 pounds per square inch (psi), which can cause groundwater mounding and migration through preferential flow paths. The lithology in this area is sand from approximately 15 to 20 feet, which could be a preferential flow path to cause migration. The groundwater mounding measured during the injection process was only 1 to 2 inches near the injection point. Since injection activities were not performed within at least 30 feet of MW-41, it is assumed that the increase was

caused by preferential flow through the sand in the full-scale injection arrays causing an increase in TCE concentration in MW-41.

As shown on Figure 4, the TOC in MW-41 in October 2019 appears to show an increase in concentration following the pilot test injections, but has only shown a very gradual concentration increase following the full-scale injection. The gradual increase in TOC concentration is an indication that the apparent increase in TCE concentration will not be treated without the injection of emulsified vegetable oil in the area of MW-41. The TCE concentration increase appears to be localized to MW-41 because other monitoring wells in this area and downgradient, such as MW-4, OP-14, and OP-16, do not exhibit an increase in TCE concentration.

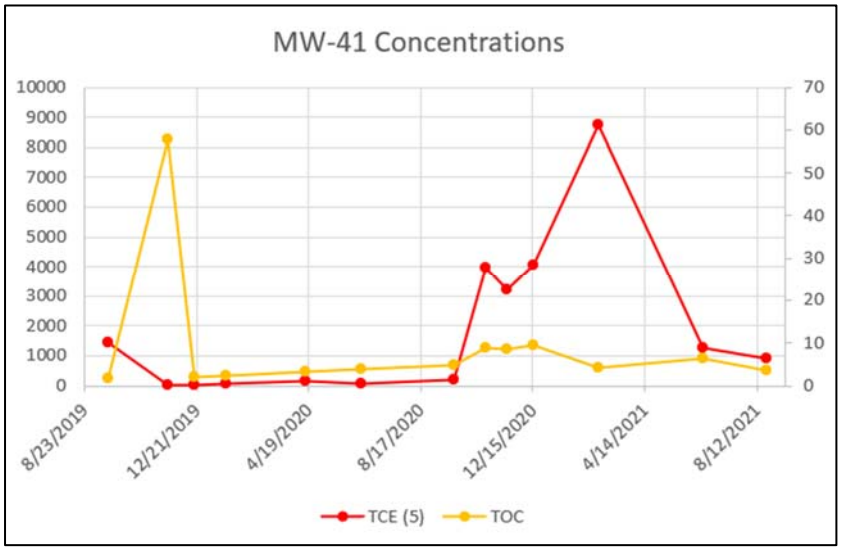


Figure 4. TCE and TOC Concentrations in MW-41

Based on an increase in TCE concentrations in MW-41, GZA proposes to inject emulsified vegetable oil in this area to treat the groundwater. The details of the products and quantities proposed for injection and the proposed performance monitoring are presented below.

ADDITIONAL INJECTION PROGRAM

The additional injection program in the pilot test area will include an array of 14 to 18 injection points around MW-42. The injection points will be advanced using a Geoprobe® and the injection of the emulsified vegetable oil will be performed through the Geoprobe® rods fitted with an injection screen at the tip of the rods. The maximum depth of the injection points is anticipated to be approximately 20 feet below ground surface (bgs), based on the lithology in this area. The lithology consists of 3 to 4 feet of soil fill material underlain by unsaturated, fine sand to a depth of approximately 10 to 12 feet bgs. Beneath the sand is a mixture of sand and silt to a depth of approximately 15 to 16 feet bgs, at which a saturated medium sand with gravel is encountered to a depth of approximately 20 feet bgs. The depth to groundwater in this area is at approximately 12 feet bgs, which includes the silt and sand mixture and underlying medium sand and gravel. The emulsified vegetable oil will be injected at up to three depth intervals in each injection point below the groundwater interface. The groundwater thickness is approximately 10 feet thick, therefore, the depth intervals will be separated vertically by approximately 3 feet. The injection points will be in the same location as the two eastern rows of injection points in the pilot test area, as shown on Figure 1.

The additional injection program in the area of MW-41 will be performed by gravity-flow of emulsified vegetable oil solution into eight injection wells constructed in accordance with NR 141. The wells installed in this area for injection purposes were constructed to a maximum depth of 22 feet bgs with 10 feet of polyvinyl chloride (PVC), factory-slotted, 0.010-inch well screen and riser. The annular space around the well screen is filled with a clean sand filter pack to approximately 1 foot above the top of the well screen and above the sand filter pack is filled with hydrated sodium bentonite chips to create a seal. The bottoms of the wells were set at the depth of the silt layer encountered at approximately 20 feet bgs. The lithology in the area of MW-41 is similar to the lithology described above for the pilot test area. The injection wells are located approximately 12 to 20 feet from MW-41 and are distributed around MW-41 based on the historic south/southwesterly groundwater flow direction in this area.

The emulsified vegetable oil product that is proposed for injection is Newman Zone 55, which is a mixture of 55% soybean oil, 4% sodium lactate, and 40% water. The product is emulsified by the vendor with oil droplets 0.15 to 0.60 microns in size. The small size allows the oil to migrate through the soil pores to create a radius of influence around the well. The radius of influence, based on the volume of solution injected and the effective porosity, is estimated to be approximately 5 feet from the injection well. In the subsurface, the oil binds to organic carbon and is trapped in the small pore spaces. The Newman Zone 55 will be mixed with dilution water that is treated with Newman Zone OS, which is an oxygen scavenger to reduce the dissolved oxygen of the dilution water. Since the ERD is an anaerobic process, the removal of dissolved oxygen from the dilution water aids in the creation of conditions favorable for ERD. The Newman Zone OS is a blend of food grade antioxidants, chelated iron catalyst, and buffering agents. The products proposed for injection are the same products that were used for the initial injections in each area. The product information sheets for the Newman Zone 55 and Newman Zone OS are attached.

During injection activities in both areas, the Newman Zone 55 will be mixed with the dilution water to create a 5% mixture of oil to water. The 5% solution allows for injection of approximately one-third of the volume of the groundwater within the 5-foot radius of influence and distribution of oil throughout the groundwater around the injection point or well. The injected solution in each area will be the same irrespective of injection method.

For the pilot test area, the injection will occur through the Geoprobe® rods under pressure not exceeding 30 psi and the injection rate is anticipated to be approximately 3 to 5 gallons per minute per well. The injection pressure is created by a pump attached to the dilution water tank and the oil is injected into the dilution water by a series of mechanical injection meters that inject oil based on the volume of dilution water passing through the injection meter. The injection meters have a range of 0 to 10%; however, since the Newman Zone 55 is only 55%, the maximum injection rate that can be achieved is 5.5%. The total volume of injected solution is proposed to be approximately 15,200 gallons of Newman Zone 55 and dilution water, which contains approximately 3,465 pounds or 415 gallons of emulsified vegetable oil.

In the injection wells around MW-41, the injection activities will be performed by placing a 1-inch drop-tube in the well to the desired depth and sealing the drop-tube at the top of the well to prevent the injection solution from migrating up the well casing. The drop-tube will be connected via polyethylene tubing to a manifold that regulates flow from two 275-gallon polyethylene tanks containing the emulsified vegetable oil, dilution water, and oxygen scavenger. The manifold will have valves to regulate the flow of solution from the tanks into the wells. Based on the groundwater level, tank head, and hydraulic conductivity of the aquifer materials, it is estimated that the injection at each well will require approximately four to six hours to complete using the gravity-flow method. The total volume of injected solution in all wells is proposed to be approximately 5,500 gallons of Newman Zone 55 and dilution water, which contains approximately 2,300 pounds or 276 gallons of emulsified vegetable oil.

During injection in the pilot test area and around monitoring well MW-41, groundwater levels will be measured in adjacent wells to confirm that the injection is not causing groundwater mounding that could mobilize contaminants. The monitoring wells to be measured include MW-1, MW-2, MW-4, OP-12, OP-14, OP-16; OP-12 is constructed with the base of the well at the groundwater interface because historically this well was dry or contained very little groundwater. Water levels will be measured in these wells at the beginning of each day of injections, in the middle of the day, and at the end of the day. If the water level measurements indicate an increase of more than 0.25 feet (about 3 inches) during injection, the injection rate will be adjusted to reduce the mounding.

PROPOSED GROUNDWATER MONITORING PLAN

To monitor the groundwater conditions and the chlorinated hydrocarbon concentrations, groundwater samples will be collected from existing monitoring wells proximal to and downgradient of the injection area for analysis of geochemical parameters and chlorinated VOCs (cVOCs). The monitoring wells included in the performance monitoring being conducted

at the Site for the full-scale ERD area and part of monitoring injection in the pilot test area and around MW-41 are MW1, MW-2, MW-4, MW-41, MW-42, OP-14, and OP-16.

The monitoring program will include baseline sampling, groundwater elevation monitoring during injections, and post-injection groundwater monitoring. Samples from monitoring wells will be analyzed for cVOCs, dissolved gases (methane, ethane, and ethene), TOC, dissolved iron, and sulfate. During low-flow purging, field instruments will be used to measure other field parameters, including temperature, specific conductance, pH, DO, and ORP. The field parameters, including DO, ORP, and organic carbon concentrations, will be used to evaluate whether suitable geochemical conditions are being created in the aquifer by the electron donor to support anaerobic biological degradation of TCE.

In addition to groundwater sample collection, water levels will be measured occasionally in the groundwater monitoring well network to assess the horizontal hydraulic gradient, vertical hydraulic gradient, and the horizontal direction of groundwater flow.

CONCLUSION

Based on the performance monitoring groundwater results in MW-42, the TOC in the pilot test area has steadily decreased since October 2019, and is currently at a concentration that is less than 20 mg/L, which is indicative that the effective treatment using ERD is nearing the end of the life of the injected emulsified vegetable oil. In addition, as the TOC concentration decreased to approximately 20 mg/L, the TCE concentration in MW-42 began to increase or rebound, indicating that the ERD process was not effectively reducing the TCE concentration. The field indicator parameters indicate that the groundwater is under anaerobic conditions, but that the limiting factor to continue the treatment of the chlorinated hydrocarbons is the organic carbon. As such, GZA is requesting WDNR approval of the temporary exemption to allow for reinjection in the pilot test area.

Following the full-scale injection in August 2020, the performance monitoring groundwater results in MW-41 indicated that the TCE increased significantly as compared to the historic concentration in this well. This well has been monitored for a period of approximately six months and the TCE concentrations remain higher than the historic concentrations in this well. Following the full-scale injection, the groundwater concentrations in MW-41 increased, indicating a change in groundwater conditions. Since the area around MW-41 did not previously receive an injection of carbon amendment, GZA is requesting WDNR approval of the temporary exemption to allow for injection of emulsified vegetable oil under gravity-flow conditions in eight NR 141 monitoring wells installed around this well for injection purposes.

Thank you for your consideration of this supplemental injection request. If you have any questions regarding the information in this request, please feel free to contact Mr. Kevin Hedinger at 262-754-2578.

Sincerely

GZA GeoEnvironmental, Inc.

Kevin M. Hedinger
Senior Hydrogeologist

James F. Drought, P.H.
Principal Hydrogeologist

J:\155900to155999\155935 Trent Tube\01 2019 Regulatory Support\Trent Tube Extension Request\
FINAL 20.0155935.01 Extension and Continuation of GW Treatment Request_Trent Tube 9-23-21.docx

Attachments: Product Information Sheets

RNAS REMEDIATION PRODUCTS
6712 West River Road, Brooklyn Center, MN 55430
(763) 585.6191 www.RNASinc.com

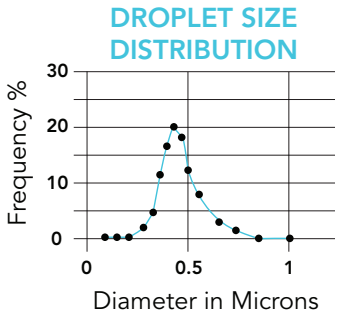
www.rnasinc.com

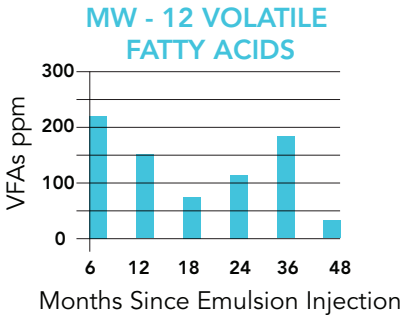
USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 97%

Newman Zone 55™

A Balance Of Fast And Slow Release Electron Donors

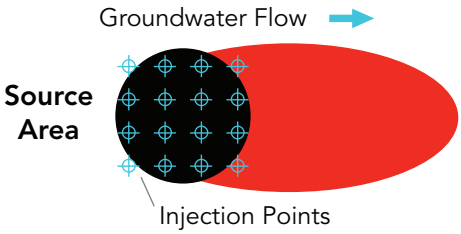
Newman Zone® 55 is an electron donor for enhancing the in situ anaerobic bioremediation of chlorinated solvents, nitrated explosives (RDX, HMX, TNT), selected toxic metals (chrome VI), perchlorate and nitrate. Newman Zone® 55 has both fast and slow-release electron donors. Lactate stimulates microbial growth within hours of injection and rapidly produces anaerobic conditions in the subsurface. Vegetable oil droplets are retained on soil particles and slowly ferment to hydrogen and volatile fatty acids which support anaerobic biodegradation for as long as five years after injection.

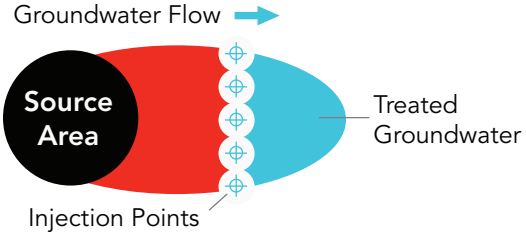




Application

Newman Zone® 55 emulsions contain approximately 60 percent vegetable oil by volume in concentrated form. The emulsion is usually diluted to 5 percent or less oil by volume prior to injection. After dilution the emulsion has a low viscosity similar to water allowing it to be applied by direct push injections, injection wells, water circulation systems and even direct application to source area excavations prior to backfilling. Common treatment configurations include an injection grid used to treat contaminant source areas and bio-barriers to treat dissolved plumes.





Benefits – The Smallest Emulsion Droplet Size in the Industry

Newman Zone® 55 is an oil-in-water emulsion consisting of oil droplets between 0.15 and 0.60 microns in size with a median size of 0.30 microns. Our uniquely small oil droplet size maximizes mobility in silt and clay soils and allows for excellent stability when blended with oxygen scavengers, buffers and other amendments prior to injection. The large droplet emulsions provided by other companies can result in oil/water separation, limited distribution or reduced soil permeability.

Experience – Over a Decade of Results From Millions of Pounds Delivered!

Newman Zone® was the first factory produced small droplet emulsified oil product on the market. Since the first production run in 2002 we have delivered millions of pounds of emulsion to thousands of sites around the world.

RNAS REMEDIATION PRODUCTS
6712 West River Road, Brooklyn Center, MN 55430
(763) 585.6191 www.RNASinc.com

www.rnasinc.com

Newman Zone 55

A Balance Of Fast And Slow Release Electron Donors

Product Content

Chemical Name	CAS Number	Composition (%wt)
Soybean Oil (food grade)	8001-22-7	>55%
Sodium-L-Lactate	867-56-1	4%
Food Additives / Emulsifiers / Preservatives	Proprietary	<10%
Water		Balance

Product Characteristics

Parameter	Unit	Specification
Density	g/cm³	0.98
Particle Size	µm	0.15 - 0.60
Flash Point	°F	>540 (closed cup)
Appearance		White opaque liquid

Packaging

Newman Zone® 55 is available in 5-gallon pails (40 pounds net) and 275-gallon totes (2,100 pounds net). For large projects bulk emulsion can be delivered in either iso-tanks or food grade tanker truck loads.

Storage

The small droplet Newman Zone® 55 emulsion is kinetically stable and pasteurization prevents microbial spoilage. We keep inventory in chilled storage where the shelf-life can exceed five years. Newman Zone® 55 can be stored on-site for 2-4 months without refrigeration. Avoid freezing conditions. Temperatures that average below 25 degrees Fahrenheit may result in frozen emulsion.

Safety

No protective equipment is necessary under normal use conditions. All ingredients consist of food or food grade additives.

RNAS REMEDIATION PRODUCTS
6712 West River Road, Brooklyn Center, MN 55430
(763) 585.6191 www.RNASinc.com

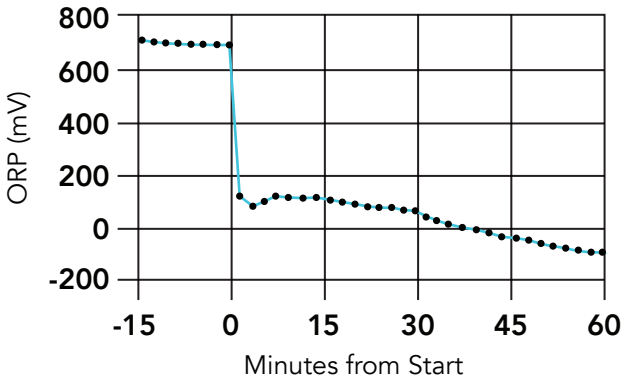
www.rnasinc.com

Newman Zone OS™

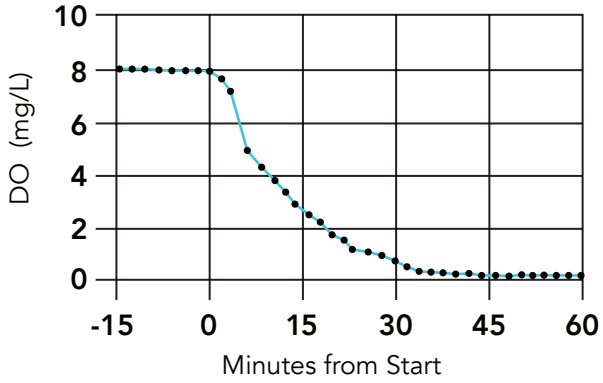
Oxygen Scavenger for Anaerobic Bioremediation

Newman Zone OS™ is a blend of food grade antioxidants, chelated ferrous iron catalyst and buffering agents used to prepare water for anaerobic injections. Newman Zone OS™ is specially formulated to quickly remove dissolved oxygen from water and create the reducing conditions necessary for successful anaerobic bioremediation. Newman Zone OS™ supports bioaugmentation cultures such as SDC-9™ and KB-1® by removing dissolved oxygen from injection water and allowing bacteria to thrive and grow.

ORP REDUCTION*



DISSOLVED OXYGEN REMOVAL*



*Tested in 1,000 Liter totes at 16° C

Application

Newman Zone OS™ comes in pre-measured pails and is added to tanks prior to filling with water. For optimal results, stirring tanks with pumps or mixers is recommended until Newman Zone OS™ is fully dissolved. Typical applications result in anoxic water within one hour and a negative ORP within two hours.

Benefits - Added Vitamin B12

Newman Zone OS™ contains 25 µg/liter of Vitamin B12 (as applied), a required corrinoid vitamin demonstrated to enhance growth and dechlorination performance of Dehalococcoides strains (He et al., May 2007).

Benefits - Rapid Oxygen Scavenging

Newman Zone OS™ is a cost effective way to quickly prepare anaerobic water. Due to its high concentration of antioxidants, chelated ferrous iron catalyst and buffering agents, Newman Zone OS™ is effective even in cold, highly oxidized water. Higher temperatures will result in faster oxygen removal rates.

Benefits - Supports Bioaugmentation Cultures

Laboratory microcosm studies have confirmed Newman Zone OS™ presents no toxicity or inhibition to the SDC-9™ bioaugmentation culture. Additionally, the antioxidants and chelating agents degrade to provide a rapidly available electron donor (700 mg/liter glucose equivalent).

RNAS REMEDIATION PRODUCTS
6712 West River Road, Brooklyn Center, MN 55430
(763) 585.6191 www.RNASinc.com

Newman Zone OS™

Oxygen Scavenger for Anaerobic Bioremediation

Product Content

Chemical Name	Composition
Food Grade Antioxidants	70%
Food Grade Catalysts, Chelating Agents and Buffers	30%

Product Characteristics

Parameter	Unit	Specification
Appearance, packaged		White to brown powder or granules
Appearance, in solution		Dark grey to brown or yellow
Density	g/cm^3	1.0 - 1.2
pH, in solution	Standard Units	7.0 - 8.0

Packaging

Newman Zone OS™ is packaged in 1 and 5 gallon pails premeasured for 1,000 gallon (3,785 L) and 5,000 gallon (18,925 L) batches, respectively.

Storage

Newman Zone OS™ may be stored under recommended conditions for months without activity loss. Keep containers tightly closed in a cool, well-ventilated area. Keep containers sealed to avoid exposure to oxygen or moisture.

Safety

Newman Zone OS™ is comprised of food grade, non-toxic ingredients. No known hazards are associated with exposure to this product when used as directed. Nevertheless, appropriate personal protective equipment is recommended when handling this product.