



March 2, 2018

Dave Volkert  
Wisconsin Department of Natural Resources  
141 NW Barstow St, Room 180  
Waukesha, WI 53188

**Re: Remediation Injection Request**

Dear Mr. Volkert:

EnviroForensics is proposing a subsurface injection utilizing products that create and support enhanced reductive dechlorination as a method of groundwater treatment at the former One Hour Martinizing facility in Oconomowoc, Wisconsin (Site). On behalf of the responsible party, we are requesting review and approval of the attached request. Site information is provided below.

Site Details: One Hour Martinizing - Former  
36929 Plank Rd  
Oconomowoc, WI 53066  
BRRTS# 02-68-551911

Site Owner: McAdams Realty Oconomowoc, LLP  
110 S Regency Rd  
Oconomowoc, WI 53066

Responsible Party: Brian Cass  
W229 N2494 County Highway F  
Waukesha, WI 53186  
(262) 521-9710  
[brian@ohmholdings.com](mailto:brian@ohmholdings.com)

Consultant: EnviroForensics, LLC  
Brian Kappen, Project Manager  
Wayne Fassbender, Senior Project Manager  
N16 W23390 Stone Ridge Drive, Suite G, Waukesha, WI 53188  
262-290-4001  
[wfassbender@enviroforensics.com](mailto:wfassbender@enviroforensics.com)



An injection request and WPDES general permit application are attached. A Technical Assistance review fee of \$700 is enclosed with the copy of this letter sent to Mr. Yang.

Sincerely,  
**EnviroForensics, LLC**

A handwritten signature in blue ink that reads "Wayne P. Fassbender".

Wayne Fassbender, PG, PMP  
*Senior Project Manager*

A handwritten signature in blue ink that reads "Brian Kappen".

Brian Kappen, PG  
*Project Manager*

cc: Chue Yee Yang, WDNR

enclosure



INJECTION REQUEST  
FORMER ONE HOUR MARTINIZING  
36929 PLANK ROAD, OCONOMOWOC, WI

EnviroForensics is requesting approval to perform injections for groundwater remediation at the former One Hour Martinizing (OHM) facility in Oconomowoc, Wisconsin (Site). The objective of the remedial injections is to reduce concentrations of tetrachloroethene (PCE) and associated degradation compounds in groundwater.

The lithologic profile at the Site consists primarily of densely compacted, fine to coarse-grained silty sand and gravel with a few cobbles and boulders. An approximately 2 to 3-foot thick layer of anthropogenic subgrade fill is present below the parking areas and driveways. The silty sand and gravel unit has been observed below the subgrade to depths of 55 feet below ground surface (bgs). Zones of decreased permeability have been observed locally within this unit due to increased percentages of silt. Areas in the southern portion of the site contained fluvial deposits of well-rounded coarse-grained gravel having much higher permeability. The water table is encountered at approximately 28 feet bgs.

The target compound for treatment is PCE, identified in Site groundwater at concentrations up to 340 micrograms per liter ( $\mu\text{g/L}$ ). The target treatment depth is 28 to 40 feet bgs. The remedial technology selected for groundwater treatment is enhanced reductive dechlorination (ERD). The proposed ERD solution to be injected is a combination of products manufactured by Regenesis:

- 3-D Microemulsion® (electron donor emulsion);
- Chemical Reducing Solution® (CRS), an iron-based reagent; and
- Bio-Dechlor Inoculum Plus® (BDI), a microbial consortium containing species of dehalococoides.

Product brochures prepared by the manufacturer are provided in **Attachment 1**. All products are non-hazardous.

### **Implementation Plan**

EnviroForensics and Regenesis developed an injection design based on groundwater volatile organic compound (VOC) concentrations and the hydrogeological properties of the aquifer. The injection is designed as follows:

- Mix 3-D Microemulsion and CRS together in one solution and inject approximately 610 gallons into each of the 40 injection points shown on **Figure 1** (attached);
- Mix BDI in a separate solution and inject 15 gallons into each of the 40 injection points shown on **Figure 1**.



INJECTION REQUEST  
FORMER ONE HOUR MARTINIZING  
36929 PLANK ROAD, OCONOMOWOC, WI

The products will be mixed with potable water to achieve the desired solution concentrations. The total volume of solutions injected will be approximately 25,000 gallons, or 625 gallons per point. The application design summary is provided in **Attachment 2**. The products will be stored in a secured container prior to mixing.

Mixing will be performed in large, trailer-mounted tanks with continuous agitation. The solution will then be pumped from the tanks, through a manifold to the injection points via hose. Pressure and flow rate will be monitored and recorded to confirm that injection design parameters are met. Injections will occur through direct-push rods with a retractable screen injection tool similar to <http://ectmfg.com/product/2-25-retractable-injection-tool-24-exposed/>.

The direct-push tooling will be removed from each location after the prescribed volume of solution is injected, and the boreholes will be abandoned in accordance with s. NR 141.25 and patched with asphalt.

### **Monitoring Plan**

Groundwater elevation measurements will be collected before, during, and after injections to evaluate the temporary effect of injection on potentiometric surfaces and flow direction. Measurements will be collected from wells within and near the treatment area. The depth to water in each well will be measured to the nearest 0.01 foot using an electronic water level indicator.

The post-injection groundwater monitoring program is detailed on **Table 1** (attached). The objectives of monitoring are to verify that aquifer conditions are conducive to reductive processes and to document decreasing VOC concentration trends. Monitoring will be conducted for a minimum of two (2) years following injections. A third year of monitoring will be implemented if needed to demonstrate continuing reductions.

Existing monitoring wells MW-1, -2, -3, -4, -5, -6, and MW-11 will be used for remediation performance monitoring purposes. The monitoring well locations are depicted on **Figure 2**. Groundwater samples will be collected via low-flow methods and analyzed for VOCs according to EPA test method 8260. In addition, samples will be collected from select wells for analysis of dehalococoides species and population, dissolved gases, total and dissolved iron, nitrate, nitrite, and sulfate. Water quality data including electrical conductivity, temperature, dissolved oxygen, total dissolved solids, pH and oxidation-reduction potential (ORP) will be measured in the field with a portable meter.



INJECTION REQUEST  
FORMER ONE HOUR MARTINIZING  
36929 PLANK ROAD, OCONOMOWOC, WI

Investigation-derived media (IDM), including purge water and decontamination fluids, will be containerized in 55-gallon drums. A licensed contractor will be retained to remove drums following each monitoring event. The IDM will be managed under existing non-hazardous waste profiles.

### **Vapor Screening**

Methane can be produced via in-situ ERD processes. Methane concentrations will be monitored during groundwater sampling events both as an indication of microbial activity and to assess the potential for hazardous conditions beneath the existing large commercial building.

Measurements of methane concentrations will be taken at existing nested soil gas sampling ports using a portable gas analyzer. The soil gas sampling ports, designated SG-1S/D through SG-3S/D, are located on the west side of the existing building as shown on **Figure 3**. The sampling ports consist of a 1-foot long stainless steel screen coupled to Teflon®-lined polyethylene tubing extending to the surface. The shallow screen at each location is positioned between 4 and 6 feet bgs. The deep screens are installed at depths ranging from 23 to 25 feet bgs.

If the methane concentration exceeds 10% of the LEL (i.e., 0.5% by volume methane), then additional soil vapor extraction may be necessary to reduce methane concentrations.

### **Timeframe**

The remedial injections are tentatively scheduled to begin in April 2018. EnviroForensics anticipates the injection activities can be completed in one (1) week. Post-injection monitoring will be performed semi-annually, with the first monitoring event to occur approximately three (3) months after the injection activities are completed. EnviroForensics is requesting injection approval through the end of 2020 in case repeat injections are necessary.



INJECTION REQUEST  
FORMER ONE HOUR MARTINIZING  
36929 PLANK ROAD, OCONOMOWOC, WI

**Certifications**

I, Andrew Horwath, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

\_\_\_\_\_  
Manager, Technical Group, P.E. No. E-43831-6  
Signature, title and P.E. number P.E. stamp

I, Brian Kappen, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

\_\_\_\_\_  
Project Manager  
Signature and title 3/2/18  
Date

**TABLE 1**  
**REMEDIATION PERFORMANCE MONITORING PROGRAM**

Former One Hour Martinizing  
Oconomowoc, Wisconsin

Year 1								
Parameter	VOCs	Total Fe	Dissolved Fe	Sulfate	Nitrate	Nitrite	Ethene/Ethane/Methane	DHC Population/Species
MW-1	Q	Q	Q	Q	Q	Q	Q	S
MW-2	Q							
MW-3	Q							
MW-4	Q							
MW-5	Q	Q	Q	Q	Q	Q	Q	S
MW-6	Q							
MW-11	Q							

Year 2								
Parameter	VOCs	Total Fe	Dissolved Fe	Sulfate	Nitrate	Nitrite	Ethene/Ethane/Methane	DHC Population/Species
MW-1	Q	S	S	S	S	S	S	A
MW-2	Q							
MW-3	Q							
MW-4	Q							
MW-5	Q	S	S	S	S	S	S	A
MW-6	Q							
MW-11	Q							

Year 3								
Parameter	VOCs	Total Fe	Dissolved Fe	Sulfate	Nitrate	Nitrite	Ethene/Ethane/Methane	DHC Population/Species
MW-1	S	S	S	S	S	S	S	A
MW-2	S							
MW-3	S							
MW-4	S							
MW-5	S	S	S	S	S	S	S	A
MW-6	S							
MW-11	S							

**Notes:**

The first monitoring event will be performed approximately 2 months after injections

Q = Sample collected for analysis quarterly

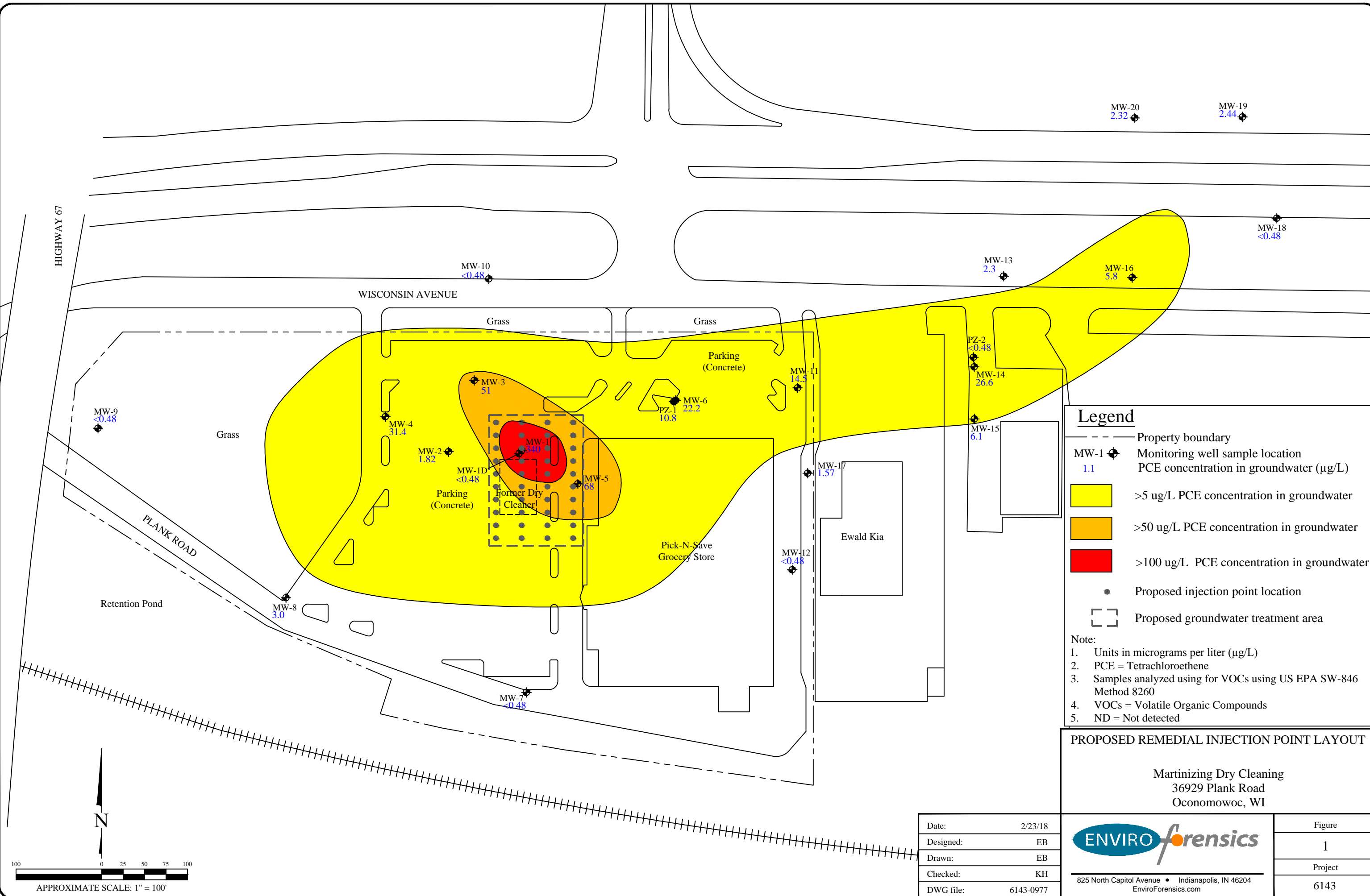
S = Sample collected for analysis semi-annually

A = Sample collected for analysis annually

DHC = Dehalococcoides

Fe = Iron

VOCs = Volatile Organic Compounds



**Legend**

- Property boundary
- MW-1  $\blacklozenge$  Monitoring well sample location  
1.1 PCE concentration in groundwater ( $\mu\text{g/L}$ )
- Yellow box >5  $\mu\text{g/L}$  PCE concentration in groundwater
- Orange box >50  $\mu\text{g/L}$  PCE concentration in groundwater
- Red box >100  $\mu\text{g/L}$  PCE concentration in groundwater
- $\bullet$  Proposed injection point location
- [ ] Proposed groundwater treatment area

**Note:**

1. Units in micrograms per liter ( $\mu\text{g/L}$ )
2. PCE = Tetrachloroethene
3. Samples analyzed using for VOCs using US EPA SW-846 Method 8260
4. VOCs = Volatile Organic Compounds
5. ND = Not detected

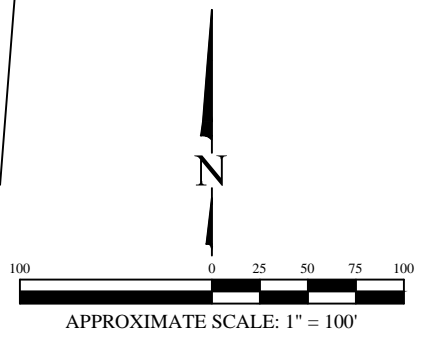
**PROPOSED REMEDIAL INJECTION POINT LAYOUT**

Martinizing Dry Cleaning  
36929 Plank Road  
Oconomowoc, WI

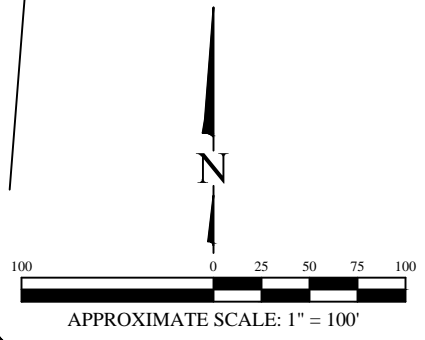
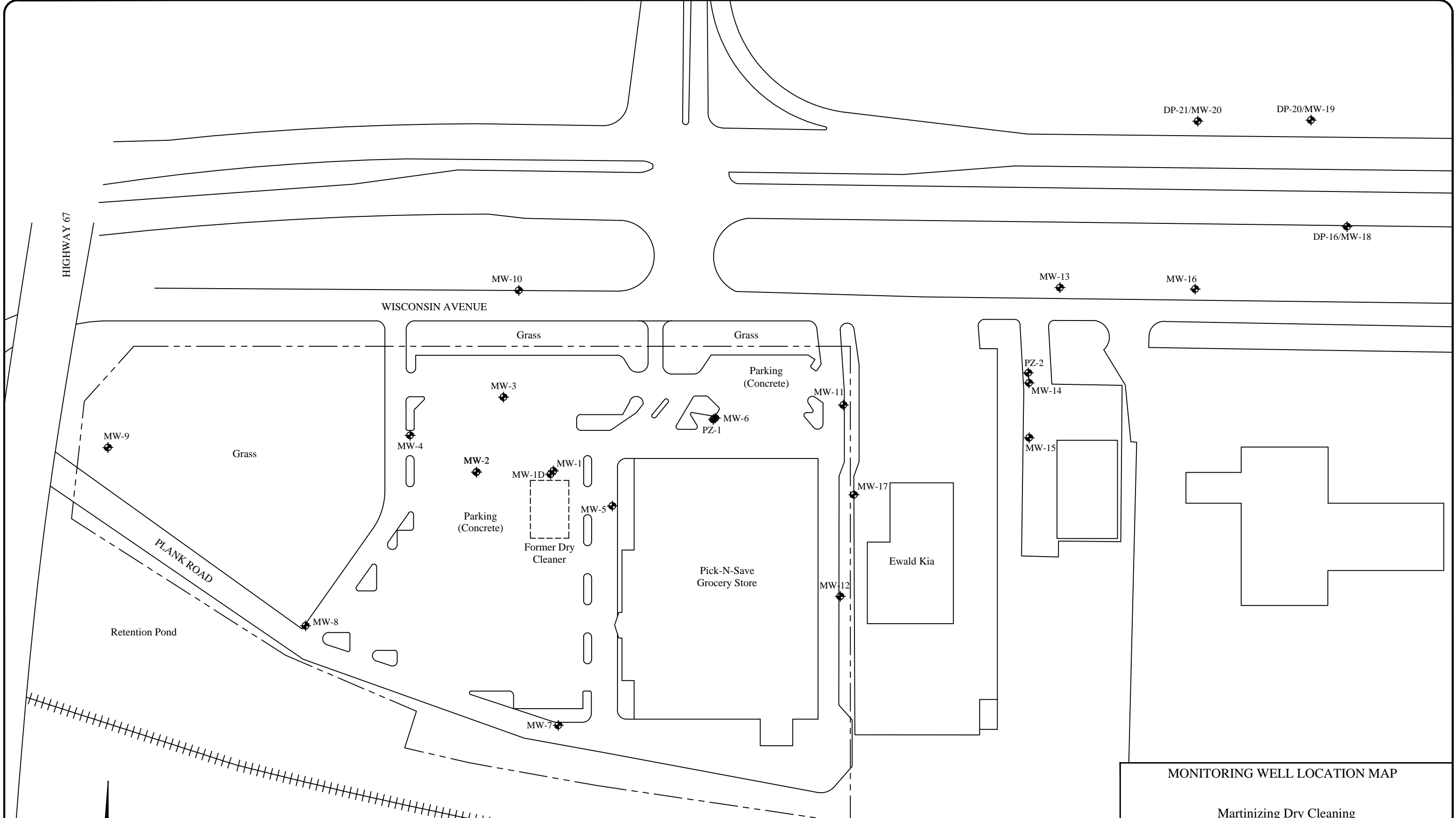
Date:	2/23/18
Designed:	EB
Drawn:	EB
Checked:	KH
DWG file:	6143-0977

825 North Capitol Avenue • Indianapolis, IN 46204  
EnviroForensics.com

Figure	1
Project	6143







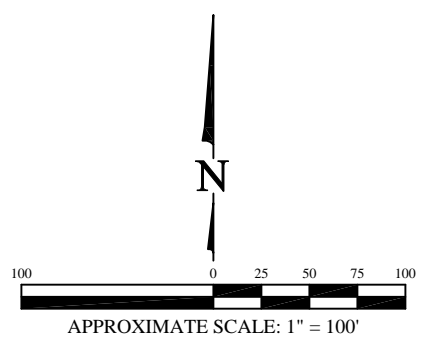
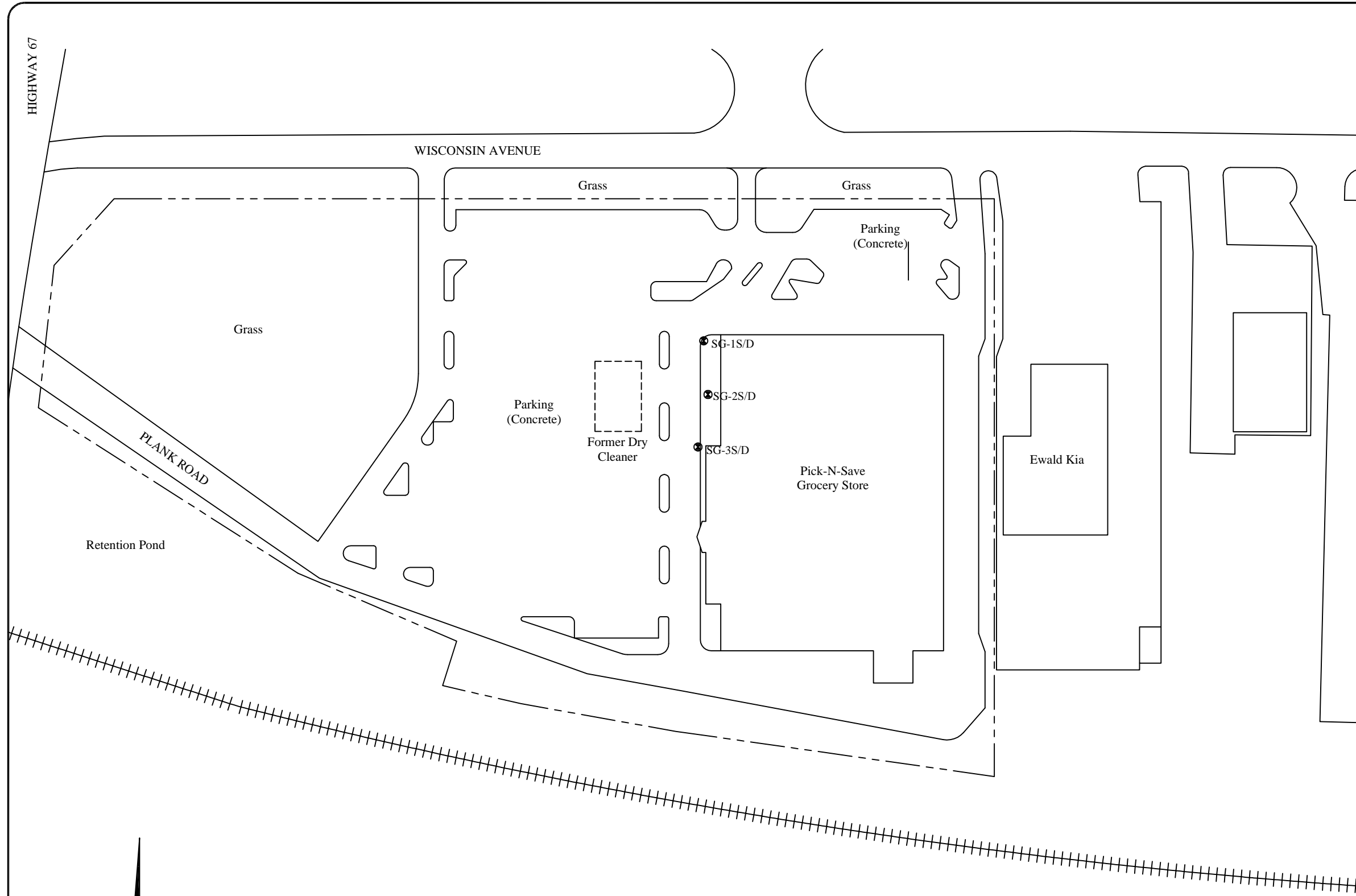
**MONITORING WELL LOCATION MAP**

Martinzing Dry Cleaning  
36929 Plank Road  
Oconomowoc, WI

Date: 5/1/15		Figure
Designed: EB		2
Drawn: EB		Project
Checked: KH		6143
DWG file: 6143-0135		<small>825 North Capitol Avenue • Indianapolis, IN 46204 EnviroForensics.com</small>

**Legend**

- Property boundary
- SG-1S/D ● Soil gas sample Port



<b>SOIL GAS SAMPLE PORT LOCATIONS</b>											
Martinizing Dry Cleaning 36929 Plank Road Oconomowoc, WI											
	Figure										
ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC. 602 N. Capitol Ave., Ste. 210 • Indianapolis, IN 46204 EnviroForensics.com	3										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Date:</td><td style="text-align: right;">3/7/14</td></tr> <tr><td>Designed:</td><td style="text-align: right;">EB</td></tr> <tr><td>Drawn:</td><td style="text-align: right;">EB</td></tr> <tr><td>Checked:</td><td style="text-align: right;">BB</td></tr> <tr><td>DWG file:</td><td style="text-align: right;">6143-0200</td></tr> </table>	Date:	3/7/14	Designed:	EB	Drawn:	EB	Checked:	BB	DWG file:	6143-0200	Project
Date:	3/7/14										
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DWG file:	6143-0200										
	6143										

## 3-D Microemulsion® Factory Emulsified Technical Description

3-D Microemulsion (3DME®) is comprised of a patented molecular structure containing oleic acids (i.e., oil component) and lactates/poly lactates, which are molecularly bound to one another (figure 1). The 3DME molecule contains both a soluble (hydrophilic) and in-soluble (lipophilic) region. These two regions of the molecule are designed to be balanced in size and relative strength. The balanced hydrophilic/lipophilic regions of 3DME result in an electron donor with physical properties allowing it to initially adsorb to the aquifer material in the area of application, then slowly redistribute via very small 3DME “bundles” called micelles. These 3DME micelles spontaneously form within sections of the aquifer where concentrations of 3DME reach several hundred parts per million. The micelles’ small size and mobility allow it to move with groundwater flow through the aquifer matrix, passing easily through the pore throats in between soil grains resulting in the further redistribution of 3DME within the aquifer. This allows for advective distribution of the oleic acids which are otherwise insoluble and unable to distribute in this manner, allowing for increased persistence of the lactate/poly lactates component due to their initial attachment to the oleic acids.

Due to its patented molecular structure, 3DME offers far greater transport when compared to blended emulsified vegetable oil (EVO) products, which fail to distribute beyond the limits of pumping. 3DME also provides greater persistence when compared to soluble substrates such as lactates or simple sugars. The 3DME molecular structures capitalize on the best features of the two electron-donor types while at the same time, minimize their limitations. 3DME is delivered to the site as a ready-to-apply emulsion that is simply diluted with water to generate a large volume of a 3DME colloidal suspension.

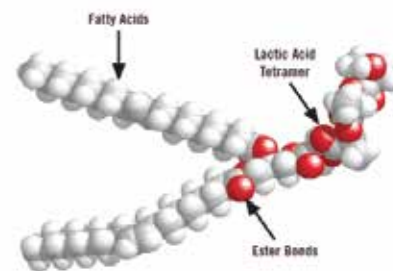
Suspension of 3DME generated by this mixing range from micelles on the order of .02 microns to .05 microns in diameter, to “swollen” micelles, (termed “microemulsions”) which are on the order of .05 to 5 microns in diameter. Once injected into the subsurface in high volumes, the colloidal suspension mixes and dilutes in existing pore waters. The micelles/microemulsions on the injection front will then begin to sorb onto the surfaces of soils as a result of zeta potential attraction and organic matter within the soils themselves. As the sorption continues, the 3DME will “coat” pore surfaces developing a layer of molecules and in some cases a bilayer. This sorption process continues as the micelles/microemulsion moves outward and disassociates into their hydrophilic/hydrophobic components. The specialized chemistry of 3DME results in a staged release of electron donors: free lactate (immediate); polylactate esters (mid-range) and free fatty acids & fatty acid esters (long-term). Material longevity of three years or greater has been seen at most sites as determined from biogeochemical analyses.

For a list of treatable contaminants with the use of 3DME, view the [Range of Treatable Contaminants Guide](#)



Example of 3-D Microemulsion

FIGURE 1: THE 3-D MICROEMULSION MOLECULAR STRUCTURE



### Chemical Composition

- Hydrogen Release Compound Partitioning Electron Donor – CAS #823190-10-9
- Sodium Lactate – CAS# 72-17-3
- Water – CAS# – 7732-18-5

# 3-D Microemulsion® Factory Emulsified Technical Description

## Properties

- Density – Approximately 1.0 grams per cubic centimeter (relative to water)
- pH – Neutral (approximately 6.5 to 7.5 standard units)
- Solubility – Soluble in Water
- Appearance – White emulsion
- Odor – Not detectable
- Vapor Pressure – None
- Non-hazardous

## Storage and Handling Guidelines

### Storage

Store in original tightly closed container

Store in a cool, dry, well-ventilated place

Store away from incompatible materials

Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass

### Handling

Avoid contact with eyes, skin, and clothing

Provide adequate ventilation

Wear appropriate personal protective equipment

Observe good industrial hygiene practices

## Applications

- 3DME is diluted with water prior to application. Resulting emulsion has viscosity similar to water.
- Easily injects into formation through direct push injection points, injection wells or other injection delivery systems.

Application instructions for this product are contained here [3DME FE Application Instructions](#).

## Health and Safety

Material is food grade and relatively safe to handle. We recommend avoiding contact with eyes and prolonged contact with skin. OSHA Level D personal protection equipment including vinyl or rubber gloves, and eye protection are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: [SDS-3DME FE](#).



## CRS® Technical Description

CRS® (Chemical Reducing Solution) is an iron-based reagent that facilitates biogeochemical *in situ* chemical reduction (ISCR) of halogenated contaminants such as chlorinated ethenes and ethanes. CRS is a pH neutral, liquid iron solution that is easily mixed with 3-D Microemulsion® Factory Emulsified before injection into a contaminated aquifer. CRS provides a soluble, food-grade source of ferrous iron (Fe<sup>2+</sup>), designed to precipitate as reduced iron sulfides, oxides, and/or hydroxides. These Fe<sup>2+</sup> minerals are capable of destroying chlorinated solvents via chemical reduction pathways, thus improving the efficiency of the overall reductive dechlorination process by providing multiple pathways for contaminant degradation in groundwater.



Example of CRS

For a list of treatable contaminants with the use of CRS, view the [Range of Treatable Contaminants Guide](#).

### Chemical Composition

- Water 7732-18-5
- Ferrous Gluconate 299-29-6

### Properties

- Appearance – Dark green to black
- Odor – Odorless
- pH 6.0 to 8.0
- Density – Approximately 1.0 grams per cubic centimeter (0.9 to 1.1 g/cc)
- Solubility – Miscible
- Vapor Pressure – None
- Non-hazardous

### Storage and Handling Guidelines

#### Storage

- Store in original tightly closed container
- Store away from incompatible materials
- Recommended storage containers: plastic-lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass
- Store in a cool, dry, well-ventilated place
- Keep away from extreme heat and strong oxidizing agents

#### Handling

- Avoid prolonged exposure
- Observe good industrial hygiene practices
- Wear appropriate personal protective equipment
- Avoid contact with eyes, skin, and clothing
- Avoid breathing spray mist
- Use with adequate ventilation

# CRS® Technical Description

## Applications

- Permanent injection wells
- Direct-push injection points

Application instructions for this product are contained in the CRS Application Instructions.

## Health and Safety

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200. Observe good industrial hygiene practices. Wash hands after handling. Store away from incompatible materials. Dispose of waste and residues in accordance with local authority requirements. Please review the [CRS PLUS Material Safety Data Sheet](#) for additional storage, usage, and handling requirements.

## BDI PLUS® Technical Description

Bio-Dechlor INOCULUM Plus (BDI PLUS®) is an enriched natural consortium containing species of *Dehalococcoides* sp. (DHC). BDI PLUS has been shown to simulate the rapid and complete dechlorination of chlorinated solvents such as tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride (VC) to non-toxic end products, ethene, carbon dioxide and water.

The culture also contains microbes capable of dehalogenating halomethanes (e.g., carbon tetrachloride and chloroform) and haloethanes (e.g., 1,1,1-TCA and 1,1-DCA) as well as mixtures of these contaminants.



Species of *Dehalococcoides* sp. (DHC)

For a list of treatable contaminants with the use of BDI PLUS, view the [Range of Treatable Contaminants Guide](#)

### Chemical Composition

- Non-hazardous, naturally-occurring, non-altered anaerobic microbes and enzymes in a water-based medium.

### Properties

- Appearance – Murky, yellow to grey water
- Odor – Musty
- pH 6.0 to 8.0
- Density – Approximately 1.0 grams per cubic centimeter (0.9 to 1.1 g/cc)
- Solubility – Soluble in Water
- Vapor Pressure – None
- Non-hazardous

### Storage and Handling Guidelines

#### Storage

Store in original tightly closed container

Store away from incompatible materials

Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass

Store in a cool, dry area at 4-5°C (39 - 41°F)

Material may be stored for up to 3 weeks at 2-4°C without aeration

#### Handling

Avoid prolonged exposure

Observe good industrial hygiene practices

Wear appropriate personal protective equipment

# BDI PLUS® Technical Description

## Applications

- BDI PLUS is delivered to the site in liquid form and is designed to be injected directly into the saturated zone requiring treatment.
- Most often diluted with de-oxygenated water prior to injection into either hydraulic push injection points or properly constructed injection wells.
- The typical dilution rate of the injected culture is 10 gallons of deoxygenated water to 1 liter of standard BDI PLUS culture.

Application instructions for this product are contained here [BDI PLUS Application Instructions](#).

## Health and Safety

Material is non-hazardous and relatively safe to handle; however avoid contact with eyes and prolonged contact with skin. OSHA Level D personal protection equipment including: vinyl or rubber gloves and safety goggles or a splash shield are recommended when handling this product. An eyewash station is recommended. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: [BDI PLUS SDS](#).





Project Information			3-D Microemulsion®, BDI® Plus, CRS® Application Design Summary		
<b>O.H. Martin. DC</b> City, State <b>ERD Plume Treatment</b> Prepared For: <b>Keith Gaskill (Enviroforensics)</b>					
Target Treatment Zone (TTZ) Info		Unit	Value	ERD Plume Treatment	
Treatment Area	ft <sup>2</sup>	17,980	Application Method	Direct Push	
Top Treat Depth	ft	28.0	Spacing Within Rows (ft)	15	
Bot Treat Depth	ft	40.0	Spacing Between Rows (ft)	30	
Vertical Treatment Interval	ft	12.0	Application Points	40	
Treatment Zone Volume	ft <sup>3</sup>	215,760	Areal Extent (square ft)	17,980	
Treatment Zone Volume	cy	7,991	Top Application Depth (ft bgs)	28	
Soil Type	---	sand	Bottom Application Depth (ft bgs)	40	
Porosity	cm <sup>3</sup> /cm <sup>3</sup>	0.33	<b>3DME to be Applied (lbs)</b>	<b>16,000</b>	
Effective Porosity	cm <sup>3</sup> /cm <sup>3</sup>	0.20	3DME to be Applied (gals)	1,917	
Treatment Zone Pore Volume	gals	532,619	3DME Mix %	8%	
Treatment Zone Effective Pore Volume	gals	322,799	<b>Volume Water (gals)</b>	<b>22,049</b>	
Fraction Organic Carbon (foc)	g/g	0.002	3DME Mix Volume (gals)	23,966	
Soil Weight	lbs	2.3E+07	<b>CRS to be Applied (lbs)</b>	<b>4,000</b>	
Hydraulic Conductivity	ft/day	25.0	CRS Volume (gals)	457	
Hydraulic Conductivity	cm/sec	8.82E-03	<b>BDI Plus to be Applied (L)</b>	<b>60</b>	
Hydraulic Gradient	ft/ft	0.002	BDI Mix Water Volume (gals)	600	
GW Velocity	ft/day	0.20	<b>Total Application Volume (gals)</b>	<b>25,039</b>	
GW Velocity	ft/yr	74	Estimated Radius of Injection (ft)	7.5	
Sources of 3-D Microemulsion Demand		Unit	Value	Prepared by: Doug Davis Date: 1/26/2018	
Dissolved Phase Mass	lbs	0	<b>Technical Notes/Discussion</b>		
Sorbed Phase Contaminant Mass	lbs	0	<b>Assumptions/Qualifications</b>		
Competing Electron Acceptor Mass	lbs	400	In generating this preliminary estimate, Regenesi s relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.  REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s). The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the Government.		
Stoichiometric 3DME Demand	lbs	414			
TTZ Groundwater Mass Flux	L/day	1,602			
CVOC Mass Flux through TTZ	lb/yr	0			
CEA Mass Flux through TTZ	lb/yr	116			
Total Mass Flux through TTZ	lb/yr	116	Volume per vertical ft (gals) 52		
<b>Total Mass Flux 3DME Demand</b>	lbs	<b>361</b>			
Application Dosing					
<b>3-D Microemulsion to be Applied</b>	lbs	<b>16,000</b>			
<b>CRS to be Applied</b>	lbs	<b>4,000</b>			
<b>BDI Plus to be Applied</b>	liters	<b>60</b>			
<b>HRC Primer to be Applied</b>	lbs	<b>0</b>			