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[Terracon.com](http://Terracon.com)

February 15, 2023

United Farmers Cooperative  
203 West Oak Street  
Red Oak, Iowa 51566

Attn: Ms. Lynette VanDenEinde

Re: 2023 Work Plan for Groundwater Monitoring and System O&M  
United Farmers Mercantile Coop  
401 North U Avenue, Villisca, Iowa  
IDNR Spill ID # 101414-JLC-1831  
Terracon Project No. 05147197

Dear Ms. VanDenEinde:

Terracon Consultants, Inc. (Terracon) appreciates the opportunity to submit this work plan to conduct groundwater monitoring and continued remediation system operation and maintenance (O&M) at the above-referenced site. The following sections provide our understanding of the project, safety, scope of services, schedule, and fees.

## **1.0 PROJECT INFORMATION**

The United Farmers Mercantile Cooperative (UFMC) site is located at 401 North U Avenue in Villisca, Montgomery County, Iowa. The site location is depicted on the attached Exhibit 1. Pertinent site features and the historical layout of the site is depicted on the attached Exhibit 2. The attached Exhibit 3 is focused on the source area of the site and the remedial system layout. Project information has been summarized in previous document submittals including the most recent report dated January 30, 2023.

A soil vapor extraction (SVE) system was installed at the site to address ammonia concentrations in the source area. The SVE system was started in April 2020. The SVE system operated continuously in 2021 until October 2, 2021. The SVE system motor was removed on November 1, 2021 for repair and was reinstalled on April 18, 2022 and the system was restarted. Groundwater monitoring was conducted in May, and October 2022 to evaluate ammonia and nitrate-nitrite concentrations. The SVE system operation and maintenance and groundwater monitoring were summarized in the reports dated October 20, 2022 and January 30, 2023. The reports were submitted to the Iowa Department of Natural Resources (IDNR) for comment. The IDNR concurred with continued operation of the SVE system, monitoring well sampling and reporting and requested the work plan for 2023 services be submitted to IDNR for their review. This work plan is being submitted for the 2023 services.

## **2.0 SCOPE OF SERVICES**

### **2.1 Commitment to Safety**

Terracon has a 100% commitment to the safety of all its employees. As such, and in accordance with our Incident and Injury Free® safety culture, Terracon will develop a safety plan to be used by our personnel during field services. Prior to commencement of on-site activities, Terracon will hold a meeting to review health and safety needs for this specific project. At this time, we anticipate conducting fieldwork in a USEPA Level D work uniform consisting of a hard hat, safety glasses, protective gloves, reflective vest, and steel-toed boots. If conditions are encountered that present an increased risk for personal exposure, it may become necessary to upgrade this level of protection.

### **2.2 Proposed Monitoring Services (February 2023 through January 2024)**

Terracon proposes the following monitoring services during the period from February 2023 (pending SVE restart) through January 2024.

- Monthly O&M services conducted on the SVE remediation system.
- During the April and October 2023 monitoring events, depth to groundwater gauging will be conducted at monitoring wells MW-1, MW-2R, MW-3 through MW-5, MW-1E, and MWE-4E(R), if accessible.
- During the April and October 2023 monitoring events, groundwater samples will be collected from monitoring wells MW-1, MW-2R, MW-3 through MW-5, and MW-1E, if accessible and if sufficient water is present for sample collection. A groundwater sample will also be collected from City Well #9 during each event if granted access by City of Villisca personnel. Prior to sampling, wells will be purged. Samples will be placed in a cooler containing ice during field work and sample shipment periods. The samples and completed chain-of-custody forms will be shipped using an overnight courier to Eurofins in Cedar Falls, Iowa for analysis of ammonia as nitrogen and nitrate-nitrite as nitrogen by EPA methods 350.1 and 353.2, respectively. Duplicate and blank samples will not be collected for laboratory analysis, unless specifically required.

### **2.3 Reporting and Project Management**

- Terracon will prepare an annual report following the December 2023 O&M activities which will discuss the monthly O&M and semi-annual monitoring well gauging and sampling events from April and October 2023. The report will include recommendations, if any, regarding continued SVE remediation system operation. Periodic updates will be provided to the client and IDNR as needed.

### 3.0 SCHEDULE

O&M and groundwater monitoring services will be conducted on the schedule noted in Section 2.3. The report will be submitted to UPMC and IDNR within approximately 30 business days following the December 2023 monthly system O&M.

### 4.0 FEES

Terracon's estimated fees for conducting services noted in this work plan are itemized on the attached Table 1. Actual costs will be invoiced on a time and materials basis per the attached 2023 fee schedule.

### 5.0 CONDITIONS

If there are any restrictions or special requirements regarding the site (i.e. security check-in, on-site safety requirements, scheduling, etc.), these should be made known to us prior to commencing fieldwork. Furthermore, Terracon has assumed the Terracon field crew will use Level D health and safety protection. If for any reason, conditions warrant an upgrade in personal protective equipment, Terracon will contact the client to discuss this situation along with a revised cost estimate to conduct the field services.

### 6.0 AUTHORIZATION

Terracon will proceed with the proposed scope of services following notice to proceed from UPMC and execution and return of the attached Supplement to Agreement for Services.

We appreciate the opportunity to provide this work plan and look forward to working with you on this project. If you have any questions or comments regarding this work plan, please contact Michaela Brewster at (402) 384-7008.

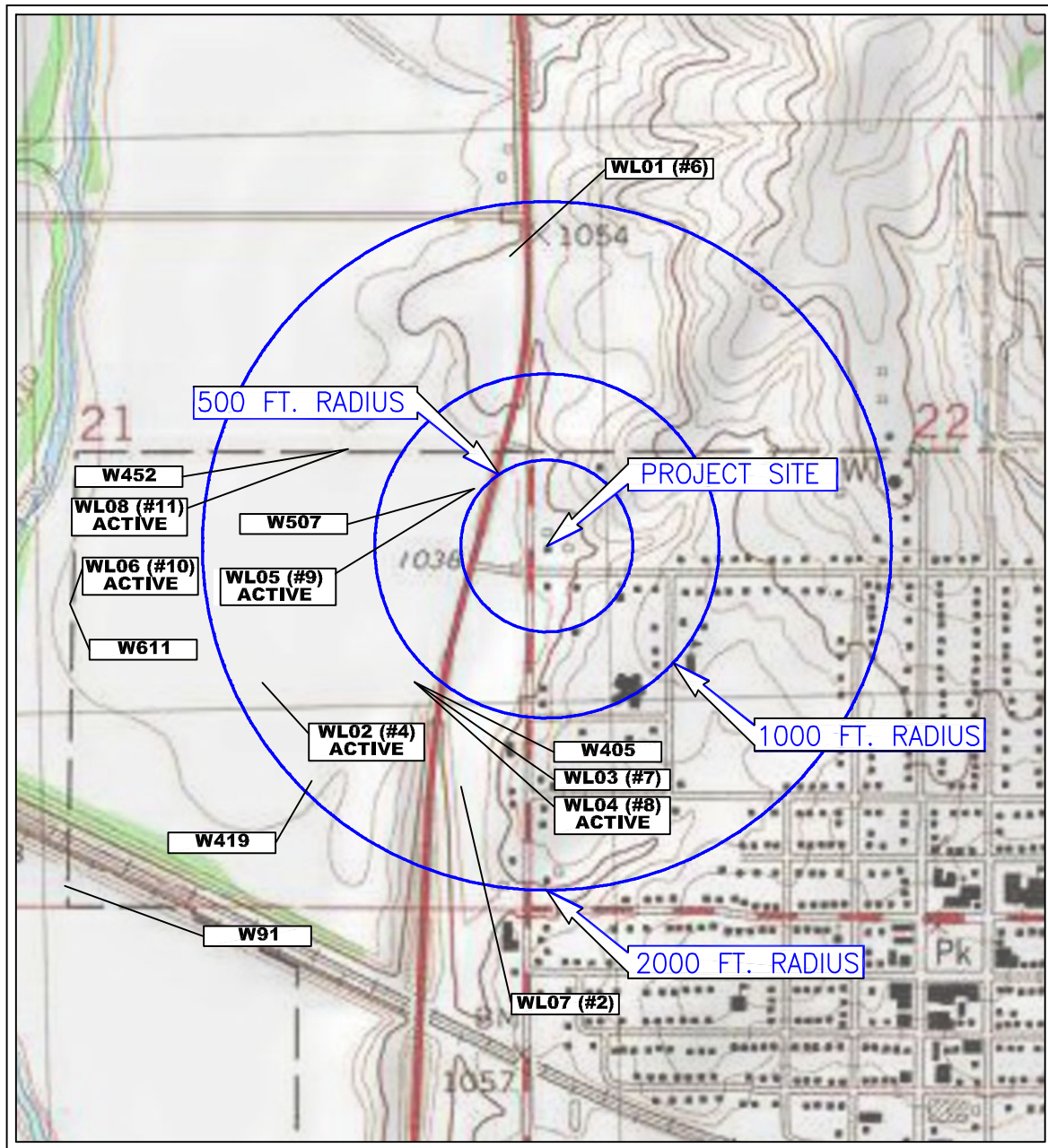
Sincerely,  
**Terracon Consultants, Inc.**

Derek Wilken, P.G.(CA, NE)  
Environmental Geologist

Michaela T. Brewster, CPG  
Principal


Distribution: Addressee (pdf)  
Marty Cameron and Monte Hamilton, United Farmers Cooperative (pdf)  
Hylton Jackson, Iowa Department of Natural Resources (pdf)

Attachments: Exhibit 1 – Topographic/Location Map  
Exhibit 2 – Site Diagram  
Exhibit 3 – Source Area Diagram  
Table 1 – Cost Estimate  
Supplement to Agreement for Services  
2023 Fee Schedule



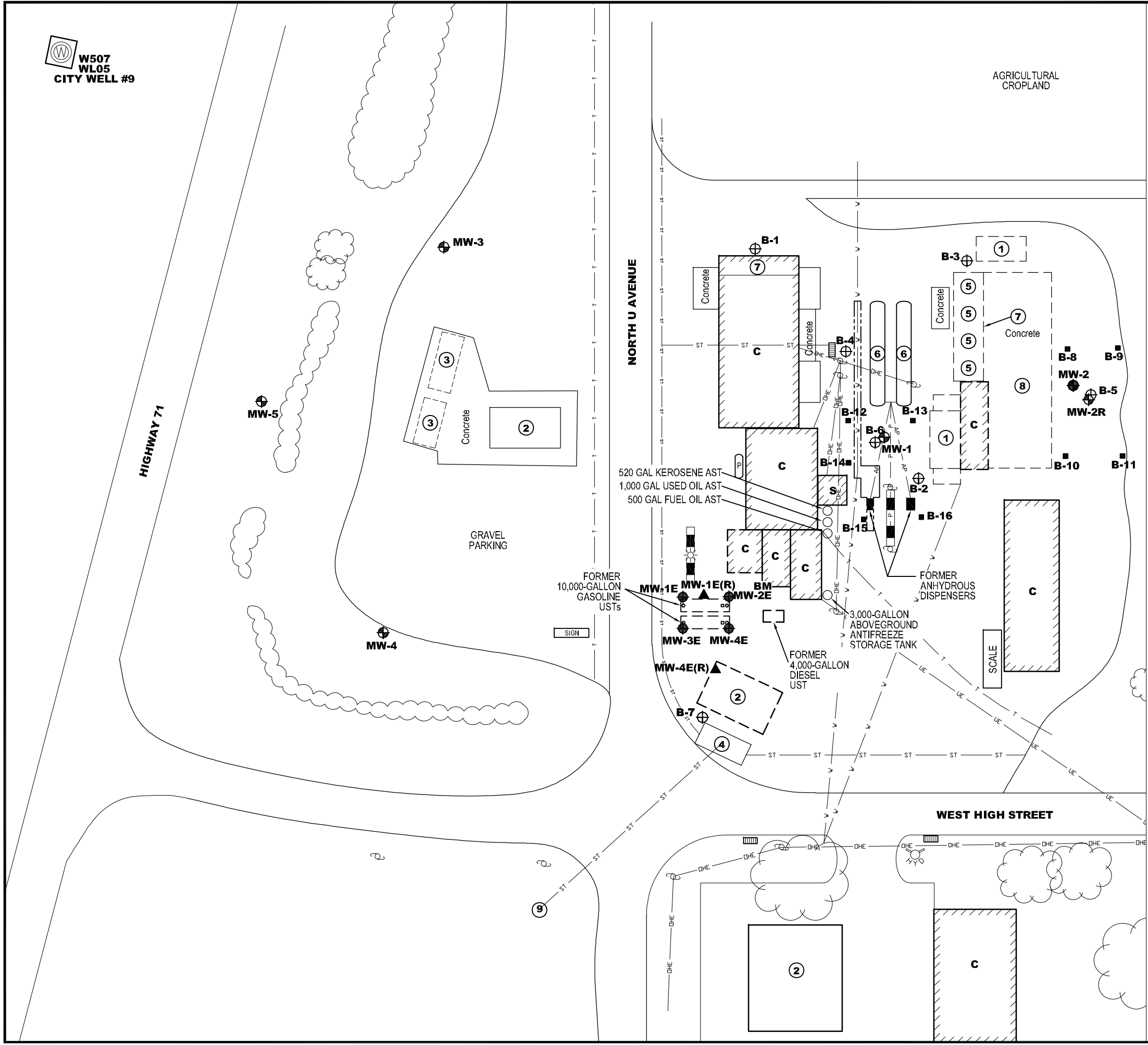
CONTOUR INTERVAL 10 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

VILLISCA, IOWA  
QUADRANGLE  
1993  
7.5 MINUTE SERIES (TOPOGRAPHIC)

Project Mngnr:	RDW	Project No.	05147197	TOPOGRAPHIC / LOCATION MAP		EXHIBIT	
Drawn By:	PAI	Scale:	AS SHOWN	UNITED FARMERS MERCANTILE COOP 401 NORTH U AVENUE VILLISCA IOWA		1	
Checked By:	RDW	File No.	05147197R08				
Approved By:	MBR	Date:	1/23/23				
							
15080 A CIRCLE OMAHA, NE 68144 PH. (402) 330-2202 FAX. (402) 330-7606							



W507  
WL05  
CITY WELL #9

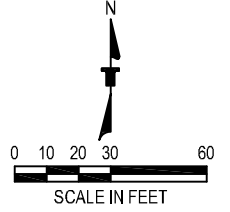


- BUILDING WITH NO BASEMENT
- UTILITY POLE
- LIGHT POLE
- STORM WATER INLET
- PROPANE TANK
- MONITORING WELL
- EXISTING WELL FOR UST SYSTEM (INSTALLED BY OTHERS)
- SOIL BORING LOCATION
- TEMPORARY SOIL / WATER SAMPLE LOCATION
- FIRE HYDRANT
- DISPENSER ISLAND
- ST STORM SEWER
- DHE OVERHEAD ELECTRIC
- FP FORMER UNDERGROUND LIQUID FERTILIZER SUPPLY PIPELINE
- AP FORMER UNDERGROUND ANHYDROUS SUPPLY PIPELINE
- P ABOVEGROUND ANHYDROUS SUPPLY PIPELINE
- APPROXIMATE EXTENT OF FORMER EXCAVATION BOUNDARY
- T TELEPHONE / COMMUNICATION LINE
- W WATER
- UE UNDERGROUND ELECTRIC
- FORMER STRUCTURE

- 1 FORMER CONCRETE PADS WITH CURBS FOR FORMER LOAD IN/OUT AREAS
- 2 CANOPY OVER FUELING DISPENSERS
- 3 ABOVE GROUND FUEL STORAGE TANK
- 4 STORMWATER STRUCTURE
- 5 FORMER ABOVE-GROUND LIQUID FERTILIZER TANKS
- 6 ABOVE-GROUND ANHYDROUS FERTILIZER TANK
- 7 FORMER CONCRETE SECONDARY CONTAINMENT AREA
- 8 FORMER DRY FERTILIZER STORAGE AREA
- 9 STORMWATER DISCHARGE TO DITCH
- C COMMERCIAL BUILDING
- S SHED
- TREE / SHRUB
- DECOMMISSIONED MONITORING WELL
- BM BENCH MARK

NOTES:  
1. SITE FEATURES WERE DIGITIZED FROM AERIAL PHOTOGRAPHS AND SITE MEASUREMENTS. UTILITY LOCATIONS ARE BASED ON THE LOCATIONS MARKED BY UTILITY COMPANIES OR FROM UPMC PERSONNEL INTERVIEW. LOCATIONS ARE APPROXIMATE AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

2. STRUCTURES DEPICTED ON THIS EXHIBIT WERE PRESENT DURING WELL INSTALLATION AND REMEDIATION SYSTEM INSTALLATION EVENTS. AS OBSERVED BY TERRACON PERSONNEL DURING THE APRIL 2020 MONITORING EVENTS, SEVERAL SURFACE STRUCTURES WERE DEMOLISHED. EXHIBIT 3 DEPICTS AN UPDATED SITE LAYOUT FOLLOWING DEMOLITION ACTIVITIES.



DESIGNED BY: RDW	PAI
DRAWN BY: MBR	AS SHOWN
SCALE: 1/2"=1'	1/2"=1'
JOB NO. 05147197	05147197R08
ACAD NO. 05147197R08	EXHIBIT: 2

SITE DIAGRAM

UNITED FARMERS MERCANTILE COOP

401 North U Avenue

VILLISCA

IOWA

Terracon

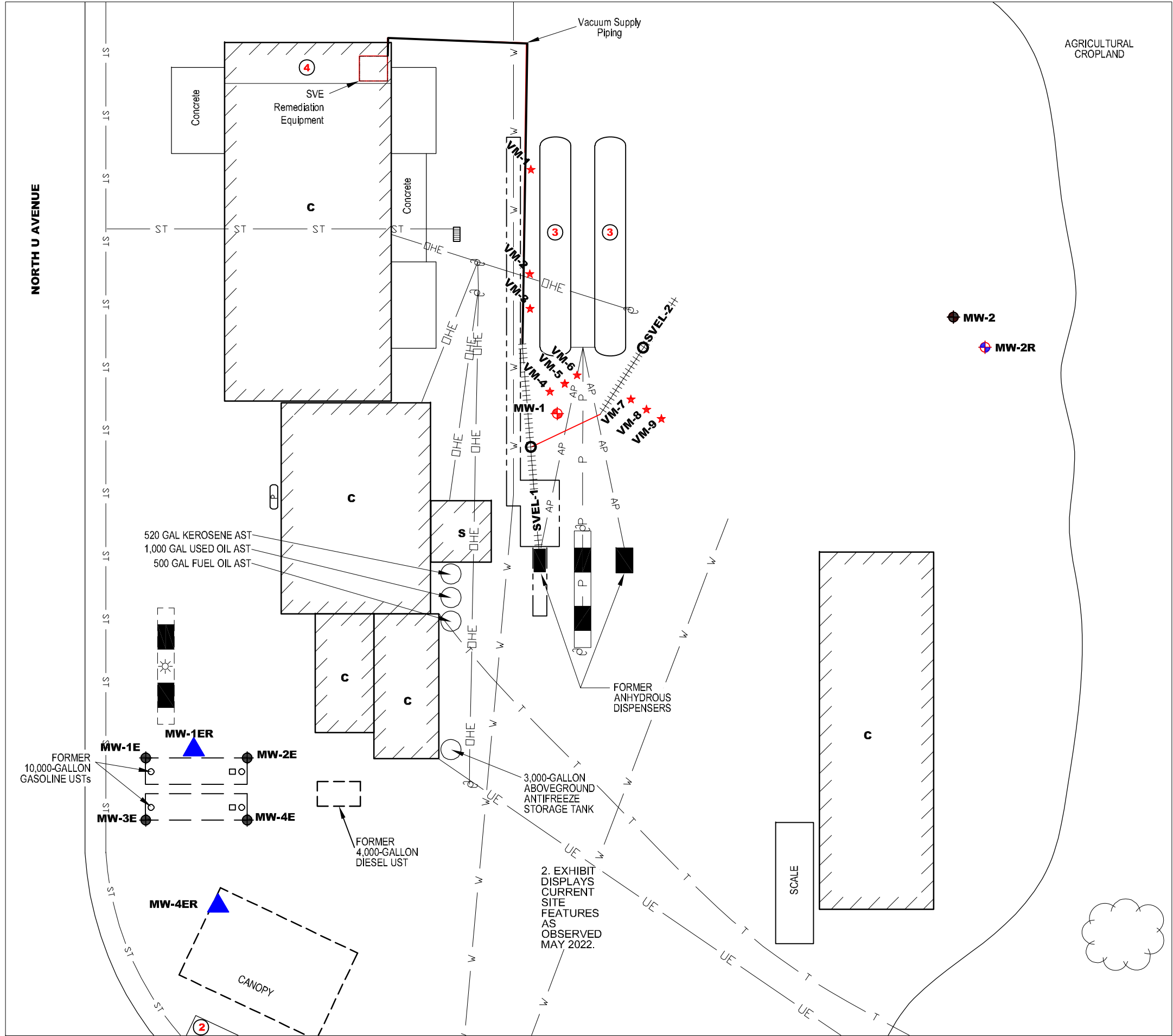
Consulting Engineers and Scientists

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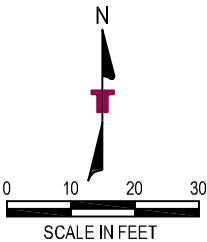
REV.	DATE	BY	DESCRIPTION





- LEGEND:
- BUILDING WITH NO BASEMENT
  - BUILDING WITH BASEMENT
  - UTILITY POLE
  - LIGHT POLE
  - STORM WATER INLET
  - PROPANE TANK
  - MONITORING WELL
  - EXISTING WELL FOR UST SYSTEM INSTALLED BY OTHERS
  - LSI SOIL / WATER SAMPLE LOCATION
  - VACUUM MONITORING POINT
  - FIRE HYDRANT
  - CURRENT DISPENSER ISLAND
  - STORM SEWER
  - OVERHEAD ELECTRIC
  - FORMER UNDERGROUND LIQUID FERTILIZER SUPPLY PIPELINE
  - FORMER UNDERGROUND ANHYDROUS SUPPLY PIPELINE
  - ABOVEGROUND ANHYDROUS SUPPLY PIPELINE
  - APPROXIMATE EXTENT OF FORMER EXCAVATION BOUNDARY
  - TELEPHONE / COMMUNICATION LINE
  - WATER
  - UNDERGROUND ELECTRIC
  - SCREENED LATERAL
  - STORMWATER STRUCTURE
  - ABOVE-GROUND ANHYDROUS FERTILIZER TANK
  - CONCRETE SECONDARY CONTAINMENT AREA
  - COMMERCIAL BUILDING
  - SHED
  - TREE / SHRUB
  - LATERAL ACCESS POINT
  - DECOMMISSIONED MONITORING WELL

NOTES:  
1. SITE FEATURES WERE DIGITIZED FROM AERIAL PHOTOGRAPHS AND SITE MEASUREMENTS. UTILITY LOCATIONS ARE BASED ON THE LOCATIONS MARKED BY UTILITY COMPANIES OR FROM UPMC PERSONNEL INTERVIEW. LOCATIONS ARE APPROXIMATE AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.  
2. EXHIBIT DISPLAYS CURRENT SITE FEATURES AS OBSERVED MAY 2022.



SOURCE AREA DIAGRAM

SOIL AND GROUNDWATER ASSESSMENT  
UNITED FARMERS MERCANTILE COOP

401 North U Avenue

VILLISCA

IOWA

REV. DATE BY DESCRIPTION


**Terracon**  
Consulting Engineers and Scientists

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DESIGNED BY: RDW	
DRAWN BY: PAI	
APP'D BY: MEH	
SCALE: AS SHOWN	
DATE: 1/23/23	
JOB NO. 05147197	
ACAD NO. 05147197R08A	
EXHIBIT: 3	

TABLE 1

**United Farmers Mercantile COOP**  
**Villisca, Iowa**  
**IDNR Spill ID # 101414-JLC-1831**  
**Terracon Project No. 05147197**

**Cost Estimate**

**Planned Activities**

<b>Description</b>	<b>Cost per Unit</b>	<b>Unit Type</b>	<b>No. of Units</b>	<b>Fee</b>
Mobilization for Monthly O&M Site Visits (loading/unloading, travel, & mileage) for February 2023 through January 2024	\$ 480	/event	12	\$ 5,760
Hotel and Meals Monthly Site Visits (hotels & meals, 1-man crew) for February 2023 through January 2024	\$ 180	/crew-day	12	\$ 2,160
Monthly O&M Field Labor (SVE Remediation System) for February 2023 through December 2023	\$ 180	/event	12	\$ 2,160
Monthly O&M Materials & Equipment	\$ 150	/event	12	\$ 1,800
Groundwater Sampling Field Labor (groundwater elevation, purging, & sampling) April 2023 and October 2023	\$ 375	/event	2	\$ 750
Groundwater Sampling Materials & Equipment	\$ 250	/event	2	\$ 500
Laboratory Fees for Water - wells (7 groundwater samples per event) April 2023 and October 2023	\$ 50	/sample	14	\$ 700
Reporting (1 report) and Project Management	\$ 2,500	/each	1	\$ 2,500
<b>Subtotal</b>				<b>\$ 16,330</b>
<b>Contingency (10%)</b>				<b>\$ 1,633</b>
<b>Total (Subtotal + Contingency)</b>				<b>\$ 17,963</b>

**NOTES:**

1. Actual costs will be invoiced on a time and materials basis.
2. In an effort to reduce mobilization costs, monthly site visits will be coordinated with other site activities in the general area to share travel expenses.

**SUPPLEMENT TO AGREEMENT FOR SERVICES****CHANGE TO  
SCOPE OF SERVICES AND FEES**

This **SUPPLEMENT to AGREEMENT FOR SERVICES** to the original Agreement for Services (original Agreement dated 11/25/2014, Agreement reference number P05140880) is between United Farmers Mercantile Co ("Client") and Terracon Consultants, Inc. ("Consultant") for additional or changed Services to be provided by Consultant for Client on the Project, as described in the Agreement for Services. This Supplement is incorporated into and part of the Agreement for Services.

- 1. Scope of Services.** The scope of the additional or changed Services are described in the Scope of Services section of the Consultant's Supplemental Proposal, unless Services are otherwise described below or in Exhibit B to this Supplement (which section or exhibit are incorporated into the Supplement).

Please refer to Terracon's Work Plan, dated February 15, 2023.

- 2. Compensation.** Client shall pay compensation for the additional or changed Services performed at the fees stated in the Supplemental Proposal unless fees are otherwise stated below or in Exhibit C to this Supplement (which section or exhibit are incorporated into the Supplement).

Please refer to Terracon's Work Plan, dated February 15, 2023.

All terms and conditions of the **Agreement for Services** shall continue in full force and effect. This Supplement is accepted and Consultant is authorized to proceed.

Consultant: **Terracon Consultants, Inc.**

By: \_\_\_\_\_ Date: **2/15/2023**

Name/Title: **Michaela T. Brewster / Project Manager**

Address: **15080 A Cir**  
**Omaha, NE 68144-5558**

Phone: **(402) 330-2202** Fax: **(402) 330-7606**

Email: **Michaela.Brewster@terracon.com**

Client: **United Farmers Mercantile Co**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name/Title: **Lynette VanDenEinde /**

Address: **203 W Oak St**  
**Red Oak, IA 51566-1432**

Phone: **(712) 623-5453** Fax: \_\_\_\_\_

Email: **lvandeneinde@united-farmers.com**





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**2023 Fee Schedule**  
**Terracon – Environmental Department**  
**Omaha/Lincoln/Sioux City**

Billing Title	2022 Hourly Rate
Administrative	\$85 - \$100
Technician I	\$70 - \$80
Technician II	\$80 - \$90
Technician III	\$90 - \$100
Field Scientist	\$90 - \$100
Field Geologist	\$100 - \$115
Field Engineer	\$105 - \$135
Staff Scientist	\$95 - \$115
Staff Geologist	\$100 - \$115
Staff Engineer	\$110 - \$150
Senior Staff Geologist	\$115 - \$150
Senior Staff Engineer	\$125 - \$170
Project Scientist	\$120 - \$145
Project Engineer	\$145 - \$170
Project Manager	\$125 - \$170
CAD Designer/GIS Specialist	\$115 - \$160
Senior Scientist	\$125 - \$210
Senior Geologist	\$150 - \$215
Senior Engineer	\$155 - \$235
Senior Project Manager	\$195 - \$215
Senior Project Manager II	\$205 - \$215
Principal/Senior Principal/Senior Consultant	\$200 - \$300

Drilling Services and Materials:

Quoted by Project

Direct Expenses

Field Equipment (Per Equipment Schedule):

Quoted by Project, typically \$20-\$250/day

Vehicle:

\$60/day and \$0.90/mile

Meals, Lodging, Other Expenses:

Cost + 20%

Subcontractors:

Cost + 20%

Per Diem:

\$180/day

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