

# Dane County Contract Cover Sheet

Revised 01/2024

Res 205  
significant

<b>Dept./Division</b>	Airport/Admin		
<b>Vendor Name</b>	Orin	<b>MUNIS #</b>	
<b>Brief Contract Title/Description</b>	Award of contract for environmental site remediation at darwin training area at the Dane County Regional Airport		
<b>Contract Term</b>	Current to completion or 12/31/2026		
<b>Contract Amount</b>	\$1,500,000		

<b>Contract #</b> Admin will assign	15642
<b>Type of Contract</b>	
<input checked="" type="checkbox"/>	Dane County Contract
<input type="checkbox"/>	Intergovernmental
<input type="checkbox"/>	County Lessee
<input type="checkbox"/>	County Lessor
<input type="checkbox"/>	Purchase of Property
<input type="checkbox"/>	Property Sale
<input type="checkbox"/>	Grant
<input type="checkbox"/>	Other

Department Contact Information		Vendor Contact Information	
<b>Name</b>	Adam Ussher	<b>Name</b>	Larry Kinsman
<b>Phone #</b>	608.246.3388	<b>Phone #</b>	608.838.6699
<b>Email</b>	ussher.adam@msnairport.com	<b>Email</b>	lkinsman@orinrt.com
<b>Purchasing Officer</b>	Peter Patten		

<b>Purchasing Authority</b>	<input type="checkbox"/> \$13,000 or under – Best Judgment (1 quote required)	
	<input type="checkbox"/> Between \$13,000 – \$44,000 (\$0 – \$25,000 Public Works) (3 quotes required)	
	<input type="checkbox"/> Over \$44,000 (\$25,000 Public Works) (Formal RFB/RFP required)	<b>RFB/RFP #</b>
	<input type="checkbox"/> Bid Waiver – \$44,000 or under (\$25,000 or under Public Works)	
	<input checked="" type="checkbox"/> Bid Waiver – Over \$44,000 (N/A to Public Works)	
	<input type="checkbox"/> N/A – Grants, Leases, Intergovernmental, Property Purchase/Sale, Other	



<b>MUNIS Req.</b>	<b>Req #</b>	<b>Org:</b>	<b>Obj:</b>	<b>Proj:</b>	<b>\$</b>
	<b>Year</b>	<b>Org:</b>	<b>Obj:</b>	<b>Proj:</b>	<b>\$</b>
		<b>Org:</b>	<b>Obj:</b>	<b>Proj:</b>	<b>\$</b>

Budget Amendment	
<input type="checkbox"/>	A Budget Amendment has been requested via a Funds Transfer or Resolution. Upon addendum approval and budget amendment completion, the department shall update the requisition in MUNIS accordingly.

<b>Resolution</b> Required if contract exceeds \$100,000	<input type="checkbox"/> Contract does not exceed \$100,000	<b>Res #</b>	205
	<input checked="" type="checkbox"/> Contract exceeds \$100,000 – resolution required.	<b>Year</b>	2024
	<input checked="" type="checkbox"/> A copy of the Resolution is attached to the contract cover sheet.		

CONTRACT MODIFICATIONS – Standard Terms and Conditions		
<input checked="" type="checkbox"/> No modifications.	<input type="checkbox"/> Modifications and reviewed by:	<input type="checkbox"/> Non-standard Contract

APPROVAL	
<b>Dept. Head / Authorized Designee</b>	
Ussher, Adam	Digitally signed by Ussher, Adam Date: 2024.11.13 10:14:03 -06'00'

APPROVAL – Contracts Exceeding \$100,000	
<b>Director of Administration</b>	<b>Corporation Counsel</b>
	

APPROVAL – Internal Contract Review – Routed Electronically – Approvals Will Be Attached			
<b>DOA:</b>	<b>Date In:</b> 11/13/24	<b>Date Out:</b> _____	<input checked="" type="checkbox"/> Controller, Purchasing, Corp Counsel, Risk Management

## Goldade, Michelle

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**From:** Goldade, Michelle  
**Sent:** Wednesday, November 13, 2024 11:40 AM  
**To:** Hicklin, Charles; Patten (Purchasing), Peter; Gault, David; Cotillier, Joshua  
**Cc:** Stavn, Stephanie; Oby, Joe  
**Subject:** Contract #15642  
**Attachments:** 15642.pdf

<b>Tracking:</b>	<b>Recipient</b>	<b>Read</b>	<b>Response</b>
	Hicklin, Charles	Read: 11/13/2024 1:18 PM	Approve: 11/13/2024 1:18 PM
	Patten (Purchasing), Peter		Approve: 11/13/2024 4:37 PM
	Gault, David	Read: 11/13/2024 12:53 PM	Approve: 11/13/2024 12:55 PM
	Cotillier, Joshua		Approve: 11/14/2024 10:33 AM
	Stavn, Stephanie	Read: 11/13/2024 12:52 PM	
	Oby, Joe		

Please review the contract and indicate using the vote button above if you approve or disapprove of this contract.

Contract #15642  
Department: Airport  
Vendor: ORIN Technologies  
Contract Description: Providing environmental remediation work at Darwin Training Area (Res 205)  
Contract Term: 12/1/24 – 12/31/26  
Contract Amount: \$1,500,000.00

Thanks much,  
Michelle

*Michelle Goldade*

Administrative Manager  
Dane County Department of Administration  
Room 425, City-County Building  
210 Martin Luther King, Jr. Boulevard  
Madison, WI 53703  
PH: 608/266-4941  
Fax: 608/266-4425  
TDD: Call WI Relay 711

Please note: I am currently working a modified schedule. I work in office Mondays and Wednesdays and work remotely Tuesday, Thursdays and Fridays.



**DANE COUNTY CONTRACT # 15642**



**Department:** Dane County Regional Airport

**Provider:** ORIN Technologies, LLC

Upon completion or

**Expiration Date:** December 31, 2026,  
whichever is sooner

**Maximum Cost:** Not to exceed \$1,500,000

**Registered Agent (if applicable):** Lawrence J. Kinsman

405 Investment Court

**Registered Agent Address:** Verona, Wisconsin 53593

**THIS AGREEMENT** is between the County of Dane, a Wisconsin quasi-municipal corporation ("COUNTY"), and ORIN Technologies, LLC, a Wisconsin limited liability company ("PROVIDER") and is effective on the date it is fully executed by both parties.

**RECITALS:**

1. COUNTY, whose address is c/o Airport Director, 4000 International Lane, Madison, Wisconsin 53704, desires to purchase services from PROVIDER for the purpose of providing environmental remediation work at the Darwin Training Area located near the Dane County Regional Airport ("Airport"); and
2. PROVIDER, whose address is 405 Investment Court, Verona, Wisconsin 53593, is able and willing to provide such services;

**ACCORDINGLY**, COUNTY and PROVIDER agree as follows:

**I. TERM:**

The primary term of this Agreement begins upon execution and ends when the services are completed or on December 31, 2026, whichever is sooner ("EXPIRATION DATE"), unless sooner agreed to in writing by the parties. PROVIDER shall complete its obligations under this Agreement no later than the EXPIRATION DATE, except as extended by COUNTY. COUNTY shall not be liable for any services performed by PROVIDER other than during the term of this Agreement. COUNTY shall never pay more than the Maximum Cost as stated above for all services over the term of this Agreement, including any extensions. Upon failure of PROVIDER to complete its obligation set forth herein by the EXPIRATION DATE, COUNTY may invoke the penalties, if any, set forth in this document and its attachments, in addition to any other remedies available.

**II. SERVICES:**

- A. PROVIDER shall provide the services detailed in the bid specifications, if any; the request for proposal ("RFP") and PROVIDER's response to the RFP, if any; and on the attached Schedule A. In the event of a conflict between or among the bid specifications, the RFP or RFP response, or Schedule A or any of them, the terms of Schedule A are controlling to the extent of any conflict.
- B. PROVIDER shall perform its obligations under this Agreement with all deliberate speed and in a sound, economical, and efficient manner, in accordance with this Agreement and all laws. In providing services under this Agreement, PROVIDER shall cooperate with the various departments, agencies, employees, and officers of COUNTY.

- C. PROVIDER shall secure at its own expense all personnel necessary to carry out PROVIDER's obligations under this Agreement. Such personnel shall not be deemed to be employees of COUNTY nor shall they or any of them have or be deemed to have any direct contractual relationship with COUNTY.
- D. No portion of funds under this Agreement may be used to support or advance religious activities.
- E. PROVIDER warrants that it has complied with all necessary requirements to do business in the State of Wisconsin and has met all state and federal service standards, certifications, and assurances as expressed by State and Federal law.
- F. PROVIDER shall follow public health guidelines to provide safe services and a safe workplace. In addition, by signing this Agreement, PROVIDER acknowledges the contagious nature of COVID-19 and voluntarily assumes the risk that PROVIDER and its staff may be exposed to or infected by COVID-19 when providing services under this Agreement and that such exposure or infection may result in personal injury, illness, permanent disability, and death.
- G. PROVIDER further acknowledges that PROVIDER is assuming all of the foregoing risks and accept sole responsibility for any injury to itself and staff, including, but not limited to, personal injury, disability, death, illness, damage, loss, claim, liability, or expense or any kind, that PROVIDER or its staff may experience or incur in connection with providing services. PROVIDER hereby releases, covenants not to sue, discharges, and holds harmless and indemnifies the COUNTY, its employees, agents, and representatives, of and from any and all claims, including all liabilities, claims, actions, damages, costs or expenses of any kind arising out of or relating thereto. Provider understands and agrees that this release includes any claims based on the actions, omissions, or negligence of COUNTY, its employees, agents, and representatives, whether a COVID-19 infection occurs before, during, or after the provision of services under this Agreement.

**III. ASSIGNMENT/TRANSFER:**

PROVIDER shall not assign, subcontract, or transfer any interest or obligation in this Agreement, without the prior written consent of COUNTY, including the hiring of independent contract service providers unless otherwise provided herein. Claims for money due or to become due PROVIDER from COUNTY under this Agreement may be assigned to a bank, trust company or other financial institution without such approval if and only if the instrument of assignment contains a provision substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to PROVIDER shall be subject to prior claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the work called for in this Agreement. PROVIDER shall promptly provide notice of any such assignment or transfer to COUNTY. Any unauthorized assignment, subcontract, or transfer is void.

**IV. TERMINATION:**

- A. Failure of PROVIDER to fulfill any of its obligations under this Agreement in a timely manner, or violation by PROVIDER of any of the covenants or stipulations of this Agreement, shall constitute grounds for COUNTY to terminate this Agreement by giving a thirty (30) day written notice to PROVIDER.
- B. The following shall constitute grounds for immediate termination:
  - 1. violation by PROVIDER of any law, or failure by PROVIDER to comply with any State and Federal service standards, as expressed by statute, rule, and regulation;
  - 2. failure by PROVIDER to carry licenses or certifications as required by law;
  - 3. failure of PROVIDER to comply with reporting requirements contained in this Agreement; or
  - 4. inability of PROVIDER to perform the work provided for herein.

- C. Failure of the Dane County Board of Supervisors or the State or Federal Governments to appropriate sufficient funds to carry out COUNTY's obligations hereunder, shall result in automatic termination of this Agreement as of the date funds are no longer available, without notice.
- D. In the event COUNTY terminates this Agreement as provided herein, all finished and unfinished documents, services, papers, data, products, and the like prepared, produced or made by PROVIDER under this Agreement shall at the option of COUNTY become the property of COUNTY, and PROVIDER shall be entitled to receive just and equitable compensation, subject to any penalty, for any satisfactory work completed on such documents, services, papers, data, products or the like. Notwithstanding the above, PROVIDER shall not be relieved of liability to COUNTY for damages sustained by COUNTY by virtue of any breach of this Agreement by PROVIDER, and COUNTY may withhold any payments to PROVIDER for the purpose of offset.

**V. PAYMENT:**

COUNTY agrees to make such payments for services rendered under this Agreement as and in the manner specified in this Agreement and the attached Schedule B. Notwithstanding any language to the contrary in this Agreement or its attachments, COUNTY shall never be required to pay more than the sum set forth on page 1 of this Agreement under the heading MAXIMUM COST, for all services rendered by PROVIDER under this Agreement.

**VI. REPORTS:**

PROVIDER agrees to make such reports as are required in the attached schedules. With respect to such reports it is expressly understood that time is of the essence and that the failure of PROVIDER to comply with the time limits set forth in said schedules shall result in the penalties set forth herein.

**VII. DELIVERY OF NOTICE:**

Notices, bills, invoices, and reports required by this Agreement shall be deemed delivered as of the date of postmark if deposited in a United States mailbox, first class postage attached, addressed to a party's address as set forth above. A party changing its address shall notify the other party in writing within a reasonable time.

**VIII. INSURANCE & INDEMNIFICATION:**

- A. PROVIDER shall indemnify, hold harmless and defend COUNTY, its boards, commissions, agencies, officers, employees, and representatives against any and all liability, loss (including, but not limited to, property damage, bodily injury, and loss of life), damages, costs or expenses which COUNTY, its officers, employees, agencies, boards, commissions, and representatives may sustain, incur or be required to pay by reason of PROVIDER's furnishing the services or goods required to be provided under this Agreement, provided, however, that the provisions of this paragraph shall not apply to liabilities, losses, charges, costs, or expenses caused by or resulting from the acts or omissions of COUNTY, its agencies, boards, commissions, officers, employees or representatives. Any failure on the part of the PROVIDER to comply with reporting or other provisions of its insurance policies shall not affect this PROVIDER's obligations under this paragraph. COUNTY reserves the right, but not the obligation, to participate in defense without relieving PROVIDER of any obligation under this paragraph. The obligations of PROVIDER under this paragraph shall survive the expiration or termination of this Agreement.
- B. In order to protect itself and COUNTY, its officers, boards, commissions, agencies, agents, volunteers, employees, and representatives under the indemnity provisions of the subparagraph above, PROVIDER shall, at PROVIDER's own expense, obtain and at all times during the term of this Agreement keep in full force and effect the insurance coverages, limits, and endorsements listed below. When obtaining required insurance under this Agreement and otherwise, PROVIDER agrees to preserve COUNTY's subrogation rights in all such matters that may arise that are covered by PROVIDER's

insurance. Neither these requirements nor the COUNTY's review or acceptance of PROVIDER's certificates of insurance is intended to limit or qualify the liabilities or obligations assumed by the PROVIDER under this Agreement. The County expressly reserves the right to require higher or lower insurance limits where County deems necessary.

1. Commercial General Liability.

PROVIDER agrees to maintain Commercial General Liability insurance at a limit of not less than \$1,000,000 per occurrence. Coverage shall include, but not be limited to, Bodily Injury and Property Damage to Third Parties, Contractual Liability, Personal Injury and Advertising Injury Liability, Premises-Operations, Independent PROVIDERs and Subcontractors, and Fire Legal Liability. The policy shall not exclude Explosion, Collapse, and Underground Property Damage Liability Coverage. The policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations.

2. Professional Liability Insurance.

If PROVIDER renders professional services (such as medical, architectural or engineering services) under this Agreement, then PROVIDER shall provide and maintain two million dollars (\$2,000,000.00) of professional liability insurance. If such policy is a "claims made" policy, all renewals during the life of the Agreement shall include "prior acts coverage" covering at all times all claims made with respect to PROVIDER's work performed under the Agreement. This Professional Liability coverage must be kept in force for a period of six (6) years after the services have been accepted by COUNTY

3. Commercial/Business Automobile Liability Insurance.

If applicable to the services covered by this Agreement, PROVIDER shall provide and maintain commercial general liability and automobile liability insurance at a limit of not less than \$1,000,000 per occurrence. Coverage for commercial general liability and automobile liability insurance shall, at a minimum, be at least as broad as Insurance Services Office ("ISO") Commercial General Liability Coverage (Occurrence Form CG 0001) and ISO Business Auto Coverage (Form CA 0001), covering Symbol 1 (any vehicle).

4. Environmental Impairment (Pollution) Liability

If PROVIDER will be transporting waste or will be disposing of waste or products under this Agreement, then PROVIDER agrees to maintain Environmental Impairment (Pollution) Liability insurance at a limit of not less than \$1,000,000 per occurrence for bodily injury, property damage, and environmental cleanup costs caused by pollution conditions, both sudden and non-sudden. This requirement can be satisfied by either a separate environmental liability policy or through a modification to the Commercial General Liability policy. Evidence of either must be provided.

5. Workers' Compensation.

PROVIDER agrees to maintain Workers Compensation insurance at Wisconsin statutory limits.

6. Umbrella or Excess Liability.

PROVIDER may satisfy the minimum liability limits required above for Commercial General Liability and Business Auto Liability under an Umbrella or Excess Liability policy. There is no minimum Per Occurrence limit of liability under the Umbrella or Excess Liability; however, the Annual Aggregate limit shall not be less than the highest "Each Occurrence" limit for the Commercial General Liability and Business Auto Liability. PROVIDER agrees to list DANE COUNTY as an "Additional Insured" on its Umbrella or Excess Liability policy.

C. Required provisions.

1. Insurer's Requirement

All of the insurance shall be provided on policy forms and through companies satisfactory to COUNTY, and shall have a minimum AM Best's rating of A- VIII

2. Additional Insured.

COUNTY, its elected and appointed officials, officers, employees or authorized representatives or volunteers are to be given additional insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of PROVIDER; products and completed operations of PROVIDER; premises occupied or used by PROVIDER; and vehicles owned, leased, hired or borrowed by PROVIDER. The coverage shall contain no special limitations on the scope of protection afforded to COUNTY, its elected and appointed officials, officers, employees or authorized representatives or volunteers. Except for the workers compensation policy, each insurance policy shall contain a waiver of subrogation endorsement in favor of COUNTY.

3. Provider's Insurance Shall be Primary

For any claims related to this Agreement, PROVIDER's insurance shall be primary insurance with respect to COUNTY, its elected and appointed officials, officers, employees or authorized representatives or volunteers. Any insurance, self-insurance, or other coverage maintained by COUNTY, its elected and appointed officers, officials, employees or authorized representatives or volunteers shall not contribute to the primary insurance. PROVIDER's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability

4. Cancellation Notice

Each insurance policy required by this Agreement shall state, or be endorsed so as to the state, that coverage shall not be canceled by the insurance carrier or the PROVIDER, except after sixty (60) days (ten (10) days for non-payment of premium) prior written notice by U.S. mail has been given to COUNTY.

5. Evidences of Insurance.

Prior to execution of the Agreement, PROVIDER shall file with COUNTY a certificate of insurance (Accord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this Agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative. Such evidence shall also include confirmation that coverage includes or has been modified to include all required provisions as detailed herein.

6. Sub-Contractors.

In the event that PROVIDER employs sub-contractors as part of this Agreement, it shall be the PROVIDER's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

- D. The parties do hereby expressly agree that COUNTY, acting at its sole option and through its Risk Manager, may waive any and all requirements contained in this Agreement, such waiver to be in writing only. Such waiver may include or be limited to a reduction in the amount of coverage required above. The extent of waiver shall be determined solely by COUNTY's Risk Manager taking into account the nature of the work and other factors relevant to COUNTY's exposure, if any, under this Agreement.

**IX. NO WAIVER BY PAYMENT OR ACCEPTANCE:**

In no event shall the making of any payment or acceptance of any service or product required by this Agreement constitute or be construed as a waiver by COUNTY of any breach of the covenants of this Agreement or a waiver of any default of PROVIDER and the making of any such payment or acceptance of any such service or product by COUNTY while any such default or breach shall exist shall in no way impair or prejudice the right of COUNTY with respect to recovery of damages or other remedy as a result of such breach or default.

**X. NON-DISCRIMINATION:**

PROVIDER shall not discriminate on the basis of age, race, ethnicity, religion, color, gender, disability, marital status, sexual orientation, national origin, cultural differences, ancestry, physical appearance, arrest record or conviction record, military participation or membership in the national guard, state defense force or any other reserve component of the military forces of the United States, or political beliefs against any person, whether a recipient of services (actual or potential)



or an employee or applicant for employment. Such equal opportunity shall include but not be limited to the following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation or level of service(s). PROVIDER agrees to post in conspicuous places, available to all employees, service recipients, and applicants for employment and services, notices setting forth the provisions of this paragraph. The listing of prohibited bases for discrimination shall not be construed to amend in any fashion state or federal law setting forth additional bases, and exceptions shall be permitted only to the extent allowable in state or federal law.

**XI. CIVIL RIGHTS COMPLIANCE:**

- A. If PROVIDER has 20 or more employees and receives \$20,000 in annual contracts with COUNTY, the PROVIDER shall submit to COUNTY a current Civil Rights Compliance Plan (CRC) for Meeting Equal Opportunity Requirements under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title VI and XVI of the Public Service Health Act, the Age Discrimination Act of 1975, the Omnibus Budget Reconciliation Act of 1981, and Americans with Disabilities Act (ADA) of 1990. PROVIDER shall also file an Affirmative Action (AA) Plan with COUNTY in accordance with the requirements of chapter 19 of the Dane County Code of Ordinances. PROVIDER shall submit a copy of its discrimination complaint form with its CRC/AA Plan. The CRC/AA Plan must be submitted prior to the effective date of this Agreement and failure to do so by said date shall constitute grounds for immediate termination of this Agreement by COUNTY. If an approved plan has been received during the previous CALENDAR year, a plan update is acceptable. The plan may cover a two-year period. Providers who have less than twenty employees, but who receive more than \$20,000 from the COUNTY in annual contracts, may be required to submit a CRC Action Plan to correct any problems discovered as the result of a complaint investigation or other Civil Rights Compliance monitoring efforts set forth herein below. If PROVIDER submits a CRC/AA Plan to a Department of Workforce Development Division or to a Department of Health and Family Services Division that covers the services purchased by COUNTY, a verification of acceptance by the State of PROVIDER's Plan is sufficient.
- B. PROVIDER agrees to comply with the COUNTY's civil rights compliance policies and procedures. PROVIDER agrees to comply with civil rights monitoring reviews performed by the COUNTY, including the examination of records and relevant files maintained by the PROVIDER. PROVIDER agrees to furnish all information and reports required by the COUNTY as they relate to affirmative action and non-discrimination. PROVIDER further agrees to cooperate with COUNTY in developing, implementing, and monitoring corrective action plans that result from any reviews.
- C. PROVIDER shall post the Equal Opportunity Policy, the name of PROVIDER's designated Equal Opportunity Coordinator and the discrimination complaint process in conspicuous places available to applicants and clients of services, applicants for employment, and employees. The complaint process will be according to COUNTY's policies and procedures and made available in languages and formats understandable to applicants, clients, and employees. PROVIDER shall supply to COUNTY's Contract Compliance Officer upon request a summary document of all client complaints related to perceived discrimination in service delivery. These documents shall include names of the involved persons, nature of the complaints, and a description of any attempts made to achieve complaint resolution.
- D. PROVIDER shall provide copies of all announcements of new employment opportunities to COUNTY's Contract Compliance Officer when such announcements are issued.
- E. If PROVIDER is a government entity having its own compliance plan, PROVIDER'S plan shall govern PROVIDER's activities.

**XII. COMPLIANCE WITH FAIR LABOR STANDARDS:**

- A. Reporting of Adverse Findings  
During the term of this Agreement, PROVIDER shall report to the County Contract Compliance Officer, within ten (10) days, any allegations to, or findings by the National Labor Relations Board (NLRB) or Wisconsin Employment Relations Commission (WERC)

that PROVIDER has violated a statute or regulation regarding labor standards or relations. If an investigation by the Contract Compliance Officer results in a final determination that the matter adversely affects PROVIDER'S responsibilities under this Agreement, and which recommends termination, suspension or cancellation of this agreement, the County may take such action.

B. Appeal Process

PROVIDER may appeal any adverse finding by the Contract Compliance Officer as set forth in Dane County Ordinances Sec. 25.08(20)(c) through (e).

C. Notice Requirement

PROVIDER shall post the following statement in a prominent place visible to employees: "As a condition of receiving and maintaining a contract with Dane County, this employer shall comply with federal, state and all other applicable laws prohibiting retaliation for union organizing."

**XIII. REQUIRED FEDERAL PROVISIONS**

The provisions in this section and Schedule C are included as required by federal law:

- A. General Civil Rights Provisions. In all its activities within the scope of its airport program, the Provider agrees to comply with pertinent statutes, Executive Orders, and such rules as identified in Title VI List of Pertinent Nondiscrimination Acts and Authorities to ensure that no person shall, on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

The above binds the Provider and subcontractors from the bid solicitation period through the completion of the contract.

- B. Compliance with Nondiscrimination Requirements. During the performance of this contract, the Provider, for itself, its assignees, and successors in interest (hereinafter referred to as the "Provider"), agrees as follows:

1. Compliance with Regulations: The Provider (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. Nondiscrimination: The Provider, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Provider will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. Solicitations for Subcontracts, including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding or negotiation made by the Provider for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Provider of the Provider's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.
4. Information and Reports: The Provider will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities

as may be determined by County or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of Provider is in the exclusive possession of another who fails or refuses to furnish the information, the Provider will so certify to County or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a Provider's noncompliance with the non-discrimination provisions of this contract, County will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the Provider under the contract until the Provider complies; and/or

b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The Provider will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Provider will take action with respect to any subcontract or procurement as County or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Provider becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Provider may request County to enter into any litigation to protect the interests of County. In addition, the Provider may request the United States to enter into the litigation to protect the interests of the United States.

C. Provisions of 29 CFR part 201. This Agreement and any contracts and subcontracts entered into under authority of this Agreement shall incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers. Provider has full responsibility to monitor compliance with 29 CFR part 201. Provider must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

D. Requirements of 29 CFR Part 1910. This Agreement and any contracts and subcontracts entered into under authority of this Agreement shall incorporate by reference the requirements of 29 CFR Part 1910, the Occupational Safety and Health Act of 1970, with the same force and effect as if given in full text. Provider and any subcontractors performing work under this Agreement shall provide a work environment that is free from recognized hazards that may cause death or serious physical harm to an employee. Provider shall comply with, and monitor the compliance of its subcontractors with, the Occupational Safety and Health Act of 1970, and shall address any claims or disputes that pertain to such Act directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

**XIV. CONTROLLING LAW AND VENUE:**

It is expressly understood and agreed to by the parties hereto that in the event of any disagreement or controversy between the parties, Wisconsin law shall be controlling. Venue for any legal proceedings shall be in the Dane County Circuit Court.

**XV. FINANCIAL INTEREST PROHIBITED:**

Under s. 946.13, Wis. Stats. COUNTY employees and officials are prohibited from holding a private pecuniary interest, direct or indirect, in any public contract. By executing this Agreement, each party represents that it has no knowledge of a COUNTY employee or official involved in the making or performance of the Agreement that has a private pecuniary interest therein. It is expressly

understood and agreed that any subsequent finding of a violation of s. 946.13, Wis. Stat. may result in this Agreement being voided at the discretion of the COUNTY.

**XVI. LIMITATION OF AGREEMENT:**

This Agreement is intended to be an agreement solely between the parties hereto and for their benefit only. No part of this Agreement shall be construed to add to, supplement, amend, abridge or repeal existing duties, rights, benefits or privileges of any third party or parties, including but not limited to employees of either of the parties.

**XVII. ENTIRE AGREEMENT:**

The entire agreement of the parties is contained herein and this Agreement supersedes any and all oral agreements and negotiations between the parties relating to the subject matter hereof. The parties expressly agree that this Agreement shall not be amended in any fashion except in writing, executed by both parties.

**XVIII. COUNTERPARTS:**

The parties may evidence their agreement to the foregoing upon one or several counterparts of this instrument, which together shall constitute a single instrument.

**XIX. CONSTRUCTION:**

This Agreement shall not be construed against the drafter.

**XX. COPIES VALID:**

This Agreement, and any amendment or addendum relating to it, may be executed and transmitted to any other party by legible facsimile reproduction or by scanned legible electronic PDF copy, and utilized in all respects as, an original, wet-inked manually executed document. Further, this Agreement and any amendment or addendum thereto, may be stored and reproduced by each party electronically, photographically, by photocopy or other similar process, and each party may at its option destroy any original document so reproduced. All parties hereto stipulate that any such legible reproduction shall be admissible in evidence as the original itself in any judicial, arbitration or administrative proceeding whether or not the original is in existence and whether or not such reproduction was made by each party in the regular course of business. This term does not apply to the service of notices under this Agreement.

**XXI. REGISTERED AGENT:**

PROVIDER warrants that it has complied with all necessary requirements to do business in the State of Wisconsin, that the persons executing this Agreement on its behalf are authorized to do so, and, if a corporation, that the name and address of PROVIDER's registered agent is as set forth opposite the heading REGISTERED AGENT on page 1 of this Agreement. PROVIDER shall notify COUNTY immediately, in writing, of any change in its registered agent, his or her address, and PROVIDER's legal status. For a partnership, the term 'registered agent' shall mean a general partner.

**XXII. DEBARMENT:**

By signing this Contract, PROVIDER attests that it is not debarred from participating in federal procurements. COUNTY reserves the right to cancel this Contract if PROVIDER is presently, or is in the future, on the list of parties excluded from federal procurements.

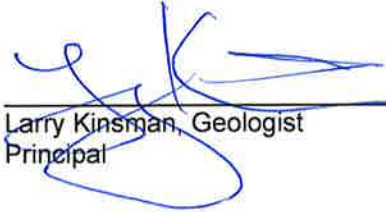
**XXIII. EXECUTION:**

A. The parties agree that execution of this document may be made by electronic signatures. The parties may make electronic signatures by typing the name of the authorized signature followed by the words, "electronically signed" or by any other electronic means representing an authorized signature by PROVIDER. PROVIDER shall ensure that only authorized persons may affix electronic signatures to this Agreement and COUNTY may rely that the electronic signature provided by PROVIDER is authentic.

B. This Agreement has no effect until signed by both parties. The submission of this Agreement to PROVIDER for examination does not constitute an offer. PROVIDER warrants that the persons executing this Agreement on its behalf are authorized to do so.

**IN WITNESS WHEREOF**, COUNTY and PROVIDER, by their respective authorized agents, have caused this Agreement and its Schedules to be executed, effective as of the date by which all parties hereto have affixed their respective signatures, as indicated below.

**FOR PROVIDER:**

  
\_\_\_\_\_  
Larry Kinsman, Geologist  
Principal

11-5-24  
Date

\*\*\*

**FOR COUNTY:**

\_\_\_\_\_  
Melissa Agard  
Dane County Executive

\_\_\_\_\_  
Date

\_\_\_\_\_  
Scott McDonell  
Dane County Clerk

\_\_\_\_\_  
Date

## **SCHEDULE A**

### **Scope of Services**

Provider shall provide services for environmental remediation at the Darwin Training Area located near the Dane County Regional Airport, as described on the Provider proposal attached to this Schedule A.



## DRAFT

Draft Work Plan - Source Area Interim Response  
Measure and Performance Monitoring, Darwin Burn  
Pit (DBP)

Dane County Regional Airport (DCRA)  
Madison, Wisconsin

**Prepared for:**

Dane County Regional Airport (DCRA)

ORIN Technologies, LLC. (ORIN)

A handwritten signature in black ink, appearing to read "Larry Kinsman". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Larry Kinsman, Geologist  
Principal  
ORIN Technologies, LLC



September 19, 2024

Mike Kirchner  
Dane County Regional Airport (DCRA)  
4000 International Lane  
Madison, WI 53704

Cc: Steve Ales  
Wisconsin DNR

**Subject: Draft Work Plan - Source Area Interim Response Measure and Performance Monitoring, Darwin Burn Pit (DBP), BRRTS # 02-13-583366  
Dane County Regional Airport (DCRA), Madison, Wisconsin.**

Dear Mr. Kirchner:

ORIN is pleased to submit this draft work plan to perform a source area interim response measure (IRM) to address perfluoroalkyl substances (PFAS) in the center of the source area at the former Darwin Burn Pit (DBP) at the Dane County Regional Airport (DCRA). This IRM is intended to stabilize PFAS impacts in soil and shallow groundwater below the former DBP to reduce the flux of PFAS in groundwater away from the primary source area.

It is ORIN's understanding that the DBP was used as a firefighting training area (FFTA) between 1953 and 1987. Two former FFTAs exist, one located under the existing parking area and the second, which is the focus of this IRM. The former FFTA under the parking area was located to the north of the DBP and appears to have been in use in the 1950s (Shannon and Wilson, Inc. [SWI], 2023). In 1963, the United States NAVY developed an aqueous film forming foam (AFFF) that contained PFAS. AFFF was developed to quickly smother fires associated with plane/ helicopter crashes in an effort to save lives. PFAS-containing AFFF began to be used more broadly at commercial airports in the late 1970s. The "recipe" or types of PFAS used in AFFF has changed overtime. In the late 1970's and 1980's AFFF typically included perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and/or perfluorohexanesulfonic acid (PFHxS). Based on the timing of AFFF development and use, the DBP discussed in this work plan is the likely source of PFAS detected in site soil and groundwater. Understanding of the nature

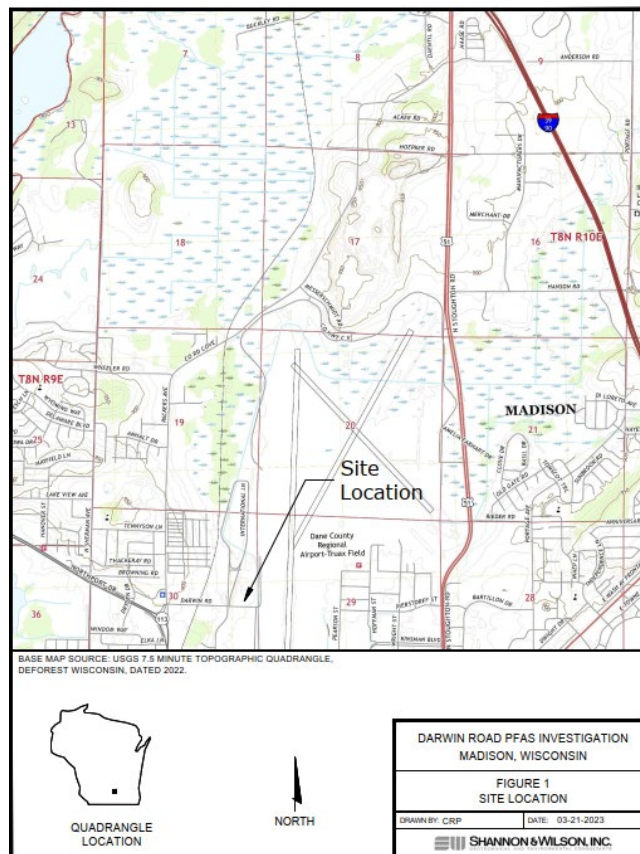


and extent of PFAS impacts in soil and groundwater are based primarily on two previous PFAS remedial investigations:

- Former Firefighting Training Areas Soil and Groundwater Sampling Summary prepared by LimnoTech, dated December 9, 2020 (LimnoTech, 2020)
- Dane County Fire Training Areas - Darwin Road SI, prepared by SWI, dated December 2023 (SWI, 2023)

## Background

The DBP is an approximately 3.5-acre field located off Darwin Road on the west side of the DCRA property (**Figure 1**). It is bordered by an airport parking lot to the north, a commercial building to the west, Darwin Road and vacant land to the south, and the airport runway/taxiway to the east. A ditch connecting to Starkweather Creek is located between the DBP and the airport runway to the east.



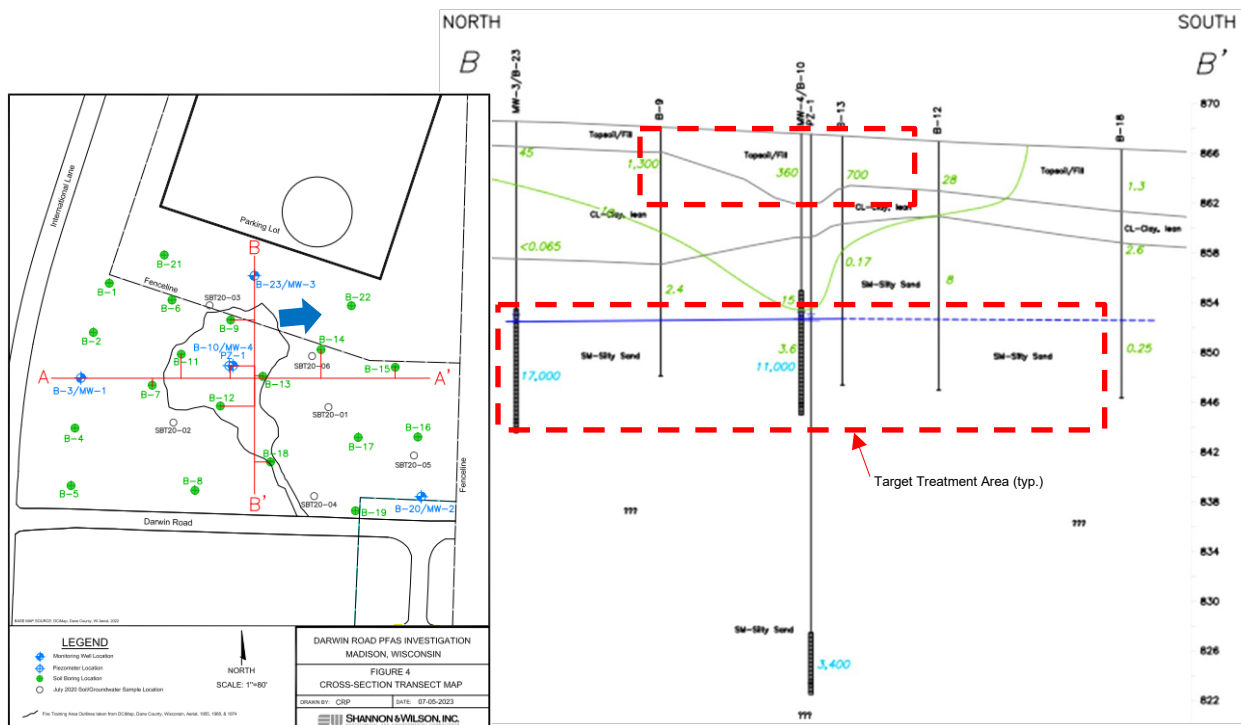
**Figure 1 Site Location Map (SWI, 2023)**

## Hydrogeology

The hydrogeology in the area of the DBP has been characterized by soil descriptions, slug testing and groundwater elevation determinations obtained from the existing monitoring well network (e.g., **Figures 2 and 3**, modified from SWI, 2023). The geologic layering at the site consists primarily of three key layers (**Figure 3**):

- Upper Fill/Topsoil - this unit generally consists of silty sand with varying amounts of organics and has locally been interpreted as fill material (SWI, 2023). It extends from the ground surface to depths of 1 to 7 feet below ground surface (ft bgs).
- Clay - A lean clay has been encountered across the DBP. The clay occurs in the vadose zone and varies in thickness from 2 to 8 feet thick. Thin (typically less than 6-inches thick), sandy lenses or occasional gravel are sometimes reported in the thicker accumulations of the clay.
- Silty Sand - this layer comprises primarily fine-grained sand with some silt. This layer includes gravel as well as discrete silt and clay-rich lenses interbedded with the silty sand (LimnoTech, 2020). This layer has been shown to extend from the vadose zone (i.e., below the clay layer) to depths of more than 45 ft bgs (e.g., PZ-1 location; SWI, 2023).

**Figure 2 Site Features Map** (SWI, 2023; left).  
**Figure 3 North-South Cross Section** (SWI, 2023; right).



Hydraulic results at the DBP include the following:

- Groundwater is generally encountered at an average depth of 12 ft bgs but has been encountered between 10 and 15 ft bgs.
- Groundwater flow below the DBP is generally directed to the east, varying between an east-northeast and east-southeast direction (e.g., **Figure 2**).
- The lateral hydraulic gradient is relatively flat (0.001 to 0.002 feet/day) and may explain some of the variation noted by others in the groundwater flow direction.
- Vertical hydraulic gradients have been shown to be downward directed in the spring (April and May) and upward directed in the summer (August).
- Hydraulic conductivity has been shown to range from  $8.47 \times 10^{-4}$  centimeters per second (cm/s) or 2.4 feet per day (ft/d) at the water table to  $1.9 \times 10^{-4}$  cm/s or 0.54 ft/d at depth (SWI, 2023).
- The groundwater seepage velocity at the DBP was determined to range between 1 to approximately 9 feet per year, assuming an effective porosity of 20%.

## PFAS Contamination

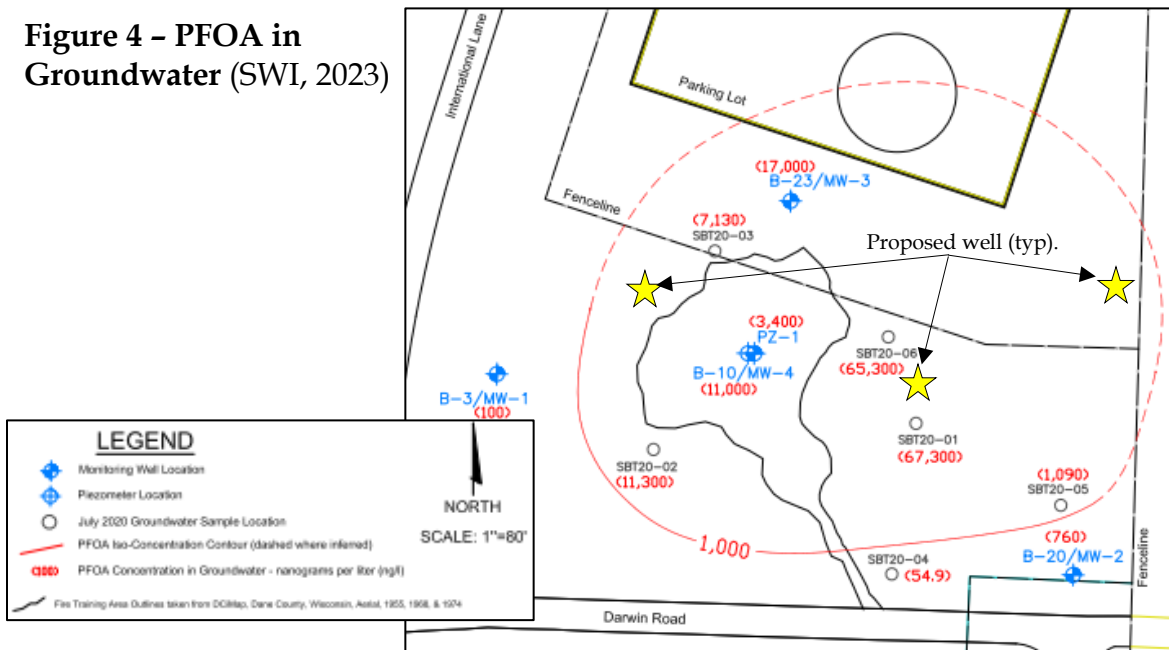
ORIN understands that there are soil and groundwater PFAS impacts that have been previously identified at the DBP site. SWI advanced 23 boring locations and installed four water table monitoring wells (MW-1 through MW-4) and one deep monitoring well (PZ-1) as part of the 2023 PFAS site investigation.

Previous investigations by LimnoTech and SWI detected PFAS in soil and groundwater at levels that exceed one or more Wisconsin Department of Natural Resources (DNR) Residual Contaminant Levels (RCLs). PFOA has been detected in soil at one location at a level that exceeds the non-industrial direct contact RSL of 1,260 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) but were below the industrial direct contact RSL in soil (1,300  $\mu\text{g}/\text{kg}$  in soil boring B-9 at 3 ft bgs; **Figure 3**).

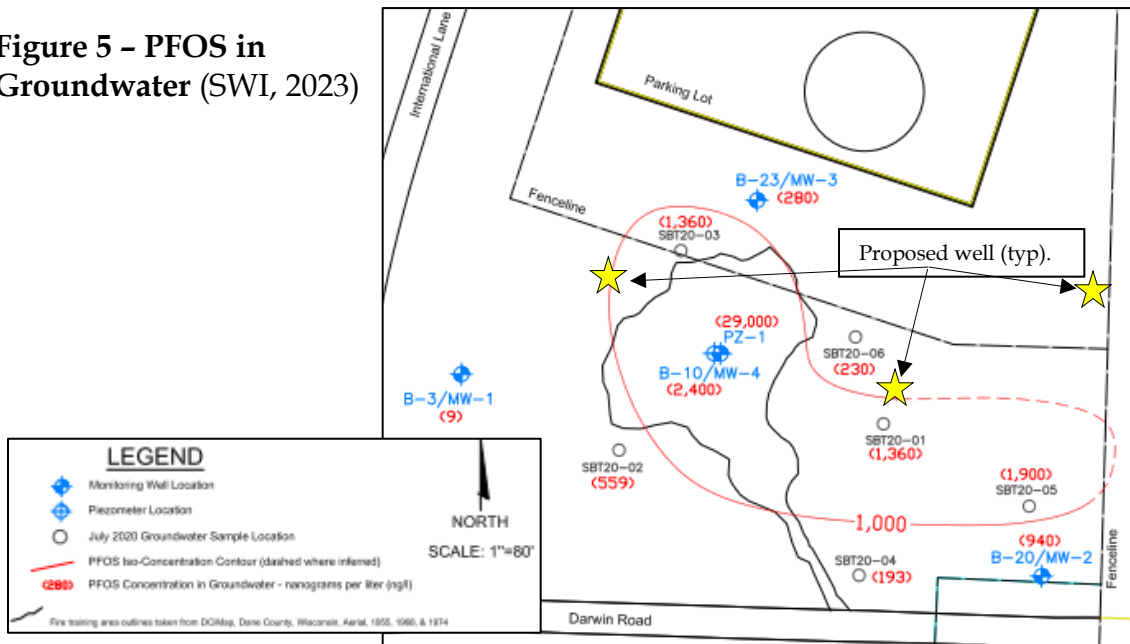
PFOA, PFOS, PFHxS as well as Perfluorononanoic acid (PFNA) have all been detected in one or more groundwater sample collected from the DBP at levels that exceed the recommended Enforcement Standard (ES) published by the Wisconsin Department of Health Services (DHS) and/or the Maximum Contaminant Levels (MCLs) established by the United States Environmental Protection Agency (EPA) in April 2024. Detected concentrations of PFOA and PFOS in groundwater are depicted on **Figures 4 and 5**, respectively. The highest PFOA concentrations have been detected in samples collected from well MW-3 at concentrations 17,000 nanograms per liter (ng/L) in May 2023 and 16,000 ng/L in August 2023 (**Figure 4**). The highest detected PFOS concentrations at the water table (2,400 ng/L in May

2023 and 3,000 ng/L in August 2023) occurred at well MW-4. Higher concentration of PFOS was detected in the deep well PZ-1. Water table well MW-4 and the deeper PZ-1 well are believed to be installed at the center of the old burn pit (Figures 3-5). The extent of PFAS groundwater impacts is not fully delineated to the north and east of the DBP (Figures 4-5). The delineation of the PFAS impacts in groundwater is outside of the scope of this work plan.

**Figure 4 - PFOA in Groundwater (SWI, 2023)**



**Figure 5 - PFOS in Groundwater (SWI, 2023)**





### **Remedial Action Approach**

ORIN proposes an IRM approach to address the primary source of PFAS at the DBP that includes the following:

- 1) Soil blending of Bioavailable Absorbent Media™ (BAM) and organoclay; to stabilize and reduce leaching of elevated levels of PFOA detected at levels above the non-industrial direct contact RSL in Fill (i.e., above the top of clay on the vadose zone); and
- 2) Injection of BAM to retain PFAS in groundwater near the water table below the former DBP. The BAM treatment will be augmented with microbes and electrochemical oxidation to enhance destruction of some PFAS.

As a source area treatment, this IRM is intended to reduce the flux of PFAS in groundwater migrating toward the ditch located to the east of the DBP. Back diffusion of residual PFAS present in the aquifer/adsorbed onto the aquifer matrix, into the treated groundwater will likely occur following the source area treatment. Description of the primary treatment media (BAM) and details related to the implementation of the IRM are presented in the following sections.

#### BAM Treatment Media

BAM is a sustainable, pyrolyzed, recycled cellulosic bio-mass product (>80% fixed carbon) derived from a proprietary blend of recycled organic materials with a high cation exchange. BAM has diverse pore sizes with a minimum total surface area of up to 1,133 square meters per gram.

BAM's absorption ability or sponge-like effect comes from its unique and diverse honeycomb- structure. The shape creates pores or openings within the structure that allows for contaminants and microbes to be drawn in and retained within the pores. This unique ability prevents exterior surface microfilm buildup that allows BAM to continually absorb contaminants.

BAM has numerous synergistic qualities and is relatively affordable in large quantities for remediation purposes. BAM has ample usable surface area for maximizing microbial colonization. Due to its unique 'honeycomb' structure, BAM has the ability to provide increased pore space for the different strains of microbes. BAM's affinity for organic and inorganic compounds supports contact with microbes to promote contaminant degradation.



The unique absorption capability of BAM prevents exterior surface microfilm buildup providing long term remediation capabilities. This allows BAM to absorb contaminants for more productive bio-attenuation of contaminants over a longer period of time. Granular Activated Carbon (GAC) primarily adsorbs contamination to the surface of the media, which then is subject to bio-film development, preventing further adsorption.

As a result, BAM has been proven to supply long term maintenance free remedial abilities over GAC. Laboratory tests have also shown that BAM has a significantly higher absorptive capacity than commercially available GAC products. Advantages include:

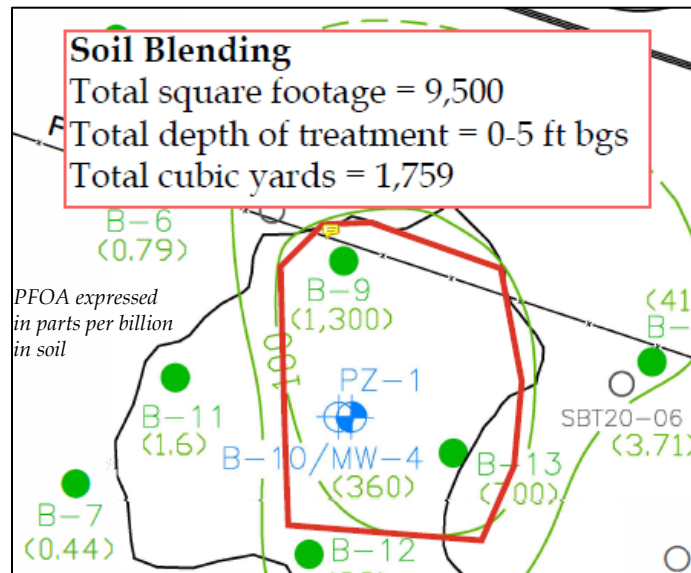
- Rapid absorption of contaminants.
- The unique pores provide extremely high surface area per gram of material creating a high cation exchange capacity.
- Promotes microbial colonization's that biodegrade contaminants.

#### BAM Soil Blending Approach

ORIN and its subcontractors will treat shallow vadose zone soils (i.e., above the clay) by blending BAM-X and a stabilizing organoclay into the impacted soil. ORIN's blending process will blend BAM from 0 to 5-ft bgs (or to the top of clay, see **Figure 3**) until the target depth is reached using mechanical mixing methods. The shallow soil will be treated by a combination of continuously mixing the impacted soil while applying the preferred treatment chemistry in the area depicted on **Figure 6**. Due to the coarse nature of BAM-X, the BAM-X and organoclay mixture is visually observable during application. ORIN will visually inspect the mixing of treatment chemistry into the soil until a homogenous appearance and distribution is achieved across the treatment area. Potable water will be applied during blending to assist the blending process and to hydrate the organoclay. The amount of water required will vary and will be determined based on field observations at the time of mixing. The consistency of the soil is intended to never exceed the saturation limits of the soil and only be used to promote its homogenization.

The combination of BAM and organoclay to treat vadose zone soil is intended to address and treat PFOA detected in soil at levels approaching potential direct contact concerns and to stabilize these areas of elevated PFAS that are detected above the partially confining clay layer in the vadose zone (**Figure 3**). Based on the 2024 treatability test completed by ORIN, the BAM-X dosing rate in the shallow soil will be 2.5% (i.e., weight of BAM to soil [wt/wt]) will be used. This dosing rate produced an 83% reduction in the leaching concentration of PFOA

and a 90% PFOS reduction in the leaching concentration by synthetic precipitation leaching procedure (SPLP). During the benchtop testing organoclay also produced additional PFOA and PFOS reduction, as measured by SPLP and the organoclay dose will be 0.34% wt/wt.



**Figure 6 - Soil Blending Area with Respect to PFOA Detected in Shallow Soil.**

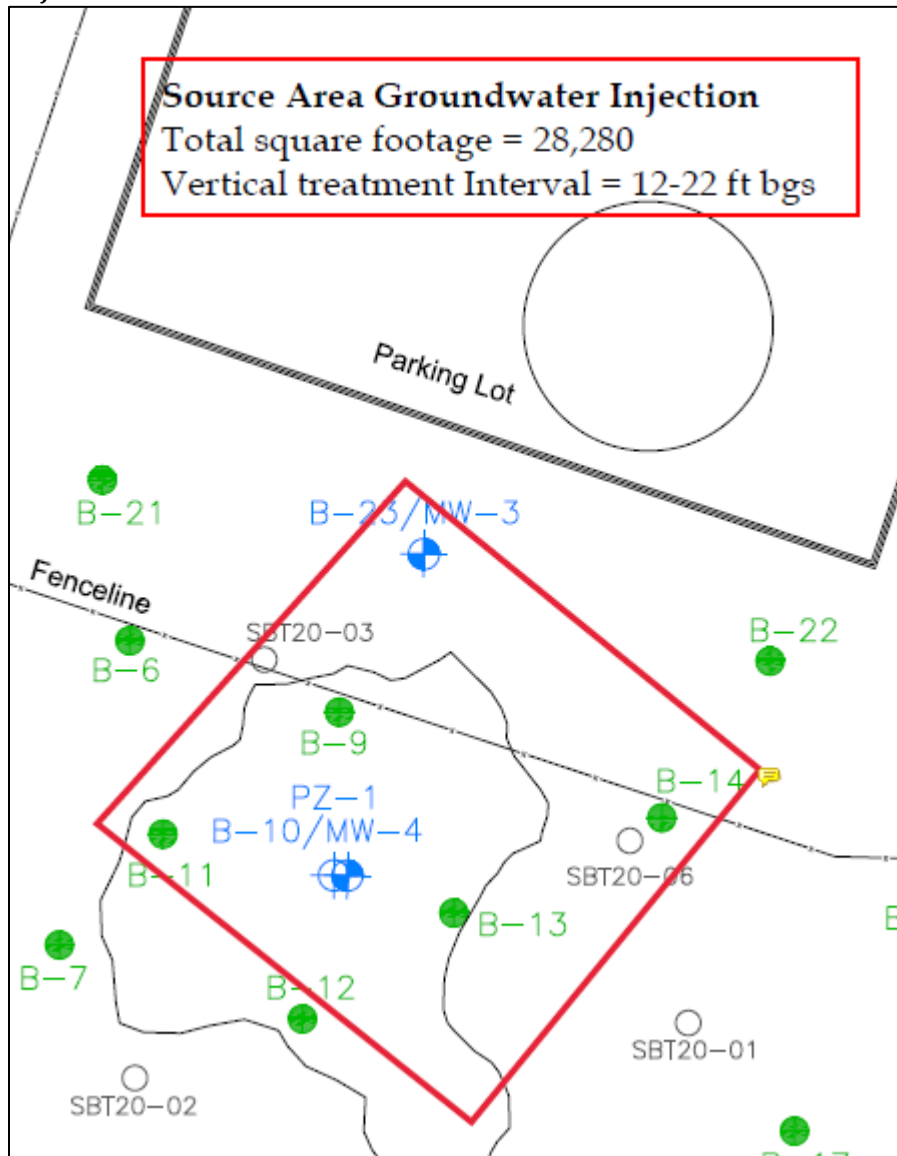
### Injection of BAM to Treat Shallow Groundwater

Groundwater treatment will consist primarily of BAM injected into the shallow portion of the aquifer and capillary fringe using rotonic methods. At sites with similar soils, ORIN has achieved an injection radius of influence of up to 10-feet using the rotonic approach. The injection area is shown on **Figure 7** and details of the injection are summarized as follows:

- The remedial design footprint is approximately 28,280 ft<sup>2</sup>.
- The treatment media will be injected at each location from approximately 12 to 22-ft bgs.
- An average of 7.5 feet radius of influence is conservatively expected. Therefore, injections will be advanced at spacing of approximately 15 feet.
- Approximately 160 DPT injection points will be advanced in this area.
- An average of 200 gallons of 20% BAM Ultra (<30 microns in diameter), PFAS Degrading Bacteria, and 0.5% calcium peroxide treatment chemistry will be injected into each of the 160 injection points.

The borings would be advanced to the appropriate depth using Sonic Technology. The treatment chemistry will be injected into the rods to create minimal positive pressure before commencing injection into the surrounding formation. The rods will then be raised through the vertical treatment zone while simultaneously injecting the treatment chemistry into the formation.

**Figure 7 Injection Treatment Area to Address PFAS in Shallow Groundwater**



The remedial treatment chemistry will be prepared using ORINs specialized treatment and application equipment. The treatment chemistry will be mixed and temporarily staged prior to application, in up to four 200-gallon tanks located inside ORINs enclosed remediation trailer. The tank will first be filled





with the proper amount of water to achieve the appropriate treatment chemistry solution concentration. Multiple tanks will be mixed and used during the application, which enables work to proceed steadily and efficiently. The treatment chemistry will be pumped onto the targeted matrix using ORINs air-driven, chemical and spark resistant pumps. Shut-off valves are present at numerous locations throughout the delivery system for health and safety purposes. To further mitigate accidental spills and/or leaks, ORIN uses a variety of catch basins and sorbent pads/socks. Emergency eye washes are readily available throughout the trailer.

ORIN will use approximately two to three-foot lift intervals throughout the targeted zone and inject the appropriate amount of treatment chemistry into each interval. The proper amount of treatment chemistry will be administered according to the subsurface and known contamination characteristics in each injection area. The total volume and pressure of treatment chemistry injected will be monitored by ORIN and amended according to field conditions to ensure maximum injection effectiveness.

Immediately after the completion of each injection point, the borehole will be backfilled and hydrated using bentonite crumbles or chips to prevent subsequent treatment chemistry short circuiting.

#### Additional Treatment – Microbial Enhancement and Electrooxidation System

As indicated previously, bioaugmentation will be performed as part of the BAM injections. The microbial approach includes direct injection of a concentrated microbial consortium identified previously at the DCRA (i.e., endemic to the area) that have been shown to be both viable on a PFAS-substrate (i.e., where PFAS are the only available carbon substrate) and to produce free fluorine (evidence of PFAS carbon-fluorine bond cleavage). The goal of bioaugmentation is to breakdown PFAS sorbed onto the BAM and by doing so, free up sorption sites on the BAM to extend its lifecycle.

The microbes that were previously isolated from the DCRA soil and groundwater and shown to reduce PFAS concentrations in the laboratory, did so under aerobic conditions. Thus, this remedy will include the injection of a dilute oxidant (calcium peroxide) and installation of an in-situ electrooxidation system that produces dissolved oxygen via hydrolysis. Bioaugmentation is applied within the BAM treatment zone so that if PFAS precursor breakdown occurs



under the produced aerobic conditions, any additional PFOS or PFOA generated that is not rapidly degraded, would then become trapped on the BAM.

#### *PFAS Degrading Bacteria*

The carbon-fluorine (C-F) bond is one of the strongest single covalent bonds known. The presence of numerous C-F bonds in any given PFAS molecule makes these compounds very difficult to degrade. As a result of their resilience, PFAS compounds have commonly become known as “forever chemicals” due to their persistence in the environment. PFAS compounds are generally considered to be resistant to biodegradation due to their chemical stability, although some limited biotransformation of PFAS is known in wastewater systems that typically lead to the formation of PFOS from other fluorinated compounds. ORIN/Fixed Earth Innovations has developed a method to obtain microbes that are capable of degrading PFAS substances in a timely manner that are native to the impacted site. Specific microbes are aerobic, which utilize low levels of oxygen for survival and their metabolic process.

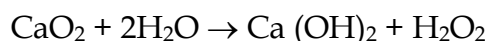
The performance of the PFAS degrading microbes has been previously validated in multiple laboratory studies and in an in-situ field demonstration. The available data from these studies suggests that cleavage of the C-F bond occurs, resulting in complete mineralization of PFAS.

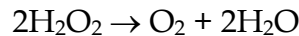
#### *Calcium Peroxide*

Calcium peroxide releases oxygen over an extended time period to enhance the biodegradation of petroleum hydrocarbons and other biodegradable contaminants in soil and groundwater.

It is well documented that the release of oxygen in the subsurface environment enhances the biodegradation of contaminants. Based on extensive laboratory studies, the release of oxygen can provide a useful and cost-effective mechanism for enhancing aerobic bioremediation.

Successful bioremediation of contamination via aerobic microbial respiration depends on a number of factors including the presence of appropriate microbes, nutrients, electron donors and terminal electron acceptors. In the aerobic metabolism of contaminants, oxygen acts as a terminal electron acceptor and contaminants act as electron donors, which are oxidized. Often, the limiting factor in aerobic bioremediation of contaminants is oxygen. Calcium peroxide provides oxygen by reacting with water. The reaction is:





### *Electrooxidation System*

An electrooxidation system utilizes subsurface electrodes to induce electrochemical reactions to enhance the bioremediation and break down of the contaminant compounds in groundwater. The reactions increase the dissolved oxygen content of the groundwater to supplement the oxygen demand of the selected aerobic microbes.

Electrooxidation remediation is an advanced in-situ remediation technology. The approach enhances natural processes and supports complementary remediation methods. This method utilizes electrochemical phenomena to generate chemical radicals on soil particle surfaces and electrokinetic and electro osmotic phenomena to increase availability of organic contaminants for bioremediation, chemical degradation, or mechanical removal. The system utilizes the capacitive nature of the soil matrix. Reactions will occur at the surface of each soil particle and everywhere between the electrodes – not just at the installed electrodes. The effect can be quickly seen in the form of reduced pollutant concentrations in the soil and groundwater as well as stabilized ORP and dissolved oxygen levels.

The electrooxidation system involves installation of electrodes into the subsurface in a grid pattern offset on 14-foot centers. Steel screw pilings are used as electrodes, and they will be advanced to a depth not to exceed 25 ft bgs immediately following injection. Two electrodes are then hooked together to act as one “current” set. The electrode array is wired back to a control box using heavy gauge cable and the control box is plugged into a standard outlet for power. A low amperage direct current is then applied to the electrode pairs with frequent polarity shifts that prevent precipitation build up. A technician can interface with the system to observe the electrical response of the soil and optimize the pulsing (voltages, timing, etc.) to maximize oxygen production in situ.

An electrooxidation system will generate oxygen through low voltage currents that are transferred between conductive rods within the treatment area. The oxygen will be used by PFAS degrading bacteria in their metabolic process.

### Site Restoration and Erosion Control

ORIN will implement erosion controls during the soil blending portion of the work by installing a silt fence on the tarmac side of the work area. In addition to the silt fence, ORIN will have a temporary fence installed in the work area that



overlaps the existing fence. Any permits required for the installation of silt fencing will be the responsibility of the DCRA. Once the work has been completed, ORIN will restore the work area by adding shredded topsoil and reseeded the area as necessary.

#### Decontamination and Waste Management

Prior to mobilization from the shop, all of ORIN's equipment including pumps, tanks, hoses, application heads and rig will be properly decontaminated using specialized chemical treatments and procedures.

All waste will be properly disposed of according to standard regulatory protocol. ORIN will properly dispose of all empty chemical containers and spent personal protective equipment (PPE). Any soil or groundwater waste material generated will be properly disposed of by DCRA.

#### **Performance Monitoring**

The treatment approach consists of treatment to stabilize PFAS in vadose zone soil and the treatment of shallow groundwater. ORIN will assess both soil and groundwater for a period of one year to assess the performance of the remedy.

#### Soil Performance Monitoring

Following the completion of soil blending ORIN, or ORIN's subcontractor, will collect confirmation soil samples to assess the ability of the treatment to address PFAS levels and leachability. Confirmation soil samples will be collected by ORIN during two sampling events - 30 days post mixing and 1-year post mixing. Each confirmation event will consist of two hand auger borings advanced to the top of clay. ORIN will collect soil samples from each boring from the upper foot of treated soil overlying the clay for analysis of PFAS by modified method 537 and SPLP. The two distinct sampling events are intended to provide an understanding of the performance of the treatment approach overtime.

#### Groundwater Performance Monitoring

As shown on Figure 2 there are four monitoring wells (MW-1 through MW-4) installed in or near the former DBP in the shallow portion of the water table. The source area remedy is focused on the treatment of shallow groundwater. Well PZ-1 is a deep well that is installed within deeper portions of the unconfined aquifer.

To support IRM implementation and performance monitoring, ORIN and its subcontractors propose to install three additional water table monitoring wells at the site (**Figures 4 and 5**). One monitoring well will be installed adjacent to the



groundwater treatment area and will be used both to assess the radius of influence during injections as well as to understand the fate of PFAS following treatment. The other monitoring wells will be installed to the east of the treatment area to better constrain the groundwater flow direction and the downgradient extent of PFAS-related impacts. Monitoring wells will be installed with a 10-foot long well screen to ensure that the wells PFAS levels in groundwater in the existing and the expanded monitoring well network will be monitored over time, to assess the effectiveness of the IRM on groundwater quality and to assess for potential back diffusion of PFAS from the formation following treatment. Based on previously calculated groundwater flow velocities, the effect of the aquifer treatment may not significantly influence PFAS levels in downgradient receptors during the performance monitoring time period. Ongoing monitoring will provide a framework for assessing whether additional treatment to address potential downgradient receptors may be advisable.

Groundwater performance monitoring will include gauging of existing wells to assess vertical and lateral hydraulic gradients/flow and the collection of groundwater samples using low-flow methods. Low flow sampling techniques will include the use of dedicated high-density polyethylene (HDPE) tubing, and an inline water quality meter connected to a peristaltic pump. The pump will be operated at a flow rate of 100 to 500 milliliters per minute and low flow water quality parameters as well as the depth to water (i.e., drawdown) will be monitored at 3- to 5-minute intervals until the water quality parameters stabilize over three successive monitoring intervals.

PFAS levels in groundwater will be assessed on high and low frequency time frames:

- High frequency sampling will be performed within treatment zone wells (MW-3, MW-4 and one of the proposed, new monitoring wells) and the upgradient well (MW-1) over time to assess changes in PFAS levels resulting both from the applied treatment and potential natural flushing of PFAS generally in the source (e.g., MW-1). In order to capture subtle changes in PFAS concentrations that may result due to microbial degradation, groundwater samples will be collected for PFAS (Modified Method 537). At these locations PFAS levels in groundwater will be assessed prior to initiation of treatment (but within one month of the start of treatment) and approximately 1-week, 2-weeks, 30 days, 3-months, 6-months and 1-year post injection.
- Assessment of PFAS on a semi-annual basis (including pre-treatment baseline sampling) at wells MW-1, MW-2, PZ-1 and the proposed,



easternmost monitoring well. Due to the relatively slow groundwater velocity at the DBP, it is unlikely that the effect of PFAS immobilization in the treatment area will be realized in downgradient wells within the first year of treatment.

In addition to PFAS sampling, ORIN will:

- Collect low flow water quality stabilization parameters (i.e., pH, dissolved oxygen, oxidation reduction potential [ORP], etc.) obtained during purging and prior to sample collection at each well included in the performance monitoring event.
- Collect additional groundwater samples for fluorine analysis (Method 9214) from monitoring wells MW-1, MW-3 and MW-4 prior to injection and at 2-weeks, 1-, 3-, 6- and 12-months post injection. Fluorine is an expected byproduct of PFAS mineralization. However, it has been ORIN's experience that due to fluorine's reactivity in the subsurface and the relatively elevated method detection limits (relative to PFAS concentrations), fluorine analyses may not be sufficient to prove or disprove that PFAS degradation is occurring.
- Collect additional groundwater sample for microbial analysis (qPCR at the genus level) from monitoring wells MW-1, MW-3 and MW-4 prior to injection, 2-weeks post injection and 3-months post injection to directly assess microbial diversity and bacterial counts in the treated and untreated areas. This will include comparison to the microbial consortium injected with the BAM.

### Cost Estimates

Soil Blending	\$262,741
Sonic Injection	\$877,407
Electrode Installation	\$209,852

*Costs for site restoration & performance monitoring are not included in the above price estimates.*

Missing additional well install, sample collection, site restoration, consultant oversight/report writing. Silt fencing is not included, vendor has not responded to request. Estimate could be \$150,000.

**Total Estimates \$1,500,000**



## Assumptions

- Information supplied to ORIN is accurate and representative regarding the site contaminants and concentrations, area, and volume of materials to treat, and the geology of the site.
- DCRA is responsible for providing water used for remedial activities described within this proposal. The water will be available from onsite fire hydrants or another source capable of providing 15 gpm designated and provided by DCRA.
- Treatment chemical, injection equipment, blending equipment, electrooxidation equipment, subcontractors, and ORIN personnel are included in the cost estimates.
- Performance monitoring costs are not included in the cost estimates. Additional monitoring well installation & development is not included in the cost estimates.
- ORIN will prepare and implement a site-specific health and safety plan upon award of this project. Preparation costs are included.
- ORIN will maintain site cleanliness by properly disposing refuse, including used PPE.
- DCRA is responsible for providing a power source for the electrooxidation system.
- DCRA is responsible for marking all public and private utility lines in or near the area of concern.
- DCRA is responsible for traffic control, if necessary.
- ORIN will not be responsible for any treatment chemistry infiltration into nearby utility trenches, sewer systems, basements, catch basins, etc.
- The site is accessible to ORIN and ORIN's subcontractor's equipment.

## Health and Safety

To ORIN, health and safety is not just a priority, it's a value. By being proactive instead of reactive, ORIN has learned to identify and listen to health and safety triggers, such as fatigue, emotion and rushing. ORIN reports near misses and lessons learned to help facilitate open discussions with clients and vendors alike about health and safety on our projects.



ORIN is ISN certified. ISN is a certification that ensures all members are up to date and compliant with safety standards and training in some of the most safety conscious industries. We pursued ISN certification to show our commitment to health and safety, and to ensure we meet even the most stringent requirements for companies we work with.

ORIN subscribes to Occupational Safety and Health Administration (OSHA)- and United States Environmental Protection Agency (USEPA)-mandated Health and Safety standards for protection of hazardous waste workers. Because of the wide range of potential exposure for our employees, ORIN must make conservative judgments as to potential health risks. The services outlined in this proposal are offered on the basis of providing Level D health and safety protection (Tyvek<sup>®</sup>, steel-toed boots, hard hats, nitrile gloves, hearing protection, eye protection, and air-purifying respirators). ORIN personnel will abide by the applicable OSHA guidelines for personal safety outlined in 29 CFR 1910.

Prior to daily commencement of injection activities, ORIN will conduct health and safety tailgate meetings with all applicable onsite personnel. The meetings will include but will not be limited to discussion of the work planned for the day and any potential hazards, changes in work assignment, any problems encountered during past operations, and any other pertinent health and safety issues.



## **SCHEDULE B**

### **Pricing Structure and Payment**

**Invoices/Payment:**

PROVIDER shall issue an invoice upon completion of services and/or delivery of such deliverables. Invoices must reference the Dane County purchase order number issued for the services/deliverables described herein. Email delivery of invoices is encouraged and preferred – see the Bill To section of the purchase order. Payment shall be made within 30 days of COUNTY’s receipt of accepted invoice unless otherwise noted in Schedule B.

**Darwin Training Area Environmental Remediation**

	<b><u>Estimates</u></b>
<b>Soil Blending</b>	<b>\$262,741.00</b>
<b>Sonic Injection</b>	<b>\$877,407.00</b>
<b>Electrode Installation</b>	<b>\$209,852.00</b>
<b>Silt Fencing</b>	<b>\$150,000.00</b>
<b>Estimated Project Costs – Not to exceed</b>	<b>\$1,500,000.00</b>

These estimated project costs are based on the assumptions stated in Schedule A. Some work not priced out as stated in Schedule A.

# SCHEDULE C

## Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the Provider, for itself, its assignees, and successors in interest (hereinafter referred to as the "Provider") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-Assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27 (Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance);
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-259) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990 (42 USC § 12101, *et seq.*) (prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations);
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs [70 Fed. Reg. 74087 (2005)];
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC § 1681, *et seq.*)