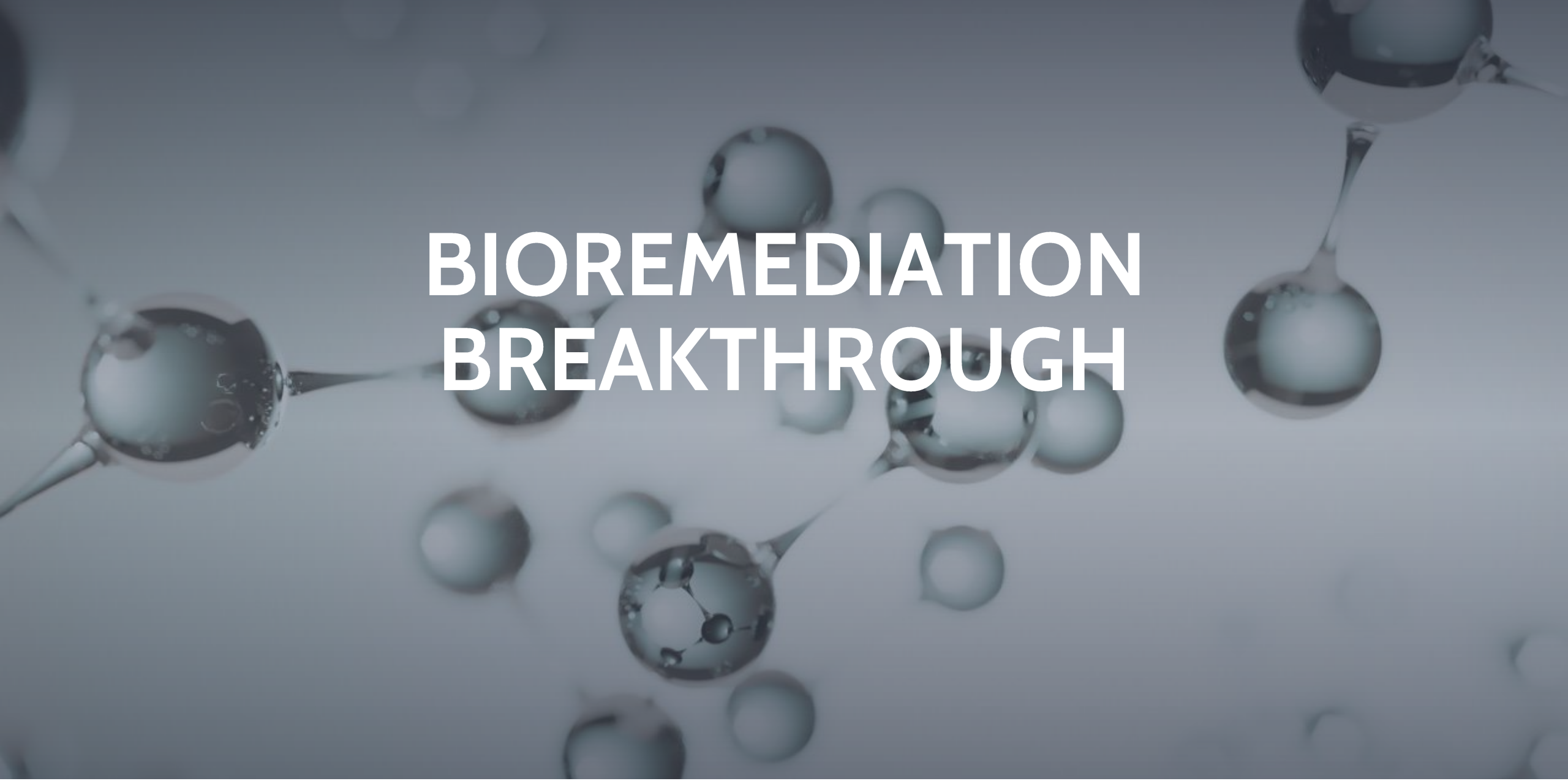

ORIN
TECHNOLOGIES

BIOREMEDIATION BREAKTHROUGH



FIXED EARTH

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BAM

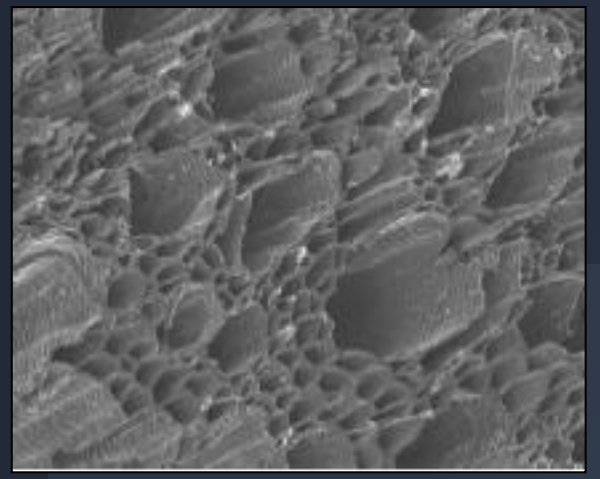
BIOAVAILABLE ABSORBENT MEDIA
PATENDED and TRADEMARKED

- Pyrolyzed recycled cellulosic biomass
- Unique honeycomb pore structure
- High cation exchange capacity
  - Surface area – 1,125 sq meters / gram
- Absorbs within structure
  - Contaminant sponge
- Promotes biological colonization

BAM

BIOAVAILABLE ABSORBENT MEDIA

- Particle size ranges based on milling procedure
- Vapor Migration & Odor Control
- Immediate clean up of soil
  - Through absorption
- Effective on wide range of contaminants
  - PFAS
  - Hydrocarbons
  - Chlorinated solvents
  - 1,4 – Dioxane
  - PCBs
  - Some heavy metals

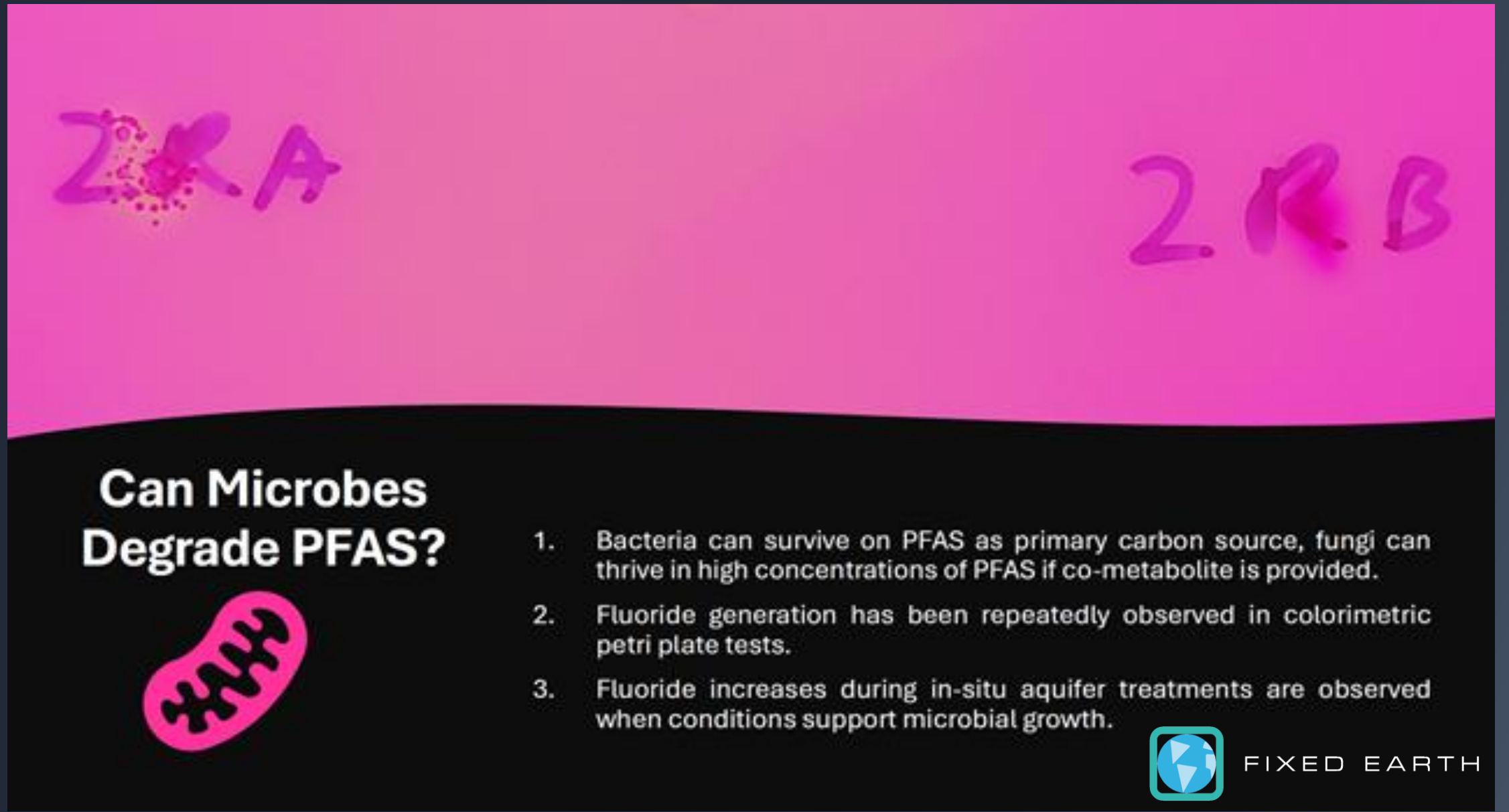


Scanning electron microscope (ESEM) image of BAM micro-pore structures.

Milled BAM Ultra

Coarse BAM X

PFAS AND BIOLOGY: AN IMPOSSIBLE PAIR?

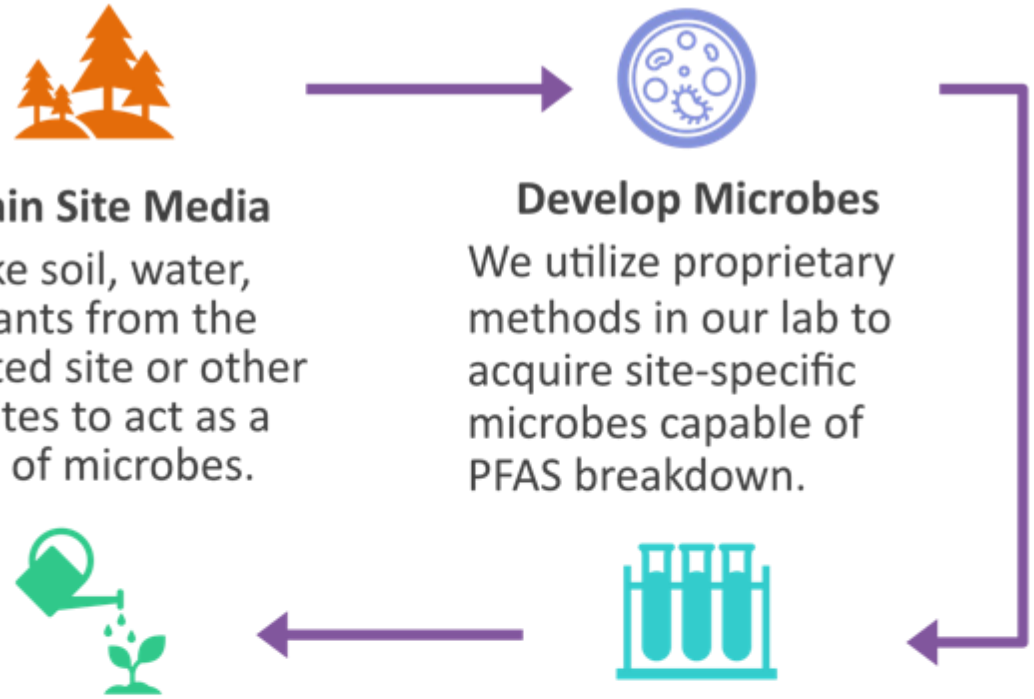


SITE-SPECIFIC MICROBE DEVELOPMENT PROCESS

SITE-SPECIFIC MICROBE DEVELOPMENT

- Microbes can degrade a variety of PFAS compounds
- Site-specific microbes are adapted to local conditions.
- Non-Genetically Modified
- Unlikely to be invasive or disturb local ecosystems.
- Aerobic metabolism is generally faster than anaerobic.

FIXED EARTH



Obtain Site Media

We take soil, water, and plants from the impacted site or other local sites to act as a source of microbes.

Develop Microbes

We utilize proprietary methods in our lab to acquire site-specific microbes capable of PFAS breakdown.

Lab Validation

Before microbes are taken to market, they are tested in the lab using PFAS spiked water or site media, if available.

Deployment of Product

Our business model allows both the sale of microbe products as well as field services to apply them.

1 – 3 Months to Complete

Darwin Road Burn Pit

WORK COMPLETED AT DARWIN BURN PIT SITE

Soil Blend

- 1,759 yd^3
- Treatment from 0 to 5 ft-bgs
- Mixing in 2.5% BAM-X and 0.34% organoclay by weight

In-Situ Injection

- 28,280 ft^2
- 153 points
- Treatment from 12 to 22 ft-bgs
- ~200 gallons of 20% BAM Ultra, PFAS Degrading Bacteria, and 0.5% calcium peroxide treatment chemistry

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Darwin Road Burn Pit – Soil Treatment

DARWIN BURN PIT SOIL MIXING DATA

		30 day post mixing (1312/1633)				3 month post mixing (1312/1633)					
Analyte (ng/L)	Control	Sample 1	Percent Change	Sample 2	Percent Change	Sample 3	Percent Change	Sample 4	Percent Change	Sample 5	Percent Change
6:2 FTS	2,800.0		100.0%		100.0%		100.0%		100.0%		100.0%
PFBS	680.0	4.7	99.3%	13	98.1%	4.8	99.3%		100.0%		100.0%
PFHpS	51.0		100.0%		100.0%		100.0%		100.0%		100.0%
PFPeS	710.0	2.7	99.6%	6.3	99.1%		100.0%		100.0%		100.0%
PFHxS	25,000.0	64	99.7%	110	99.6%	260	99.0%	26	99.9%	45	99.8%
PFBA	330.0	150	54.5%	120	63.6%	22	93.3%	18	94.5%	28	91.5%
PFHpA	2,100.0	6.6	99.7%	20	99.0%	11	99.5%	28	98.7%	8.1	99.6%
PFHxA	3,500.0	31	99.1%	170	95.1%	51	98.5%		100.0%	41	98.8%
PFOSA				3.4						3.8	
PFOA	16,000.0	67	99.6%	200	98.8%	22	99.9%	35	99.8%	70	99.6%
PFNA						5					
PFPeA	1,900.0	33	98.3%	140	92.6%	28	98.5%	25	98.7%	48	97.5%
PFOS	1,100.0	25	97.7%	18	98.4%	99	91.0%	22	98.0%	62	94.4%
TOTAL	54,171.0	384	99.3%	800.7	98.5%	502.8	99.1%	154	99.7%	305.9	99.4%

Soil Mixing Results

- ORIN took the approach from the bench study and applied to the site.
- Confirmation samples collected and analyzed for SPLP after soil mixing showed 98.5% or greater reduction compared to the control sample.

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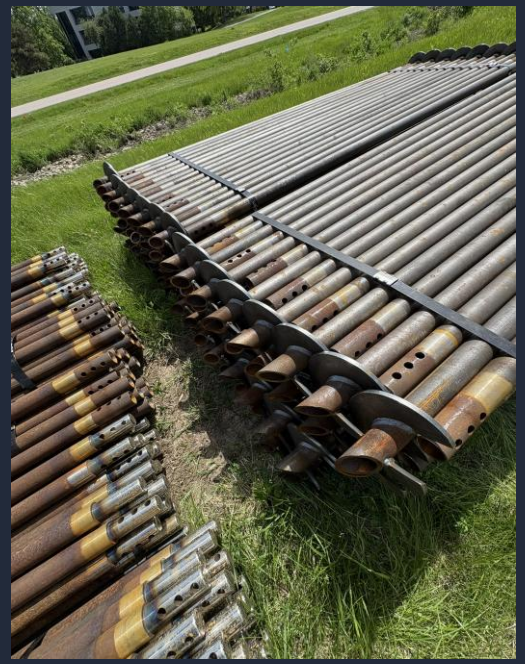
Darwin Road Burn Pit



WORK COMPLETED AT DARWIN BURN PIT SITE

Electrolysis Grid

- 136 screw pilings installed onsite in a grid pattern
- Screw pilings were advanced to 20 ft-bgs
- Electrooxidation box was turned on June 17th
- Electrooxidation system generates oxygen through low voltage currents conducted through the screw pilings

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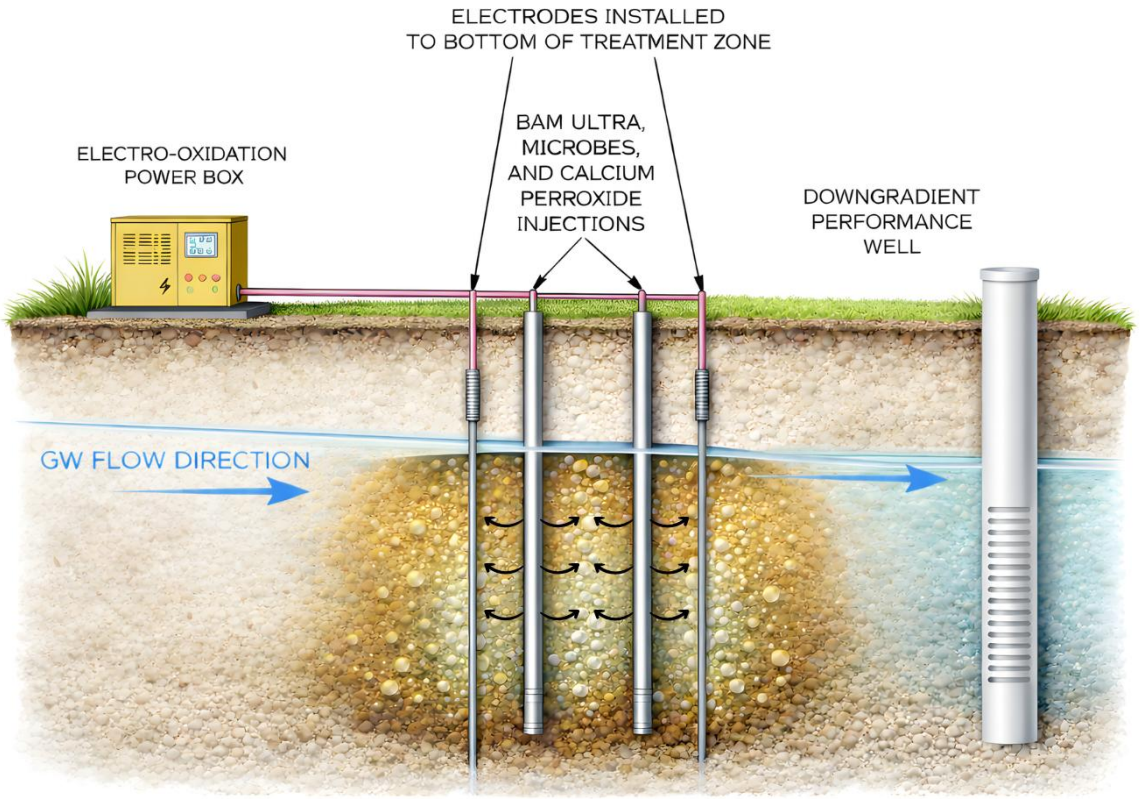
Darwin Road Burn Pit

Conceptual Site Model – Cross Section



WORK COMPLETED AT DARWIN BURN PIT SITE

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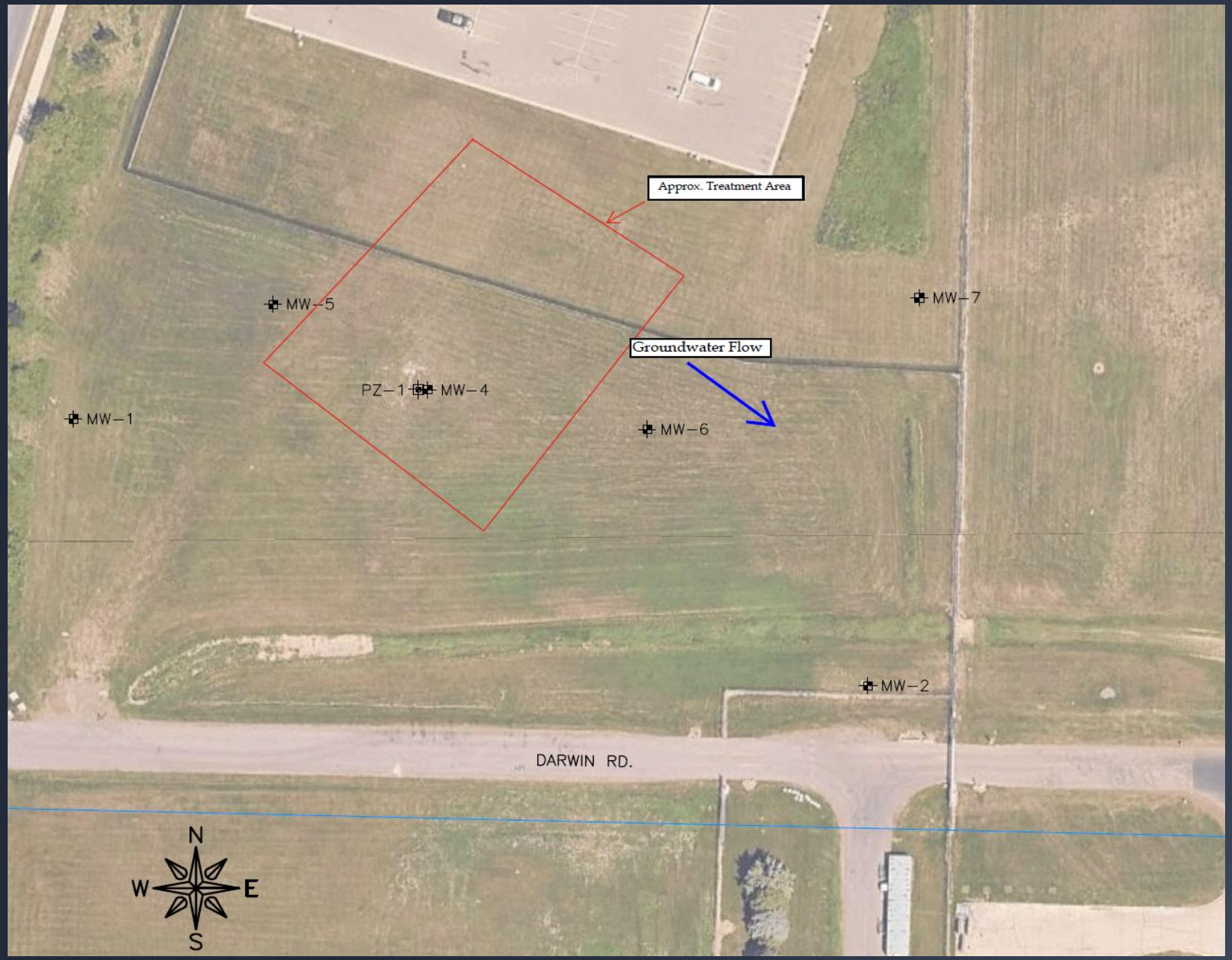
Darwin Road Burn Pit Site Layout



Darwin Burn Pit Groundwater Data

Upgradient Non-Treated Well

DARWIN BURN PIT DATA ANALYSIS

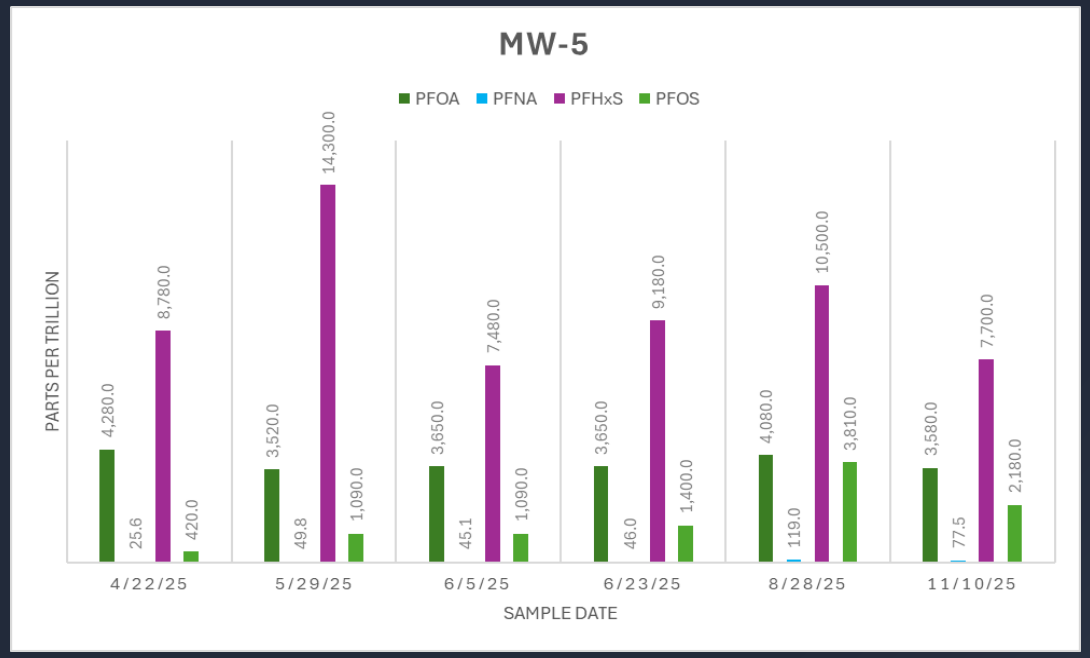
MW-5													
Analyte (ng/L)	Preventative Action Limit (ng/L)	Enforcement Standard (ng/L)	4/22/25	5/29/25	Percent Change	6/5/25	Percent Change	6/23/25	Percent Change	8/28/25	Percent Change	11/10/25	Percent Change
PFOA	2	20	4,280.0	3,520.0	17.76%	3,650.0	14.72%	3,650.0	14.72%	4,080.0	4.67%	3,580.0	16.36%
PFNA	3	30	25.6	49.8	-94.53%	45.1	-76.17%	46.0	-79.69%	119.0	-364.84%	77.5	-202.73%
PFHxS	4	40	8,780.0	14,300.0	-62.87%	7,480.0	14.81%	9,180.0	-4.56%	10,500.0	-19.59%	7,700.0	12.30%
PFOS	2	20	420.0	1,090.0	-159.52%	1,090.0	-159.52%	1,400.0	-233.33%	3,810.0	-807.14%	2,180.0	-419.05%

Note: Zero value indicates analyte below laboratory detection limit

Indicates exceedance of ES and PAL

Indicates meeting ES and PAL

Indicates meeting ES but not PAL



MW-5

- Upgradient and outside of treatment area
- Data shows little to no effect on contaminant concentrations as untreated groundwater migrates across site

Darwin Burn Pit Data Groundwater

Center of Treatment Area

MW-4													
Analyte (ng/L)	Preventative Action Limit (ng/L)	Enforcement Standard (ng/L)	4/22/25	5/29/25	Percent Change	6/5/25	Percent Change	6/23/25	Percent Change	8/28/25	Percent Change	11/10/25	Percent Change
PFOA	2	20	17,000.0	17,400.0	-2.35%	19,600.0	-15.29%	20,100.0	-18.24%	3.8	99.98%	2.7	99.98%
PFNA	3	30	428.0	373.0	12.85%	458.0	-7.01%	509.0	-18.93%	0.0	100.00%	0.0	100.00%
PFHxS	4	40	63,900.0	71,600.0	-12.05%	66,100.0	-3.44%	91,500.0	-43.19%	7.4	99.99%	5.0	99.99%
PFOS	2	20	3,740.0	1,860.0	50.27%	2,570.0	31.28%	2,870.0	23.26%	3.6	99.90%	3.1	99.92%

Note: Zero value indicates analyte below laboratory detection limit

Indicates exceedance of ES and PAL

Indicates meeting ES and PAL

Indicates meeting ES but not PAL

MW-4

- Center of treatment area
- Influenced by treatment chemistry during injection
- Only well in soil mix area and screened within treatment interval
- Large decrease in contaminants in 3-month sampling event and sustained at 6-month event

Darwin Burn Pit Data Groundwater

Downgradient of Treatment Area

DARWIN BURN PIT DATA ANALYSIS

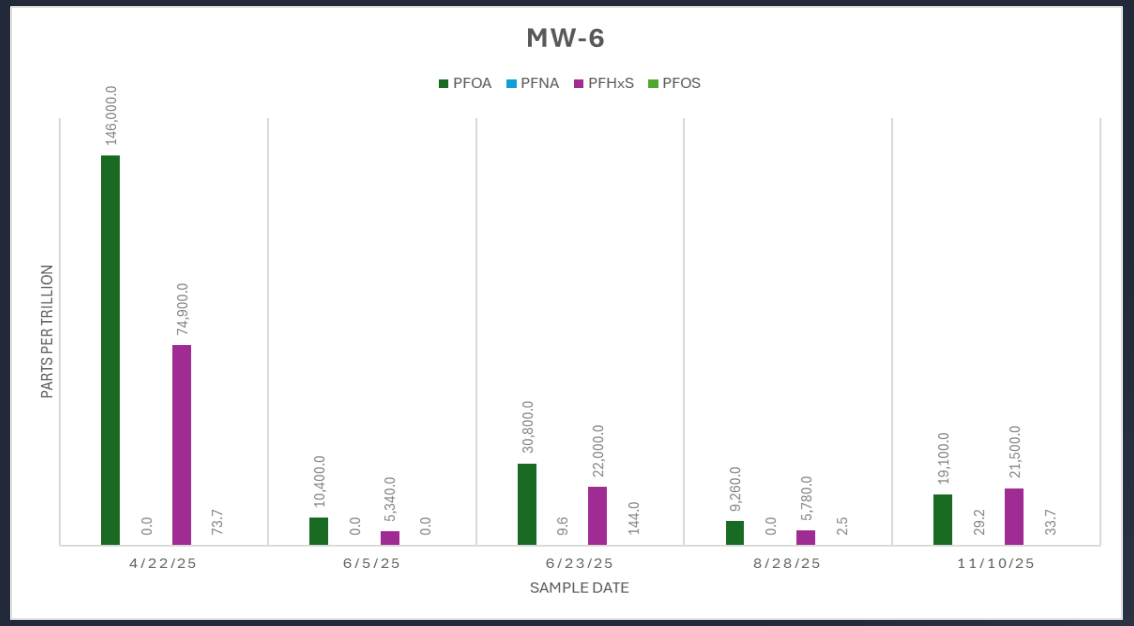
MW-6											
Analyte (ng/L)	Preventative Action Limit (ng/L)	Enforcement Standard (ng/L)	4/22/25	6/5/25	Percent Change	6/23/25	Percent Change	8/28/25	Percent Change	11/10/25	Percent Change
PFOA	2	20	146,000.0	10,400.0	92.88%	30,800.0	78.90%	9,260.0	93.66%	19,100.0	86.92%
PFNA	3	30	0.0	0.0		9.6		0.0		29.2	
PFHxS	4	40	74,900.0	5,340.0	92.87%	22,000.0	70.63%	5,780.0	92.28%	21,500.0	71.30%
PFOS	2	20	73.7	0.0	100.00%	144.0	-95.39%	2.5	96.61%	33.7	54.27%

Note: Zero value indicates analyte below laboratory detection limit

Indicates exceedance of ES and PAL

Indicates meeting ES and PAL

Indicates meeting ES but not PAL



MW-6

- Downgradient and outside of treatment area
- Influenced by treatment chemistry during injection
- Changes in PFAS compounds are consistent with past studies showing bacteria breaking longer chain PFAS

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