

TRIP REPORT

***Treoil Industries Biorefinery
Ferndale, Whatcom County, Washington
Contract No.: 68HE0720D0005
Task Order No.: 68HE0722F0042***



Prepared for:

U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, WA 98101

Prepared by:

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March 2022

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1 SITE DETAILS

Table 1-1 Site Information

Site Name:	Treoil Industries Biorefinery
Location:	4242 Alder Grove Road, Ferndale, Whatcom County, Washington
SSID	10PZ
EPA ID	WAH000050091
Latitude, Longitude:	48.8789186° North, 122.710728° West
Date(s) of Trip:	2/17/2022

Notes:

EPA = U.S. Environmental Protection Agency

ID = Identification Number

SSID = Site/Spill Identification Code

2 PURPOSE

The U.S. Environmental Protection Agency (EPA) performed a site walk at the Treoil Industries Biorefinery site (Site) in Ferndale, Whatcom County, Washington. EPA activated Weston Solutions, Inc. (WESTON®), under Superfund Technical Assessment and Response Team (START) Contract No. 68HE0720D0005 and Task Order (TO) No. 68HE0722F0042, to participate in the Site walk and to document the current Site conditions and help evaluate whether further action is warranted. The Site walk was conducted on February 17, 2022.

The purpose of the Treoil Industries Biorefinery Site walk was to:

- Survey post-removal Site conditions from 2017 activities.
- Assess known areas of concern (AOCs) at the Site including aboveground storage tanks (AST) T-20, T-1, T-2, and T-3, T-20, secondary containment areas in the tank farm, and stained soil areas around the Site.
- Identify any new AOCs.
- Document observations of recent Site activities.

This Trip Report includes photographic documentation in Attachment A.

3 PARTICIPATING ORGANIZATIONS

Table 3-1 Participating Organizations

Agency/Company	Contact Person	Role
EPA	Brooks Stanfield	Federal On-Scene Coordinator
	Jenna Manheimer	Federal On-Scene Coordinator
START	Lisa Graves	Field Team Lead
	David Burford	Field Team Member
	Alex Grubb	Field Team Member
ERRS	Bryan Chernick	Removal Manager
	Theresa Holz	Field Team Member

Notes:

ERRS = Emergency and Rapid Response Services

4 BACKGROUND

The Treoil Industries Biorefinery Site has been the focus of numerous environmental inspections and compliance concerns since the late 1980s. The Site has been issued multiple Notices of Violation over the years for hazardous substance releases to the environment. The Washington State Department of Ecology (Ecology) issued a Notice of Violation to facility operators for “the discharge of spilled material to a drainage ditch that eventually leads to the Strait of Georgia.” This spill of 1,000 gallons of tall oil occurred in October of 1991. In Ecology's Notice of Violation, it was noted this was the second instance in which this facility had spilled oil but failed to report the spill to the State, as required by state law. EPA support was requested from Ecology to assist after the property owner failed to comply with an Order for State Dangerous Waste regulations issued to the Site in 2015.

In February 2017, EPA met with Ecology and the Whatcom County Health Department to evaluate the potential threats of an oil discharge to Waters of the United States (WOTUS), as well as any

potential releases of hazardous substances to the environment from the storage or abandonment of constituents of concern. Based on conditions Ecology observed and documented during a 2017 Site visit, EPA activated START and Emergency and Rapid Response Services (ERRS) contractors to conduct an emergency Removal Site Evaluation (RSE), an Emergency Response action carried out under Oil Pollution Act (OPA) authority, and a Time-Critical Removal Action (TCRA) carried out under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority at the Site.

OPA Emergency Response and CERCLA TCRA activities are documented in the Final Trip Report (Ecology and Environment, Inc. [E&E], 2017a). Two mobilizations occurred as part of EPA's response actions; these were subsequently designated as Phase I and Phase II. Phase I occurred from March 13 – April 7, 2017, and focused on oil and hazardous substance assessment and removal. Phase II occurred from July 23 – August 3, 2017, and focused on removal of remaining oil from ASTs.

During response activities, EPA worked closely with Ecology, the Whatcom County Health Department, and Lummi Nation representatives to ensure materials were removed safely and in accordance with applicable regulations and cultural considerations.

Following the cleanup of oil and hazardous substances, EPA outlined recommendations for future Site characterization through a Proposed Sampling Approach Memorandum (E&E, 2017b). Suggested analyses for all soil samples included semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals, and diesel and heavy oil total petroleum hydrocarbons (TPH).

5 HEALTH AND SAFETY

Site-specific safety plans were completed for Site walk activities, and a morning safety meeting was conducted before entering the Site. During the Site walk, START continually conducted air and radiation monitoring.

6 FIELD ACTIVITY

EPA, START, and ERRS participated in a Site walk on February 17, 2022.

Observations made during the Site walk are categorized below:

- Current Site conditions
- Past AOCs
- New AOCs

Additional information for each of these categories is included in the following sections.

6.1 CURRENT SITE CONDITIONS

During the Site walk, there were no apparent signs that cleanup activities had occurred since the response actions carried out in 2017; the same safety and environmental conditions on the property previously documented by EPA are still present. In addition, observations of recent Site activities were documented and indicated an increase of Site hazards. These observations included:

- Numerous wrecked vehicles scattered across the property, presumably as part of a salvage operation.
- Two approximately 400-gallon totes of liquid; measurable concentrations of volatile organic compounds (VOCs) were detected using a photoionization detector (PID).
- A red oily product leaking from AST T-3 (Figure 2), which had been emptied of pumpable liquid and sealed during the 2017 response. A ladder leaning against the AST and piping was observed running from the access port at the top of the tank and leading to the previously mentioned totes.
- A concrete, secondary containment ('Secondary Containment C' [E&E, 2017a]) full of water with large cracks at numerous locations around the perimeter allowing the release of liquids from the structure.
- Suspect asbestos-containing material (ACM) in insulation surrounding several ASTs, which is actively deteriorating and potentially releasing ACM into the environment.

6.2 PAST AREAS OF CONCERN

During the 2017 response action, hazardous substances, oil, and sludge were assessed and disposed. Nine ASTs were identified with pumpable product/waste. The predominant product/waste identified in the ASTs was tall oil, a dark, viscous oily substance that smelled vaguely of pitch or pine. Crude glycerin was identified in two ASTs within a secondary containment structure of the facility. From the targeted nine ASTs, EPA was able to remove an

estimated 90,000 gallons of tall oil product. However, an estimated 100,000 gallons of waste remained on Site. The remaining waste was heavy and non-pumpable, and it was not considered an immediate threat of release.

During the 2017 response action, approximately 15,000 gallons of tall oil liquid/sludge was pumped out of AST T-20 and the remaining estimated 8,281 gallons non-pumpable sludge was left in place for the property owner to address. Sampling of the remaining sludge in AST T-20 performed in the latter half of 2017 indicated that this material contained CERCLA hazardous substances and likely exceeded Resource Conservation and Recovery Act (RCRA) hazardous waste criteria for toxicity. Although these concerns were communicated to the property owner by State of Washington hazardous waste program regulators, no apparent signs of cleanup or removal of the sludge were observed during the February 2022 Site walk.

ASTs T-1, T-2, and T-3 are 25,000-gallon ASTs that stored tall oil liquid/sludge. During the 2017 response action, liquid tall oil was removed from all three ASTs. T-1, T-2, and T-3 were left with approximately 8,860; 9,445; and 578 gallons of non-pumpable tall oil sludge, respectively. The tanks were inspected, secured, boomed for potential leakage of residual material and left in place prior to demobilization. Observations from the February 2022 Site walk revealed that the hatch access doors on ASTs T-1 and T-3 had been opened. Both ASTs had ladders propped alongside them with hoses coming out of the openings. The valve from AST T-3 was observed leaking an oily product at a slow rate directly onto the ground surface. The surface soil surrounding ASTs T-1 through T-3 was saturated with a dark-red oily product which was observed to extend approximately 75 feet to the north. It appeared that the volume of material in AST T-1 had increased significantly from 2017.

Secondary Containment C holds nine large ASTs previously used for tall oil production. During the 2017 response action, Secondary Containment C was observed partially filled with water. Analytical results from water samples collected within Secondary Containment C, indicated the presence of VOCs, and SVOCs and concentrations of metals likely associated with deterioration of the tanks themselves. Activities during the 2017 response did not include removing the water, as it was outside of the scope of the action, and, if pumped down, would quickly refill with precipitation. During the February 2022 Site walk, Secondary Containment C was observed in

much the same condition: filled with stagnant water greater and a significant portion what appeared to be tall oil sludge. In addition, the containment wall showed multiple large, leaking cracks throughout the perimeter.

6.3 NEW AREAS OF CONCERN

Observations made during the February 2022 Site walk indicated recent activities have occurred on Site. As noted in Sections 6.1 and 6.2, two ASTs (T-1 and T-3) currently contain what appears to be an increased volume (from 2017 levels) of an unknown oily product, that could be tall oil. Equipment and supplies, including two approximately 400-gallon poly totes (blue and red), are staged outside the southwest area of Secondary Containment C. PID readings near the totes indicated elevated VOC concentrations. In addition, five chemical containers, totaling less than 5 gallons, were discovered in one of the former laboratory trailers. As part of the 2017 CERCLA TCRA scope of activities, miscellaneous chemical containers were consolidated, and everything except for commercial products, was disposed.

The continued presence of contents in AST T-20 along with new information provided to EPA following its 2017 action, increases the risk this material poses. The deterioration of Secondary Containment C, along with the presence of large volumes of what appears to be tall oil sludge, create the risk of a significant discharge of oil to nearby waterways.

Two burned areas were observed. One area, adjacent to the poly totes, was inside and surrounding a square metal vat. The vat showed signs of charred residue at the base and on the surrounding soil. A second area with wood and metal debris was noted along the south side of the property and near an empty Conex box. The soil near both areas was blackened.

Several of the ASTs and ancillary equipment were observed to be wrapped with suspect ACM, which was no longer intact. Additionally, flaking from potential lead-based paint (LBP) was observed on the ground surface near AST T-3.

Numerous inoperable vehicles with collision damage have accumulated on Site. The vehicles are scattered throughout the property, and some appear to have been picked over for salvage or scrap.

7 RECOMMENDED SAMPLE LOCATIONS

Recommendation for future Site characterization detailed in the “Proposed Sampling Approach Memorandum” (E&E, 2017b) is inclusive of past AOCs remaining after the 2017 response action. In addition, due to recent Site activities documented in this Site Walk Trip Report and the continued deterioration of suspect ACM and LBP, new AOCs could be considered (new area with oily product near ASTs T-1, T-2, and T-3, new stained and burned soil and suspected ACM and LBP). Provided with new information regarding the contents of AST T-20, this tank could also be considered for additional evaluation of its contents and structural integrity. Given the large volume of what appears to be rainwater and tall oil sludge in Secondary Containment C and the presence of cracks in sidewalls, this feature may represent a more pressing AOC than in 2017. In addition to analysis of suspect ACM, the primary contaminants of concern (COCs) would likely be SVOCs, diesel and heavy oil range TPH, and TAL metals.

8 SUMMARY AND CONCLUSIONS

A Site walk was completed to evaluate the current conditions at Treoil Industries Biorefinery in Ferndale, Washington. Observations from the Site walk indicated that no apparent cleanup actions have occurred since EPA’s 2017 response action, and Site conditions continue to deteriorate due to lack of upkeep and maintenance. Additionally, recent and on-going Site activities are likely exacerbating the release of oil and hazardous substances to the environment, with the continued potential of impacting waterways.

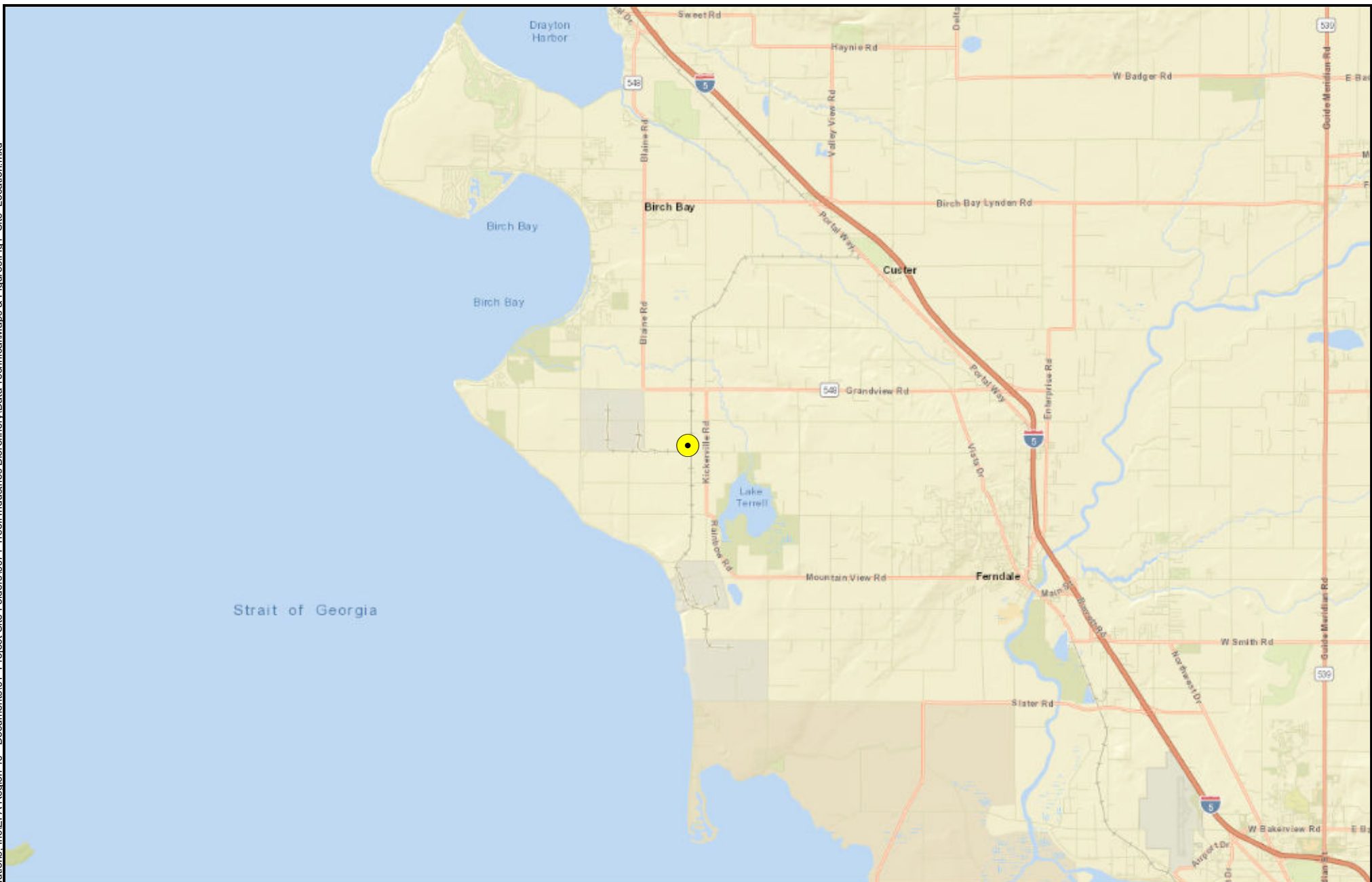
Continued use and improper maintenance of AST T-3 has allowed for the uncontrolled release of oily product to the ground surface. AST T-3 does not have secondary containment and, as such, the release of the oily product extends along the ground surface up to 75 feet away from the tank. The wall of Secondary Containment C is leaking and shows signs of failure. AST T-20 continues to hold more than 8,000 gallons of what is believed to be RCRA hazardous waste. These conditions along with other observations of equipment negligence, degradation, and carelessness may warrant additional evaluation to determine if they pose a direct threat to human health and the environment.

9 REFERENCES

Ecology and Environment, Inc. (E&E, 2017a. *Final Trip Report for Treoil Industries Biorefinery Assessment and Emergency Response Site*. November 7, 2017.

_____. 2017b. *Memorandum - Proposed Sampling Approach, Treoil Facility Site, Ferndale, Washington*. August 24, 2017.

SITE FIGURES

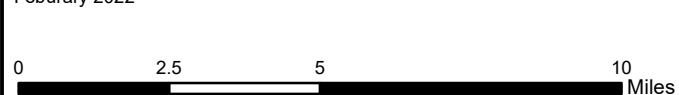


Coordinate System:
WGS 1984 Web Mercator Auxiliary Sphere

Source:
Background: ESRI World Street Map
TO No.: 68HE0722F0042
February 2022

Legend:

 Site Location

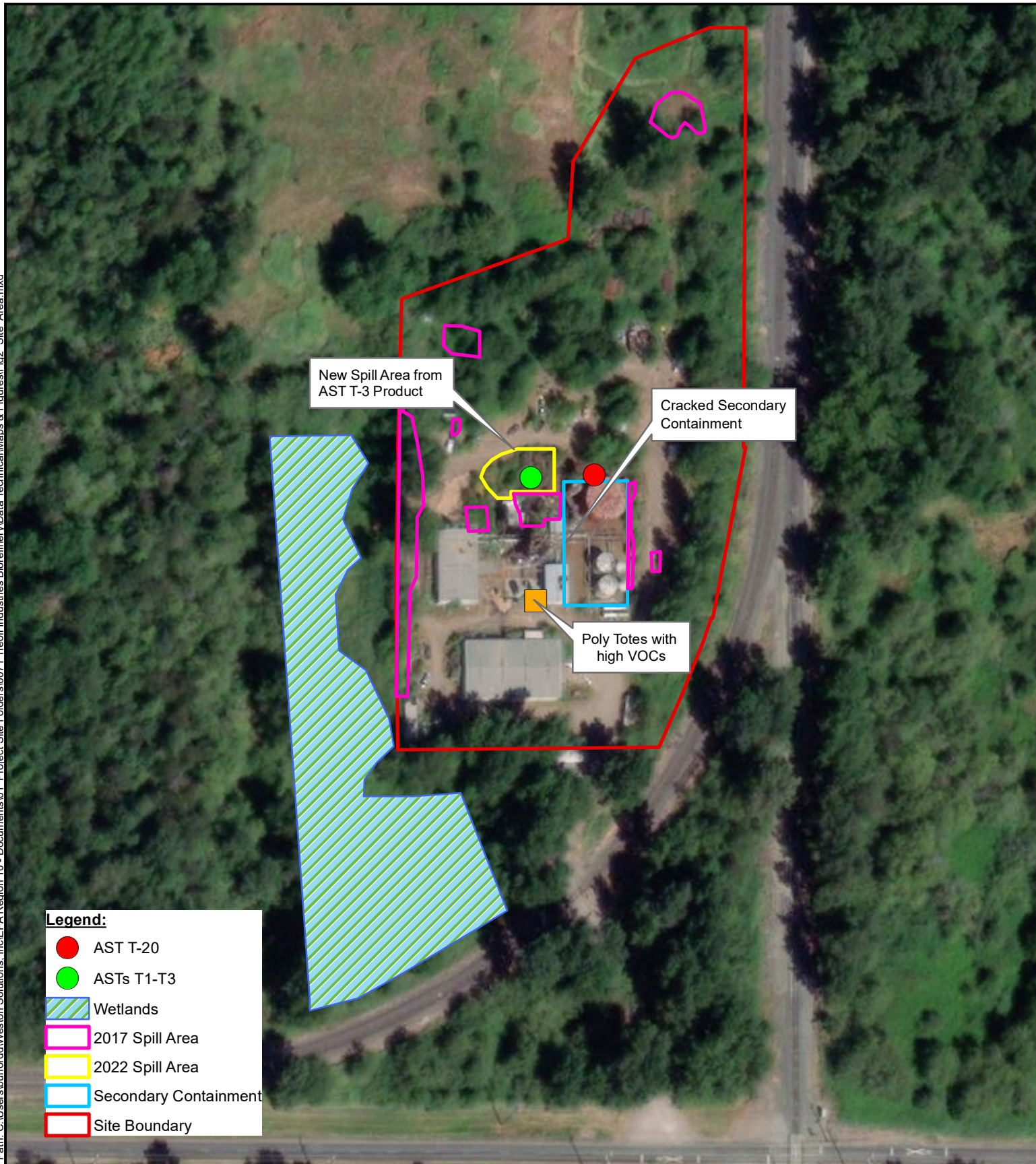


EPA Region 10



Weston Solutions Inc.
START V

FIGURE 1
SITE LOCATION MAP
TREOIL INDUSTRIES BIOREFINERY
4242 ALDER GROVE ROAD
FERNDAL, WHATCOM COUNTY, WASHINGTON



Legend:

- AST T-20
- ASTs T1-T3
- Wetlands
- 2017 Spill Area
- 2022 Spill Area
- Secondary Containment
- Site Boundary

Coordinate System:

WGS 1984 Web Mercator Auxiliary Sphere

Source:

Background: ESRI World Imagery

Task Order No.:

68HE0722F0042

February 2022



Washington

0 125 250 500
Feet



EPA Region 10



Weston Solutions Inc.
START V

FIGURE 2
SITE AREA MAP
TREOIL INDUSTRIES
BIOREFINERY
4242 ALDER GROVE ROAD
FERNDAL, WHATCOM COUNTY
WASHINGTON

ATTACHMENT A

Photographic Documentation

Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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<table> <tr> <td>Photo No. 1</td><td>Date: 02/17/2022</td></tr> <tr> <td colspan="2">Photo Coordinates</td></tr> <tr> <td>Lat</td><td>48.879497</td></tr> <tr> <td>Long</td><td>-122.710861</td></tr> <tr> <td colspan="2">Direction Photo Taken: E</td></tr> <tr> <td colspan="2">Description: Ladder and hose leading to AST T-1 hatch opening.</td></tr> </table>	Photo No. 1	Date: 02/17/2022	Photo Coordinates		Lat	48.879497	Long	-122.710861	Direction Photo Taken: E		Description: Ladder and hose leading to AST T-1 hatch opening.		
Photo No. 1	Date: 02/17/2022												
Photo Coordinates													
Lat	48.879497												
Long	-122.710861												
Direction Photo Taken: E													
Description: Ladder and hose leading to AST T-1 hatch opening.													
<table> <tr> <td>Photo No. 2</td><td>Date: 02/17/2022</td></tr> <tr> <td colspan="2">Photo Coordinates</td></tr> <tr> <td>Lat</td><td>48.879586</td></tr> <tr> <td>Long</td><td>-122.710511</td></tr> <tr> <td colspan="2">Direction Photo Taken: SW</td></tr> <tr> <td colspan="2">Description: Hose trailing out of AST T-3 hatch opening.</td></tr> </table>	Photo No. 2	Date: 02/17/2022	Photo Coordinates		Lat	48.879586	Long	-122.710511	Direction Photo Taken: SW		Description: Hose trailing out of AST T-3 hatch opening.		
Photo No. 2	Date: 02/17/2022												
Photo Coordinates													
Lat	48.879586												
Long	-122.710511												
Direction Photo Taken: SW													
Description: Hose trailing out of AST T-3 hatch opening.													

Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 3	Date: 02/17/2022
Photo Coordinates	
Lat	48.879442
Long	-122.710678
Direction Photo Taken: N	
Description: Product observed in the tank from AST T-3 access hatch.	



Photo No. 4	Date: 02/17/2022
Photo Coordinates	
Lat	48.879172
Long	-122.710381
Direction Photo Taken: NW	
Description: Product leaking from and pooling around AST T-3.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 5	Date: 02/17/2022
Photo Coordinates	
Lat	48.879608
Long	-122.710608
Direction Photo Taken: S	
Description: Product floating on ground surface.	



Photo No. 6	Date: 02/17/2022
Photo Coordinates	
Lat	48.879425
Long	-122.710817
Direction Photo Taken: SW	
Description: Product observed floating on surface water and stained soil.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 7	Date: 02/17/2022
Photo Coordinates	
Lat	48.879269
Long	-122.710664
Direction Photo Taken: W	
Description: Flooded secondary containment for nine enclosed ASTs.	



Photo No. 8	Date: 02/17/2022
Photo Coordinates	
Lat	48.879508
Long	-122.710517
Direction Photo Taken: S	
Description: Fracture in failing secondary containment.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 9	Date: 02/17/2022
Photo Coordinates	
Lat	48.879239
Long	-122.710236
Direction Photo Taken: W	
Description: Uncontrolled release of suspect ACM around ASTs.	



Photo No. 10	Date: 02/17/2022
Photo Coordinates	
Lat	48.879428
Long	-122.710717
Direction Photo Taken: N	
Description: Uncontrolled release of suspect lead-based paint from AST.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 11	Date: 02/17/2022
Photo Coordinates	
Lat	48.879108
Long	-122.710572
Direction Photo Taken: NW	
Description: 400-gallon poly totes containing unknown products.	



Photo No. 12	Date: 02/17/2022
Photo Coordinates	
Lat	48.879047
Long	-122.710769
Direction Photo Taken: NE	
Description: 400-gallon poly totes containing unknown products.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 13	Date: 02/17/2022
Photo Coordinates	
Lat	48.878914
Long	-122.710831
Direction Photo Taken: E	
Description: Containers with unknown contents staged near tote staging area.	



Photo No. 14	Date: 02/17/2022
Photo Coordinates	
Lat	48.879722
Long	-122.711075
Direction Photo Taken: NE	
Description: Chemicals stored post 2107 TRCA in former laboratory trailer.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 15	Date: 02/17/2022
Photo Coordinates	
Lat	48.879094
Long	-122.710914
Direction Photo Taken: NW	
Description: Burned area inside and surrounding metal vats.	



Photo No. 16	Date: 02/17/2022
Photo Coordinates	
Lat	48.879025
Long	-122.710892
Direction Photo Taken: NE	
Description: Burned and stained soil around footprints of metal vats. Evidence of leaking was observed.	



Project Name: Treoil Industries Biorefinery	Site Location: Ferndale, Washington	Project No. 68HE0722F0042
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Photo No. 17	Date: 02/17/2022
Photo Coordinates	
Lat	48.879672
Long	-122.710586
Direction Photo Taken: NW	
Description: Wrecked vehicles with collision damage were observed across the property.	



Photo No. 18	Date: 02/17/2022
Photo Coordinates	
Lat	48.8798
Long	-122.710092
Direction Photo Taken: N	
Description: Additional photos of wrecked vehicles.	

