

# Waters Investigation Report

Humboldt County APN 104-321-010-000

February 1, 2021

Prepared by

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## Introduction

In January of 2021, the responsible agencies were alerted to the potential presence of a previously unmapped jurisdictional watercourse in the northwest corner of Jason Goforth's property on Mattole Rd (APN 104-321-010-000). NRM botanist and wetland specialist Claire Brown visited Humboldt County APN 104-321-010-000 on February 1, 2021 to investigate.

## Hydrologic conditions

The Petrolia National Weather Service (NWS) station had recorded 6.29 inches of accumulated precipitation between January 24<sup>th</sup>, and January 29<sup>th</sup>, 2021, the week prior to the site visit. Almost all (5.41 inches) fell on January 27<sup>th</sup> and 28<sup>th</sup>. Recorded totals for January 30<sup>th</sup> and February 1<sup>st</sup> are not yet available at the date of this writing, but the NWS had forecast approximately 2 inches of precipitation over that period (NOAA 2021). The day of and the days preceding the site visit were during a heavy rain event.

As of January 29<sup>th</sup>, the accumulated to-date precipitation of the 2020-2021 water year at the Petrolia NWS station was 22.4 inches (NOAA 2021). "Normal" calculations are not available at that station, but at the Scotia NWS station, accumulated to-date precipitation of the 2020-2021 water year is 58% of 'normal' (NOAA 2021).

## Findings

During the investigation, a previously unmapped water feature was identified in the western corner of the Goforth parcel. The feature appears disrupted and apparently altered and is therefore difficult to classify. This feature, where it was visible from the APN 104-321-010-000 parcel, is confined to a broad and low-gradient topographic swale running northeast-southwest across the west corner of the Goforth parcel. It has no bed and bank where it crosses the

Goforth property, and no clearly defined channel either above or below. It may, in fact, simply be an area of concentrated overland flow, but previous disturbance to the area makes feature class hard to determine. The feature is probably almost undetectable from the Goforth property except during and directly after storm events.

The feature currently consists of four reaches, defined here as Reach 1, 2, 3 and 4. Reaches 3 and 4 are on the Goforth property.

Reach 1 is on the parcel to the north (APN 104-321-001) and appears to be primarily an area of concentrated overland (sheet) flow. The area appears to have been tilled in recent aerial imagery (within the last 5 years) but is thickly vegetated with pasture grasses. The area may have had a defined channel prior to tillage but does not currently appear to be defined by a bed and bank. Some channelization may exist, but due to the thick vegetation and lack of access, this was undetermined during the site visit. The slope of Reach 1 is approximately 10%

Reach 2 is where the concentrated sheet flow somewhat channelizes into a Class III ephemeral stream before crossing on to the Goforth property. There is still not a well-developed bed and bank, but flow is concentrated in a linear, vegetated area. A slight berm running east-west along the property boundary fence causes the sheet flow from the north to concentrate and pool along the boundary, but it drains onto the Goforth property via Reach 2. The slope of Reach 2 is approximately 5%.

At Reach 3, the discharge from Reach 2 dissipates back into a sheet flow and is joined by additional overland flow from the western slope of the Goforth parcel. This sheet flow runs along a dirt road on the west side of a cultivation area, then concentrates and pools along a berm on the outboard edge of the neighbor's (APN 104-321-001) deeded access road. At the time of the site visit, there was over 1 foot of standing water on the road against the berm. The slope of Reach 3 is approximately 8%.

At Reach 4, the discharge from Reach 3 flows over the berm along the access road and continues down the topographic swale on the parcel to the south, APN 104-301-007. Reach 4 appears to be a braided Class III channel with some defined bed and bank. However, the thick vegetation, abundant sheet flow, and lack of access made this difficult to determine.

A three-parameter wetland investigation was conducted over the vicinity of Reaches 2 and 3. Reach 2 is thickly vegetated by pasture grasses with a facultative (FAC) wetland indicator status, primarily tall fescue (*Festuca arundinacea*, FAC), colonial bentgrass (*Agrostis capillaris*, FAC), and orchard grass (*Dactylis glomerata*, FAC). At Plot 1, no hydric soil indicators were identified to a depth of 23 inches. The soil profile was dark below 8 inches (10YR 2/1), but no soil auger was on-hand to allow for a deeper investigation for the presence of the indicator Thick Dark Surface (A12). However, the landform and site history do not indicate conditions that would lead to the development of a deep depleted or gleyed layer. Multiple additional soils investigations were made throughout the Study Area where storm water was pooling, each to a depth of approximately 17 inches. No redoximorphic features or other hydric soil indicators were found,

even within Reach 3 where there was 1 ft of standing water. At Plot 1, standing water and active storm runoff were present, but it was difficult to determine the depth of the water table (since storm water runs into the test pits). Additional investigations after periods of dryer weather would be needed to determine water table depth. See Wetland Determination Dataform below.

Therefore, it appears that while stormwater concentrates in the area, soil saturation does not persist long enough to develop wetland conditions.

Agency correspondence during January of 2021 had indicated the potential presence of an additional unmapped watercourse running approximately east west through the central-southern portion of the parcel. No such watercourse was identified. A faint quad track was present, and stormwater was pooled in tire tracks at a few distinct points. Soils investigations down to a depth of approximately 17 inches revealed no hydric soil indicators or indications of prolonged saturation.

See Figures 1 -3 and Photos below.

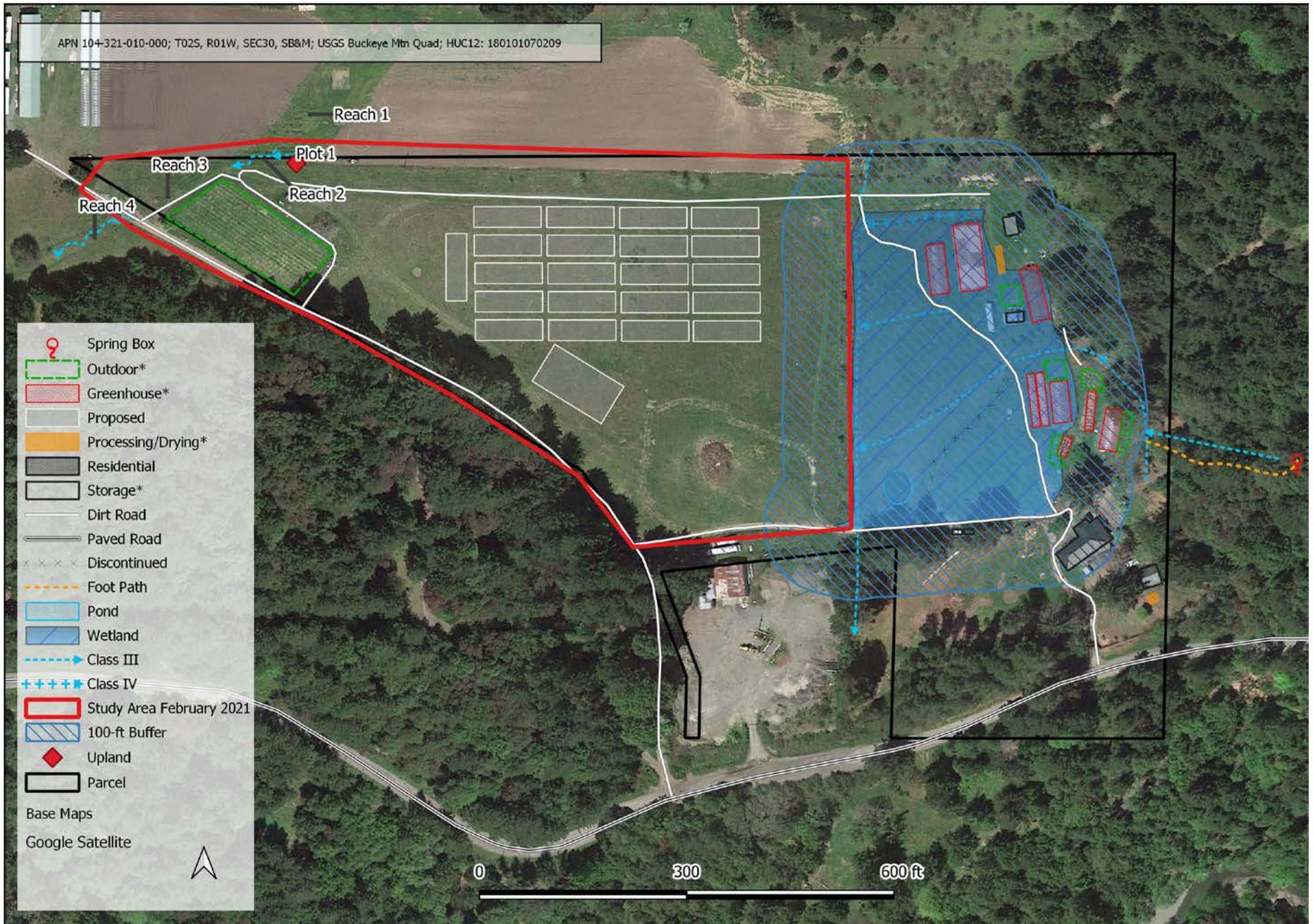


Figure 1. Site Overview, February 1, 2021. \* Denotes existing greenhouses, outdoor space, and infrastructure related to existing cannabis cultivation activities which will be removed and relocated to the 'Proposed' growing location at the center of the property.



Figure 2. Study Area February 1, 2021. \* Denotes existing greenhouses, outdoor space, and infrastructure related to existing cannabis cultivation activities which will be removed and relocated to the 'Proposed' growing location at the center of the property.

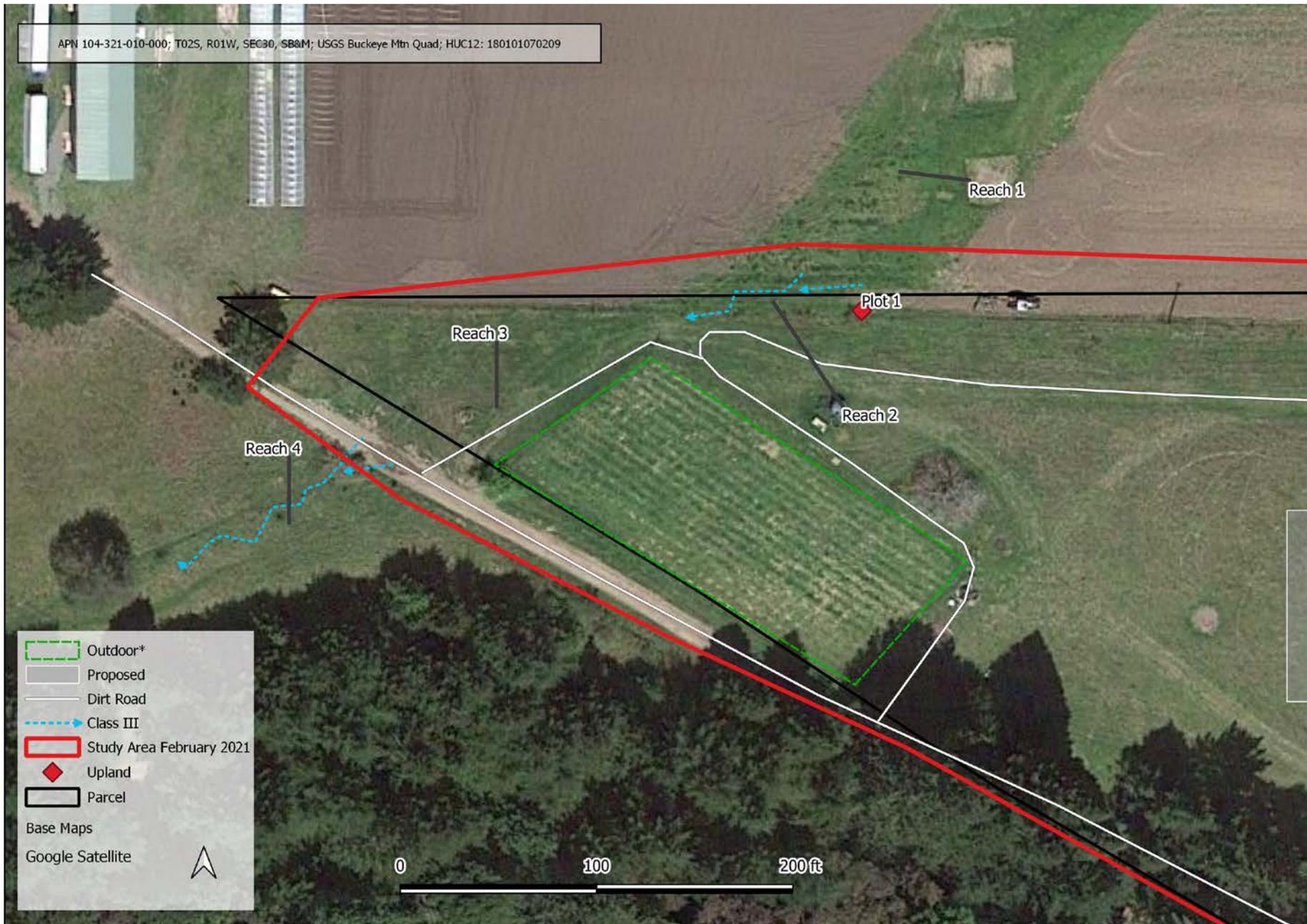


Figure 3. Watercourse Reach Delineation. \* Denotes existing greenhouses, outdoor space, and infrastructure related to existing cannabis cultivation activities which will be removed and relocated to the 'Proposed' growing location at the center of the property.

## Site Photos



Photo 1. Reach 1 flowing southwest across parcel to the north (APN 104-321-001-000). Looking northeast from property line



Photo 2. Reach 1 flowing southwest across parcel to the north (APN 104-321-001-000). Looking northwest from property line.



Photo 3. Reach 1 flowing southwest across parcel to the north (APN 104-321-001-000). Looking north from property line



Photo 4. Reach 1 flowing southwest across parcel to the north (APN 104-321-001-000). Looking northwest from property line



Photo 5. Reach 2 flowing southwest across parcel to the north (APN 104-321-001-000). Looking west/northwest along property line



Photo 6. Reach 2 flowing southwest across parcel to the north (APN 104-321-001-000). Looking northeast at point where flow crosses property line onto APN 104-321-010-000



Photo 7. Reach 2 flowing southwest across parcel to the north (APN 104-321-001-000). Looking northeast at point where flow crosses property line onto APN 104-321-010-000



Photo 8. Looking east along property line at point where Reach 2 crosses property line onto APN 104-321-010-000. Storm runoff/ sheet flow from road/hillslope to east in photo right.



Photo 9. Looking west along property line at point where Reach 2 crosses property line onto APN 104-321-010-000 (at pink flag). Storm runoff/ sheet flow from road/hillslope to east JOINS flow from Class III in photo left.



Photo 10. Looking west along property line toward point where Reach 2 crosses property line onto APN 104-321-010-000 (at red arrow). Storm runoff/ sheet flow from road/hillslope to east JOINS flow from Class III in photo center, across from red arrow.



Photo 11. Pooled storm runoff/sheet flow on north side of outdoor cultivation area. Looking west.



Photo 12. Looking east towards point where reach 2 (red arrow), joins sheet flow, and becomes Reach 3 (sheet flow without a defined channel) on west side of cultivation area. Blue area points to where water is pooled on APN 104-321-001-000. A slight berm along fence line prevents water from flowing onto APN 104-321-010-000 except at red arrow (Reach 2).



Photo 13. Looking south along direction of Reach 3 on the west side of cultivation area. Tree in Photo left is on north side of neighbor's access road, where water is also pooled. Red arrow indicates where water flows off the road (bottom of Reach 3).



Photo 14. Looking east along property line, where water is pooled against slight berm on outboard road edge, and flows over at the red arrows (Bottom of Reach 3).



Photo 15. Looking west at water from Reach 3 where it comes together with additional overland flow from the east and is pooled against road berm on southern property line.



Photo 16. Looking west at transition from Reach 3 to Reach 4 (at red arrows) along outboard side of access road.



Photo 17. Looking northeast across Reach 3, towards reach 2 and southwest corner of cultivation area.



Photo 18. Looking southwest along Reach 4 on APN 104-301-007



Photo 19. Looking southwest along Reach 4 on APN 104-301-007



Photo 20. Site of Wetland Investigation Plot 1.



Photo 21. Partial profile of soils at Plot 1.



Photo 22. Looking east across south-central portion of Goforth parcel. No watercourse present in this area



Photo 23. Looking west across south-central portion of Goforth parcel. No watercourse present in this area.

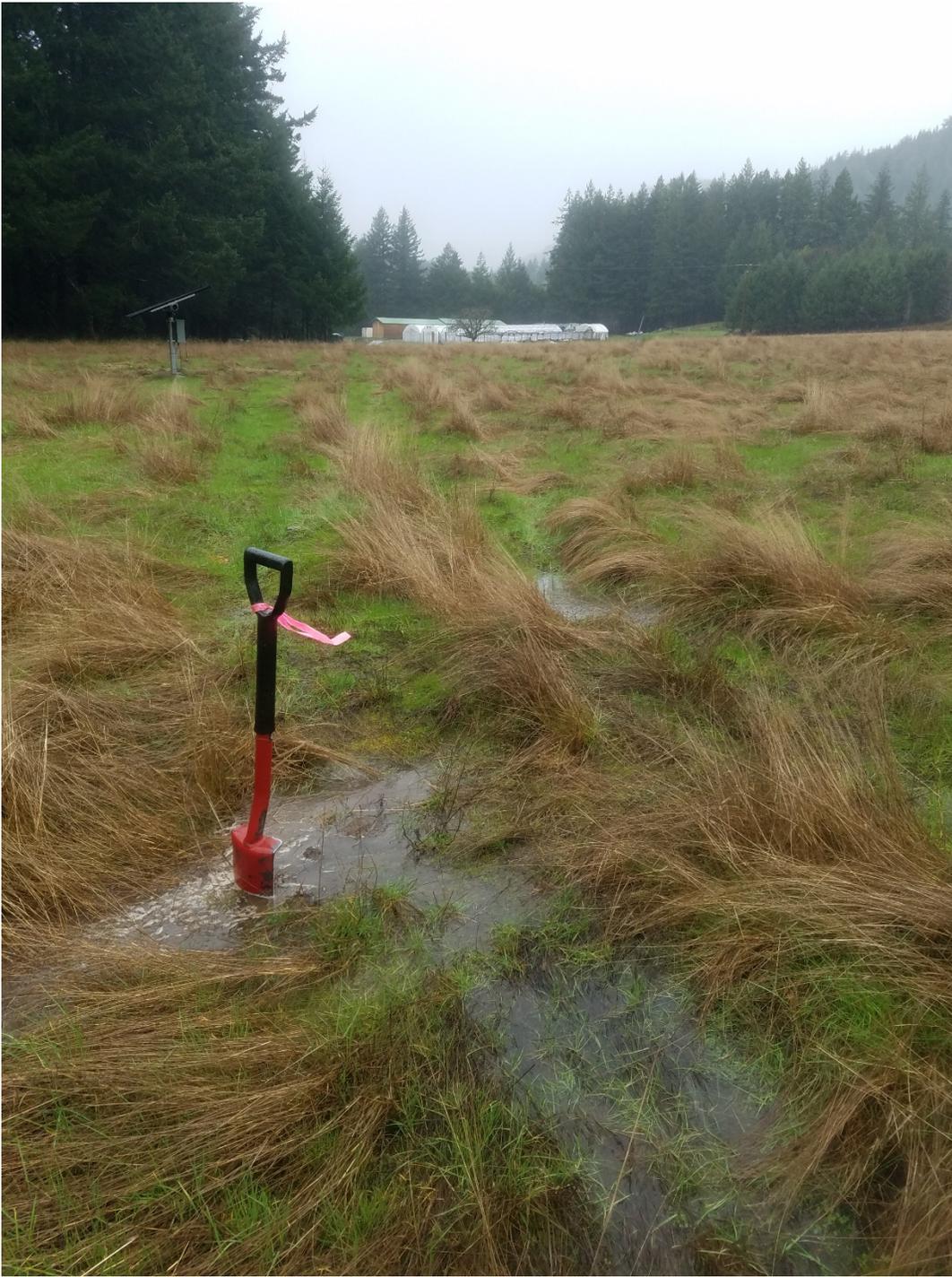


Photo 24. Water pooled in tire track along central-southern portion of the Goforth parcel. No wetland indicators or directional flow identified.

**SOIL**

Sampling Point: 1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100					Clay loam	
8-23	10YR 2/1	100						I allowed some samples to dry to check for redox masked by dark color

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: Not possible to probe deeper due to surface water - can't rule out A12, but seems unlikely due to land form

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (2 or more required)</b>
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

**Field Observations:**

Surface Water Present? Yes  No \_\_\_\_\_ Depth (inches): 1

Water Table Present? Yes  No \_\_\_\_\_ Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes  No \_\_\_\_\_ Depth (inches): 0

Wetland Hydrology Present? Yes \_\_\_\_\_ No \_\_\_\_\_

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: I had directional flow difficult to discern due to abundant surface flow running into pit