APPENDIX C3
Aquatic Resources Delineation Report
AQUATIC RESOURCES DELINEATION REPORT
MANCHESTER SUBSEA CABLES PROJECT,
MENDOCINO COUNTY

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Summary

This report presents the methods and results of a delineation of aquatic resources conducted for the Manchester Subsea Cables Project (Project) and provides technical documentation for delineated wetlands, non-wetland waters, and California Coastal Act (CCA) wetlands.

The Project occurs approximately 35 miles south of Fort Bragg and 5 miles north of Point Arena in southwestern Mendocino County. The Project parallels California State Route 1 (SR 1) for approximately 5 miles, with the Pacific Ocean immediately west of the Project. RTI Infrastructure, Inc. is proposing to install fiber optic infrastructure along SR 1 and adjacent properties (Figure 1); the fiber optic cables will eventually extend west on the ocean floor of the Pacific Ocean to Hong Kong, China, Australia, and the island of Guam.

Included in this report are delineated aquatic resources regulated under Sections 404 and 401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and the CCA. The delineated aquatic resources described in the report consist of wetlands and non-wetland waters regulated by the U.S. Army Corps of Engineers (USACE) and CCA wetlands regulated by the California Coastal Commission (CCC).

The survey area covers 48 acres and encompasses all areas required to construct the project, including areas for access, storage, and staging of materials and equipment. The survey area consists of the road shoulders within the California Department of Transportation right-of-way (ROW) to the fence line for approximately 5 miles along both sides of SR 1, Kinney Road west of SR 1, the cable landing parcel west of SR 1, and three cable landing stations west of SR 1.

The field survey was conducted on June 26–28, September 29–30, and October 10–12, 2018 by ICF botanist/wetland ecologists using the routine on-site determination methods described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the supplemental methods and indicators in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers 2010).

USACE jurisdictional non-wetland waters were mapped and delineated in accordance with indicators and guidance described in the USACE Regulatory Guidance Letter No. 05-05, dated December 7, 2005 (U.S. Army Corps of Engineers 2005) and the A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (Mersel and Lichvar 2014).

The Pacific Ocean is approximately 500 feet west of the survey area. Via desktop delineation, the upper elevational limit of tidal waters was delineated at the high tide line (HTL) per section 404 of the Clean Water Act. The HTL was estimated from high predicted tide in 2019 for the closest tidal station to the survey area, the Arena Cove Station (Station ID: 9416841) (National Oceanic and Atmospheric Administration 2019); the Arena Cove Station is approximately 7.1 miles south of the cable landing parcel, which is the portion of the survey area closest to the Pacific Ocean. The HTL was delineated at 7.5 feet above mean sea level. Per Section 10 of the Rivers and Harbors Act, the upper elevational limit of navigable waters was delineated at the reported mean high water (MHW) for the Arena Cove Station (National Oceanic and Atmospheric Administration 2019); the MHW is 5.2 feet above mean sea level. Topographic data were obtained from the U.S. Geological Survey (2017); the upper elevation limits of the HTL and MHW are depicted on Sheet 1 of Appendix A.
Within the survey area, 0.556 acre of potential waters of the United States was identified and mapped, comprising 0.101 acre of wetlands and 0.455 acre of non-wetland waters (Table 1).

This report was prepared to support the request for a preliminary jurisdictional determination from the USACE, San Francisco District. In accordance with the preliminary jurisdictional determination approach, all of these features were interpreted to be potentially jurisdictional under Section 404 of the Clean Water Act, and applicants waive or set aside questions regarding the jurisdictional status of wetlands and non-wetland waters, as described in *U.S. Army Corps of Engineers Regulatory Guidance Letter No. 16-01* (U.S. Army Corps of Engineers 2016).

ICF botanist wetland ecologists identified and mapped 0.584 acre of CCA wetlands in the survey area. CCA wetlands include features with evidence of wetland hydrology and one other wetland indicator (hydric soils or hydric vegetation) regulated by the USACE.

Table 1 reports waters of the United States and CCA wetlands delineated in survey area. All waters of the United States presented in this report also would qualify as waters of the state and CCA wetlands according to the CCC.

**Table 1. Summary of Aquatic Resources in the Survey Area**

<table>
<thead>
<tr>
<th>Aquatic Resource Type</th>
<th>Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waters of the United States</strong></td>
<td></td>
</tr>
<tr>
<td>Wetlands</td>
<td></td>
</tr>
<tr>
<td>Emergent wetlands</td>
<td>0.101</td>
</tr>
<tr>
<td><strong>Non-Wetland Waters</strong></td>
<td></td>
</tr>
<tr>
<td>Perennial stream</td>
<td>0.286</td>
</tr>
<tr>
<td>Intermittent stream</td>
<td>0.057</td>
</tr>
<tr>
<td>Ephemeral stream</td>
<td>0.015</td>
</tr>
<tr>
<td>Roadside ditch</td>
<td>0.057</td>
</tr>
<tr>
<td>Culverts</td>
<td>0.040</td>
</tr>
<tr>
<td><strong>Total Waters of the United States</strong></td>
<td><strong>0.556</strong></td>
</tr>
<tr>
<td><strong>California Coastal Act Wetlands</strong></td>
<td></td>
</tr>
<tr>
<td>Emergent wetland</td>
<td>0.101</td>
</tr>
<tr>
<td>Seasonal wetland</td>
<td>0.036</td>
</tr>
<tr>
<td>Riverine wetland</td>
<td>0.447</td>
</tr>
<tr>
<td><strong>Total California Coastal Act Wetlands</strong></td>
<td><strong>0.584</strong></td>
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## Acronyms and Abbreviations

°F Fahrenheit  
CCA California Coastal Act  
CCC California Coastal Commission  
CFR Code of Federal Regulations  
CLP cable landing parcel  
CLS cable landing station  
GPS global positioning system  
HDD horizontal directional drilling  
HTL high tide line  
LMH landing manhole  
MHW mean high water  
MSL mean sea level  
MWH mean high water  
NWI National Wetlands Inventory  
OHWM ordinary high water mark  
Project Manchester Subsea Cables Project  
ROW right-of-way  
SR State Route  
USACE U.S. Army Corps of Engineers  
USFWS U.S. Fish and Wildlife Service
Chapter 1
Introduction

This report presents the methods and results of a delineation of aquatic resources conducted for the Manchester Subsea Cables Project (Project) and provides technical documentation for delineated wetlands, non-wetland waters, and California Coastal Act (CCA) wetlands. RTI Infrastructure, Inc. is proposing to install fiber optic infrastructure along State Route 1 (SR 1) and adjacent properties (Figure 1); the fiber optic cables will eventually extend west on the ocean floor of the Pacific Ocean to Hong Kong, China, Australia, and the island of Guam.

Project Location

The Project is in Manchester in southern Mendocino County, California, approximately 35 miles south of Fort Bragg and 5 miles north of Point Arena (Figure 1). The Project parallels SR 1 for approximately 5 miles, with the Pacific Ocean west of the Project. The Project is in the Mallo Pass Creek and Point Arena U.S. Geologic Survey 7.5-minute quadrangles in Section (S) 1, Township (T) 13N, Range (R) 17 West, S18 T13N 16W, S19 T13N R16W, S12 T13N R17W, S13 T13N R17W, and S23 T13N R17W, S24 T13N R17W, S25 T13N R17W. The north end of the survey area is at approximate coordinates 39.014987° North, -123.688305 °West, and the south end is at 39.966263° North, -123.686974° West (WGS84/NAD83 datum).

Project Description

The proposed project involves installation of fiber optic cables and associated facilities and systems proposed for construction in fall 2019. The fiber optic cables will eventually extend west on the ocean floor of the Pacific Ocean to Hong Kong, China, Australia, and the island of Guam. The terrestrial components of the project would be constructed above the mean high water (MHW) level and include a landing manhole (LMH) on the cable landing parcel (CLP), staging areas, and underground conduit systems.

Landing Manhole. Four marine cables would be pulled into a LMH on the coastal terrace, east of the cliffs and bluffs, onto private land referred to as the cable landing parcel. Each cable would be routed through its own landing pipe. The landing pipes would be installed using horizontal directional drilling (HDD) under the bluff and beach. The LMH would provide access to the landing pipes and would be the point where the marine and terrestrial cables connect.

Staging Area. Two temporary staging areas would be established to park vehicles and store construction equipment. One staging area would be located at the CLP; the second staging area would be located near the town of Manchester.
Aquatic Resources Delineation for the Manchester Subsea Cables Project, Mendocino County

Figure 1-1
Project Location
Underground Conduit Systems. From the LMH, two underground conduit systems, each approximately 5 miles long, would be constructed—one on either side of SR 1. These conduit systems would connect the cable systems to a cable landing station (CLS) (Figure 1-2). The terrestrial conduit systems would be buried to a minimum depth of 3 feet and would include typical manholes (intermediate manholes) for maintenance access.

Existing Cable Landing Station (CLS). One of three existing CLSs (Figure 1-2) would house telecommunications and power equipment.

Intermediate Manholes. Precast concrete manholes would be placed at intervals of approximately 1,200 to 2,500 feet along the routes between the CLS and the LMH. The manholes are necessary to allow access to the underground conduit systems for cable installation and maintenance. Typically, the manholes would be approximately 4 feet square and 6 feet deep, with a cast-iron manhole cover 36 inches in diameter at grade level.

Conduit Installation. Conduit would be installed using both conventional trenching methods and trenchless construction technology. Conventional trenching involves the excavation of a trench system that is approximately 12–18 inches wide and 36–48 inches deep. Trenchless construction would be used to cross under streams (six watercourses have been identified along the alignment) and for installation of the terrestrial conduit system at other locations. Bores would be spaced approximately 300 feet apart and require bore entry and exit pits that measure approximately 4 feet wide by 8 feet long by 5 feet deep. Each pit also would require a work area of approximately 500 square feet.

If conditions are not conducive for trenchless construction at the creek crossings where bridges have been constructed, conduit would be secured to the bridge structure.

Post-Project Site Restoration. Upon completion of the project, all work and staging areas would be restored to pre-project conditions. Restoration would involve regrading areas to their original contours, installing erosion control material, and if necessary, seeding with a commercially available erosion-control native-seed mixture.
**Survey Area**

For the purpose of this study, the survey area covers 48 acres and encompasses all areas required to construct the project, including areas for access, storage, and staging of materials and equipment. The survey area consists of the road shoulders within the California Department of Transportation right-of-way (ROW) to the fence line for approximately 5 miles along both sides of SR 1, Kinney Road west of SR 1, the CLP west of SR 1, and the three CLSs. ICF botanists/wetland ecologists did not have access to the three CLSs; the “AT&T CLS” and “Level 3 CLS” are already developed and do not require wetland delineations. The property containing the “private CLS” supports managed nonnative annual grasslands and is unlikely to support aquatic resources. Because a protocol-level aquatic resources delineation was not conducted in the nonnative annual grassland; the private CLS will be surveyed in 2019, and a supplemental memo will be prepared.
Chapter 2

Setting

Climate

Average annual rainfall in the vicinity of the Project is 41 inches (see WETS table in Appendix H) (Western Regional Climate Center 2018); precipitation data were sourced from the closest National Weather Service Station with sufficient data, the Fort Bragg 5N Weather Station (Station 06045). The survey area receives cool, wet winters and mild, foggy summers; rain falls primarily between December and March. The mean maximum annual air temperature is 60.6 Fahrenheit (°F), and the mean minimum annual temperature is 44.8°F. Coolest temperatures occur in December and January, and the warmest months are August and September (Western Regional Climate Center 2018). The length of the growing season (based on 32° F air temperature thresholds) is approximately 316 days.

Precipitation

Prior to the delineation, 33 inches of rain fell during the rainy season (October 2017 to April 2018) (National Oceanic and Atmospheric Administration 2018a, 2018b). Preceding the field surveys, rainfall for the months of June through September 2018 totaled approximately 0.3 inch, which is 17% of the average rainfall for those months.

Topography

The CLP is relatively flat, with elevations ranging between 169 and 181 feet above mean sea level (MSL). Along SR 1, the topography undulates between 29 feet and 195 feet above MSL, with topographic lows at the stream crossings. A topographic map is depicted on the Index Sheet of Appendix A.

Hydrology

The primary source of hydrology in the survey area is precipitation and runoff, which ultimately drain to the Pacific Ocean via Alder Creek, Brush Creek, Unnamed Stream 1, Unnamed Stream 2, Unnamed Stream 3, and Unnamed Stream 4. Outside and east of the survey area, Unnamed Stream 2 appears to be a tributary to Alder Creek and Unnamed Stream 4 appears to be a tributary to Brush Creek (Google Earth). Unnamed Streams 1–4 were denoted in the Terrestrial Biological Resources Report for the Manchester Subsea Cables Project (ICF 2019) because the streams are suitable habitat for special-status wildlife species.

The survey area is within the Big-Navarro-Garcia watershed (hydrologic unit code 18010108) (U.S. Geological Survey 2018). The survey area contains perennial streams, intermittent streams, ephemeral streams, and roadside ditches that drain to the Pacific Ocean.
Land Use

Land uses in and around the survey area consist of the California Department of Transportation ROW, privately owned open space, grazing lands, rural residential areas, and the town of Manchester.

Soils

The soil survey shows that 10 soil map units occur in survey area (Natural Resources Conservation Service 2018). A map of the soil map units is provided in Appendix C. Summary information on the characteristics of each map unit, including hydric components and local phases, is provided in Table 2. All but one soil map unit (Dystropepts, 30 to 75 percent slopes) includes hydric soil components.

Table 2. Soil Map Units in the Survey Area

<table>
<thead>
<tr>
<th>Soil Map Unit</th>
<th>Map Symbol</th>
<th>Drainage Class</th>
<th>Landform</th>
<th>Hydric Component (C) or Minor Component (M)</th>
<th>Hydric Criteria a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biaggi loam, 0 to 5 percent slopes</td>
<td>105</td>
<td>Well drained</td>
<td>Marine terraces</td>
<td>Heeser (M) Flumeville (C) Cabrillo (M) Crispin (M) Mallopass (M) Windyhollow (M) Unnamed, gentler or steeper slopes (M)</td>
<td>– 2 – – – – 2</td>
</tr>
<tr>
<td>Cabrillo-Heeser complex, 0 to 5 percent slopes</td>
<td>117</td>
<td>Somewhat poorly drained (Cabrillo), somewhat excessively drained (Heeser)</td>
<td>Marine terraces</td>
<td>Biaggi (M) Crispin (M) Sirdrak (M) Unnamed, gentler slopes (M) Tropaquepts (C)</td>
<td>– – – – 2</td>
</tr>
<tr>
<td>Crispin loam, 0 to 5 percent slopes</td>
<td>132</td>
<td>Well drained</td>
<td>Marine terraces</td>
<td>Flumeville (C) Biaggi (M) Cabrillo (M) Mallopass (M) Windyhollow (M) Unnamed, gentler or steeper slopes (M)</td>
<td>2 – – – –</td>
</tr>
<tr>
<td>Dystropepts, 30 to 75 percent slopes</td>
<td>139</td>
<td>NA</td>
<td>Marine terraces</td>
<td>Abalobadiab (M) Vizcaino (M) Rock outcrop (M) Unnamed, gentler or steeper slopes (M) Unnamed, talus (M)</td>
<td>– – – – –</td>
</tr>
<tr>
<td>Flumeville clay loam, 0 to 5 percent slopes</td>
<td>144</td>
<td>Poorly drained</td>
<td>Marine terraces</td>
<td>Tropaquepts (C) Windyhollow (M) Cabrillo (M) Unnamed, steeper slopes (M)</td>
<td>2 – – – –</td>
</tr>
</tbody>
</table>
Vegetation

The survey area is within the North Coast subregion of the California Floristic Province (Baldwin et al. 2012). Vegetation communities in the survey area consist of grasslands, coastal scrub, riparian scrub, riparian forest, and cypress stands. These vegetation communities support diverse assemblages of trees, shrubs, grass, and herbaceous species. Vegetation communities in the survey area are described in greater detail in the *Terrestrial Biological Resources Report for the Manchester Subsea Cables Project* (ICF 2019).

National Wetlands Inventory

The National Wetlands Inventory (NWI) provides maps and information on the status, extent, characteristics, and functions of wetland, riparian, deepwater, and related aquatic habitats in priority areas to promote the understanding and conservation of these resources. The mapping is provided at a scale of 1:24,000 and uses the U.S. Fish and Wildlife Service (USFWS) wetland definition, which differs from the USACE definition. USFWS requires one wetland parameter instead
of the three wetland parameters required by USACE. The NWI mapping shows the extent of wetlands and deep-water habitats that can be determined with the use of remotely sensed data dating from 1977 to present. The NWI mapping, therefore, cannot be used to delineate wetlands and other waters of the United States but can provide useful background information on the broad types of wetland and riparian vegetation communities in the survey area.

The NWI online describes eight mapped features within approximately 10 miles of the survey area (U.S. Fish and Wildlife Service 2018) (Appendix C). The eight mapped features are described below.

- Freshwater Emergent Wetlands, classified as PEM (palustrine emergent wetland), were mapped in grasslands near and in the survey area.
- Riverine habitats are wetland and deepwater habitats contained within a channel; riverine habitats do not include features dominated by vegetation or habitats with ocean-derived salt concentrations exceeding 0.5 parts per thousand. Riverine features were mapped in the deepwater stream crossings in and near the survey area.
- Freshwater ponds, classified as PUB (palustrine unconsolidated bottom) or PAB (palustrine aquatic bed), were mapped in topographic lows in the grasslands near the survey area.
- Lakes are classified as lacustrine (wetland and deepwater habitats with less than 30 percent vegetation cover); this habitat was mapped southwest of the town of Manchester.
- Estuarine and marine habitats were mapped in the intertidal areas west of the survey area.
- Estuarine and marine deepwater habitats were mapped in the subtidal areas west of the survey area.
Features mapped in the survey area include wetlands and non-wetland waters regulated by the USACE and CCA wetlands regulated by the CCC.

Sources of Information

The following sources of information were reviewed in conjunction with the field survey:

- Mallo Pass Creek and Point Arena U.S. Geological Survey 7.5-minute topographic quadrangles
- Google Earth aerial imagery (2018)
- NWI Maps (U.S. Fish and Wildlife Service 2018)

Field Methods

ICF botanists/wetland ecologists conducted surveys of the survey area on the following dates in 2018:

- June 26–28: Margaret Widdowson and Devin Jokerst
- September 29–31: Margaret Widdowson and Sierra Spooner
- October 10–12: Margaret Widdowson and Jordan Mayor

ICF botanists/wetland ecologists surveyed and mapped aquatic features up to the ocean bluffs on the CLP, as safety permitted, and to the fence line in the ROW.

ICF botanist/wetland ecologists used resource-grade global positioning system (GPS) units, Trimble Geo-XT and an iPad with a R1 antennae, both with sub-meter accuracy, supplemented with aerial photograph interpretation, to map sampling points, boundaries of aquatic resources, and culvert locations. The GPS data were downloaded, differentially corrected, and superimposed onto a 2016 aerial photograph and edited as necessary to generate the delineation maps for USACE-regulated features in Appendix A and CCC-regulated features in Appendix B. Representative photographs were taken in the survey area (Appendix F), and their locations are shown on the maps in Appendix A and Appendix B. A list of plant species observed in the survey area was compiled, and the scientific name and wetland indicator status of each species are provided (Lichvar et al. 2016) (Appendix G).

Delineation Methods for Waters of the United States

Wetlands

ICF botanists/wetland ecologists mapped wetlands using the routine on-site determination methods described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental
Laboratory 1987) supplemented by the guidance and indicators in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (U.S. Army Corps of Engineers 2010).

In accordance with the 1987 Manual and the 2010 regional supplement, ICF botanists/wetland ecologists collected and recorded data on vegetation, soil, and hydrology at sampling points located to describe wetlands and determine the location of the wetland/upland boundary (Appendix D).

**Non-Wetland Waters**

The boundaries of non-tidal, non-wetland waters (streams) were delineated at the ordinary high water mark (OHWM) as defined in 33 Code of Federal Regulations (CFR) 328.3. The OHWM represents the limit of potential USACE jurisdiction over non-tidal waters (e.g., streams, ponds) in the absence of adjacent wetlands (33 CFR 328.04). The OHWM was identified in the field and mapped following the methods in USACE’s Regulatory Guidance Letter 05-05 (U.S. Army Corps of Engineers 2005) and guidance in A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (Mersel and Lichvar 2014). Data on representative stream segments, including characteristics used to determine the presence and location of the OHWM, were collected and recorded on OHWM data sheets for Brush Creek, Alder Creek, and several other streams (Appendix E).

Approximately 500 feet west of the survey area, the Pacific Ocean is both a tidal non-wetland water and a navigable water. The boundary for tidal non-wetland waters (Pacific Ocean) was delineated at the high tide line (HTL) per Section 404 of the Clean Water Act. The boundary of navigable waters was delineated at the mean high water (MHW) per Section 10 of the Rivers and Harbors Act; Section 10 gives USACE regulatory and permitting authority over work in, over, or under navigable waters. A desktop jurisdictional analysis was conducted to map the upper elevation limits of tidal non-wetland waters and navigable waters in the survey area. The upper elevation limits of tidal non-wetland waters was estimated from the maximum predicted annual tide provided for the Arena Cove tidal station (Station ID: 9416841) in 2019 (National Oceanic and Atmospheric Administration 2019) The maximum predicted annual tide, which was used to estimate the HTL, was 7.5 feet above MSL. The Arena Cove Station is approximately 7.1 miles south of the CLP, which is the portion of the survey area closest to the Pacific Ocean. The upper elevation limits for navigable waters was established based on the MHW elevation of 5.2 feet above MSL reported for the Arena Cove Station (National Oceanic and Atmospheric Administration 2019). Topographic data were obtained from the U.S. Geological Survey (2017); the upper elevation limits of the HTL and MHW are depicted on Sheet 1 of Appendix A.

Methods and standards conform to the USACE San Francisco District's Information Requested for Verification of Corps Jurisdiction (U.S. Army Corps of Engineers, San Francisco District 2016) and Revised Map and Drawing Standards for the Pacific Division Regulatory Program Delineations (U.S. Army Corps of Engineers, South Pacific Division 2016).

**Delineation Methods for California Coastal Act Wetlands**

The survey area is within the Coastal Zone; the Mendocino County Coastal Development Permit Regulations (Chapter 20.532) regulates development in the Coastal Zone in accordance with the CCA. The CCC and associated Mendocino County Coastal Development Permit Regulations (Chapter 20.532) require coastal zone wetlands to have evidence of wetland hydrology in addition to one other wetland parameter regulated by USACE (County of Mendocino Planning & Building...
Services 2006; California Coastal Commission 2011). Data forms for CCA wetlands are in Appendix D, and their locations are shown on the maps in Appendix B. Initial interpretation of CCA features, as depicted on the data forms, considered all features with any one wetland parameter regulated by the USACE to be a CCA feature; however, the Mendocino County Department of Planning & Building Services memorandum (Wetland Exception – Ditches Memorandum) dated August 7, 2006, specifies that wetland hydrology must be present in addition to one other wetland parameter regulated by the USACE.
Chapter 4
Results

In total, 0.566 acre of potential waters of the United States were identified and mapped in the survey area, consisting of 0.101 acre of wetlands and 0.455 acre of non-wetland waters (Appendix A). The following waters of the United States were mapped in the survey area: emergent wetlands and non-wetland waters, comprised of perennial streams, intermittent streams, ephemeral streams, and roadside ditches.

CCA wetlands include all wetlands and non-wetland waters regulated by the USACE, excluding two roadside ditches that were excavated from uplands and only convey stormwater runoff (County of Mendocino Planning & Building Services 2006). As noted earlier, CCA wetlands must demonstrate evidence of wetland hydrology and one other feature regulated by the USACE. A total of 0.584 acre of CCA wetlands was delineated in the survey area (Appendix B). The following CCA wetlands were mapped in the survey area: emergent wetlands, seasonal wetlands, and riverine wetlands.

Appendices A and B depict the locations of aquatic features mapped in the survey area and the location of the sampling points, which correspond with the wetland dataforms in Appendix D. Appendix F includes representative photographs of mapped features, which are cross-referenced to the waters of the United States reported in Table 3 and CCA wetlands reported in Table 4. Appendix G includes a list of plants observed in the survey area, along with their scientific name, common name, and wetland indicator status (Lichvar et al. 2016).

U.S. Army Corps of Engineers Jurisdictional Features

In total, 0.566 acre of potential waters of the United States was identified and mapped in the survey area, comprising 0.101 acre of wetlands and 0.455 acre of non-wetland waters. These features consist of 9 emergent wetlands, 5 perennial streams, 4 intermittent streams, 2 ephemeral streams, 7 roadside ditches, and 12 culverts. There are some gaps in the numbering sequence of data forms. Described below, the types of wetland and non-wetland waters are listed in Table 3 and shown on the maps in Appendix A. The results and the mapped extent of delineated features depicted in Appendix A are subject to verification by the USACE, San Francisco District.
Table 3. Potential Clean Water Act Jurisdictional Features Mapped in the Survey Area

<table>
<thead>
<tr>
<th>Feature Type and Name</th>
<th>Clean Water Act Jurisdiction (acres)</th>
<th>Cowardin Typea</th>
<th>Average Width (feet)</th>
<th>Sampling Point Number</th>
<th>Photo Number</th>
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<td>0.006</td>
<td>PEM1</td>
<td>N/A</td>
<td>29, 30, 3</td>
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<tr>
<td>EW-2</td>
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<td>PEM1</td>
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<td>EW-3</td>
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<td>EW-4</td>
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<td><strong>Perennial Stream</strong></td>
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<td>PS-1</td>
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<td>IS-2b</td>
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### Roadside Ditch

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<tr>
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<td>–</td>
<td>10</td>
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<tr>
<td>D-3</td>
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<td>–</td>
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<tr>
<td>D-5</td>
<td>0.004</td>
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<td>–</td>
</tr>
<tr>
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<tr>
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<td><strong>Subtotal</strong></td>
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### Culverts

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<th>Average Width (feet)</th>
<th>Sampling Point Number</th>
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<td>–</td>
</tr>
<tr>
<td>C-2</td>
<td>0.003</td>
<td>R4SB3</td>
<td>3</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>C-3</td>
<td>0.003</td>
<td>R4SB3</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>C-4</td>
<td>0.003</td>
<td>R4SB3</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>C-5</td>
<td>0.002</td>
<td>R4SB3</td>
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<tr>
<td>C-6</td>
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<td>R4SB3</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>C-7</td>
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<td>C-8</td>
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<td>R4SB3</td>
<td>5</td>
<td>–</td>
<td>–</td>
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<td>C-9</td>
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<td>–</td>
</tr>
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<td>–</td>
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<tr>
<td><strong>Subtotal</strong></td>
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### Total U.S. Army Corps of Engineers Jurisdictional Features

<table>
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<tr>
<th>Jurisdictional Features</th>
<th>Jurisdiction (acres)</th>
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<tr>
<td><strong>Total</strong></td>
<td><strong>0.556</strong></td>
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</tbody>
</table>

---

*a Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

PEM1 = Palustrine, Emergent, Persistent.
R2UB1 = Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel.
R4SB3 = Riverine, Intermittent, Streambed, Cobble-Gravel.

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### Wetlands

Emergent wetlands were mapped in topographic lows in the CLP and ROW. A total of 0.101 acre of emergent wetlands was mapped in the survey area.

The following vegetation alliances were mapped as emergent wetlands in the survey area: slough sedge swards (*Carex obnupta* alliance), common velvet grass - sweet vernal grass meadows (*Holcus lanatus-Anthoxanthum odoratum* alliance), water-parsley marshes (*Oenanthe sarmentosa* alliance), a soft rush marsh (*Juncus effusus* alliance), a common monkey flower seep (*Erythranthe guttata* alliance), and a small-fruit bulrush marsh (*Scirpus microcarpus* alliance). Dominant species observed...
in the emergent wetlands of the survey area include the following: slough sedge (*Carex obnupta*; OBL), common velvet grass (*Holcus lanatus*; FAC), sweet vernal grass (*Anthoxanthum odoratum*; FACU), water-parsley (*Oenanthe sarmentosa*; OBL), soft rush (*Juncus effusus*; FACW), common monkey flower (*Erythranthe guttata*; OBL), and small-fruited bulrush (*Scirpus microcarpus*; OBL). The emergent wetlands were classified as PEM1: palustrine, persistent, emergent wetlands (Cowardin et al. 1979) because they are dominated by perennial, herbaceous hydrophytic plants.

Emergent wetlands mapped in the survey are characterized by the following sampling points: 6, 7, 10, 16, 21, 29, 30, 33, and 41; uplands adjacent to the emergent wetlands are characterized by sampling points: 8, 9, 17, 18, 22, 23, 31, 32, 34, 35, 36, and 42. Emergent wetland EW-9 (sampling point 21, Appendix D) occurs below the OHWM of a potential intermittent stream that was flowing into a culvert (C-4) at the time of the September survey; this feature was mapped as a wetland because it had 85 percent cover of hydrophytic plant species.

Soils observed in the emergent wetlands displayed hydric soil indicator Redox Dark Surface (Hydric Soil Indicator F6); soil textures were loam, gravelly-loam, clay-loam, clay and sandy-clay.

Emergent wetlands had the following primary wetland hydrology indicators: Sediment Deposits (Wetland Hydrology Indicator B2), Drift Deposits (wetland hydrology indicator B3), Algal Mat or Crust (B4), Surface Water (A1), High Water Table (A2), and Saturation (A3). The emergent wetlands had the following secondary wetland hydrology indicators: Water-Stained leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), FAC-Neutral Test (D5), Dry-Season Water Table (C2), and Saturation Visible on Aerial Imagery (C9).

Emergent wetlands EW-1 and EW-2 were presumed to be seasonally saturated and/or ponded but did not display wetland hydrology during the delineation surveys, which occurred during the dry-season (wetland hydrology in the western mountains, valleys and coast region can be naturally problematic when surveyed during the dry-season [U.S. Army Corps of Engineers 2010]). Described in sampling points 29 and 30, emergent wetland EW-1 occurs in a topographic depression on the CLP and was dominated by Pacific aster (*Symphyotrichum chilense*; FAC) and common velvet grass, and had hydric soils (Photograph 3, Appendix F). ICF botanists/wetland ecologists assumed that wetland hydrology was present during the rainy season, based on the presence of perennial hydrophytic plants in a topographic position that concentrates and ponds water. Upland sampling point 32, adjacent to EW-2, was dominated by FAC and FACU plants and did not have hydric soils. Also mapped on the CLP, emergent wetland EW-2 (sampling point 33) occurs downslope of EW-1 and demonstrated similar wetland indicators (dominance of hydrophytic vegetation and hydric soils); hydrology was assumed present during the wet-season. Located south of Kinney Road, EW-9 is dominated by perennial hydrophytic plants, had hydric soils (Redox Dark Surface), and wetland hydrology was assumed present during the rainy season (sampling point 41, Appendix D; Photograph 30, Appendix F).

---

1 Lichvar et al. 2016

OBL: Obligate wetland plants - almost always occur in wetlands.

FACW: Facultative wetland plants - usually occur in wetlands but may occur in non-wetlands.

FAC: Facultative wetland plants – occur in wetlands and non-wetlands.

FACU: Facultative upland plants - usually occur in non-wetlands but may occur in wetlands.

UPL: Upland plants – almost never occur in wetlands.
Non-Wetland Waters

Five types of non-wetland waters were mapped in the survey area: perennial stream, intermittent stream, ephemeral stream, roadside ditch, and culvert. The following OHMW characteristics were observed and used to determine the location of the OHWM: break-in slope, scour, the presence of bed and bank, sediment sorting, and changes in soil and vegetation. Unnamed Stream 2 did not surface in the survey area, and acreages are not reported. Ultimately, the non-wetland waters flow directly to the Pacific Ocean or are tributaries to streams that drain to the Pacific Ocean.

Perennial Streams

Alder Creek (PS-3) and Brush Creek (PS-4) are perennial streams that cross the survey area. Other perennial streams mapped in the survey area consist of PS-1, PS-2a and PS-2b, and Unnamed Stream 4 (PS-5a and PS-5b). Perennial streams flow year-round in a typical year. Groundwater is the main source of water, supplemented by rainwater during the wet season. The perennial streams are classified as R2UB1 (riverine, lower perennial, unconsolidated bottom, cobble-gravel) (Cowardin et al. 1979).

During the September survey, Alder Creek was flowing in the low-flow channel, and the substrate below the OHWM consisted of gravel and cobble (Photos 18 through 21, Appendix F). The canopy is dominated by red alder (*Alnus rubra*; FAC) and Sitka willow (*Salix sitchensis*; FACW). Observed OHWM characteristics were scour, sediment sorting, and changes in soil and vegetation. Alder Creek was on average 70 feet wide between OHWMs and covered 0.128 acre in the survey area.

Brush Creek was flowing during the September survey and supported a canopy of red alder and arroyo willow (*Salix lasiolepis*; FACW) (Photos 31 through 33, Appendix F). The perennial stream had a sharp break-in slope (> 60°) at the OHWM; below the OHWM, Brush Creek had two low-flow channels approximately 10 feet wide. ICF botanists/wetland ecologists observed the following OHWM characteristics in Brush Creek: shelving, scour, and sediment sorting, and changes in soil and vegetation. Brush Creek was on average 75 feet wide between OHWMs and covered 0.134 acre in the survey area.

Draining into a culvert south of Unnamed Stream 2, PS-1 and PS-2a converge on the eastside of SR 1 and drain westward into a culvert that feeds to PS-2b; all of the features had an average width of 2 feet.

Unnamed Stream 4 consists of PS-5a on the eastside of SR 1 flowing westward through a culvert to PS-5b (Photograph 34, Appendix F); the segments were on average 6 feet wide between OHWMs, and the canopy on the eastside of SR 1 was dominated by arroyo willow.

Intermittent Streams

Four intermittent streams, covering 0.057 acre, were mapped in the survey area, including Unnamed Stream 1 (IS-1), PS-2a and PS-2b, Unnamed Stream 3 (IS-3), and IS-4a and IS4b. Intermittent streams flow for a length of time each year, typically during the wet season, but dry up over the summer months. In addition to rain water, groundwater provides water for stream flow. The intermittent streams are classified as R4SB3 (riverine, intermittent, streambed, sand) (Cowardin et al. 1979). The intermittent streams are tributaries to streams that flow to the Pacific Ocean or flow directly to the Pacific Ocean.
Unnamed Stream 1 (IS-1) is 10 feet wide on average between OWHMs, and the canopy is dominated by arroyo willow (*Salix lasiolepis*; FACW), with a moderate (30°–60°) break-in slope at the OHWM. Unnamed Stream 1 did not surface on the west side of SR 1, which prevented full assessment of the feature.

Unnamed Stream 3 (IS-3) is 4 feet wide on average between OWHMs. The canopy is dominated by shining willow (*Salix lasiandra*; FACW) and Sitka willow. Intermittent streams IS-2a and IS-2b are tributaries to Unnamed Stream 3.

Intermittent stream IS-4a is on average 2 feet wide between OWHMs and parallels the south side of Kinney Road before draining through a culvert to IS-4b on the north side of Kinney Road; IS-4b is on average 2 feet wide between OHWMS.

**Ephemeral Streams**

The survey contained two ephemeral streams covering 0.015 acre. Ephemeral streams have flowing water during, and for a short time after, rainfall in a typical year. Rain water is the only source of water for stream flow in ephemeral streams, which are typically above the water table year-round. The vegetation on the banks of the ephemeral streams typically included California blackberry (*Rubus ursinus*; FACW), poison-oak (*Toxicodendron diversilobum*; FAC), and bracken fern (*Pteridium aquilinum var. pubescens*; FACU). The ephemeral streams are classified as R4SB3 (riverine, intermittent, streambed, sand) (Cowardin at al. 1979).

**Roadside ditches**

The survey area contains seven roadside ditches covering 0.057 acre. Roadside ditches were mapped if they had a distinct bed and bank or other OHWM characteristics, although sometimes the indicators were weak and discontinuous. The roadside ditches are classified as R4SB3 (riverine, intermittent, streambed, sand) (Cowardin at al. 1979). The roadside ditches drain into culverts, and ultimately flow to streams that are tributaries to the Pacific Ocean.

**Culverts**

Culverts in the survey area convey flows from stream segments and roadside ditches under SR 1. The flows are carried ultimately to the Pacific Ocean. Culverts are shown on the maps in Appendix A and are included in Table 3.

**California Coastal Commission Jurisdictional Features**

The following aquatic resources were mapped as potential CCA features: 9 emergent wetlands, 3 seasonal wetlands, and 28 riverine wetlands. The CCA wetlands delineated in the survey area are listed in Table 4 and depicted in Appendix B. The results and mapped extent of CCA wetlands depicted in Appendix B are subject to verification by the CCC North Coast District.
### Table 4. Potential California Coastal Act Jurisdictional Features Mapped in the Survey Area

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<th>CCC Jurisdiction (acres)</th>
<th>Cowardin Type(^a)</th>
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<th>Sampling Point Number</th>
<th>Photo Number</th>
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</table>
### Emergent Wetlands

In total, 0.101 acre of emergent wetlands was mapped as potential CCA features in the survey area. All emergent wetlands delineated as potential CCA features also were delineated as USACE jurisdictional features and are described above.

### Seasonal Wetlands

The seasonal wetlands mapped in the survey area were dominated by annual hydrophytic plants and the features were classified as PEM2: palustrine, non-persistent, emergent wetlands (Cowardin et al. 1979). These features were two-parameter wetlands. Three CCA seasonal wetlands were mapped for a total 0.036 acre.

---

<table>
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<tr>
<th>Feature Type and Name</th>
<th>CCC Jurisdiction (acres)</th>
<th>Cowardin Type $^a$</th>
<th>Average Width (feet)</th>
<th>Sampling Point Number</th>
<th>Photo Number</th>
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$^a$ Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

PEM1 = Palustrine, Emergent, Persistent.
PEM2 = Palustrine, Emergent, Non-persistent.
R2UB1 = Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel.
R4SB3 = Riverine, Intermittent, Streambed, Cobble-Gravel.
Two seasonal wetlands (SW-1 and SW-2) occur in a compacted, roadside pullout and were dominated by nonnative plants, hyssop loosestrife (*Lythrum hyssopifolium*; OBL) and prostrate knot weed (*Polygonum aviculare*; FAC). Seasonal wetlands SW-1 and SW-2 are approximately 252 feet apart and are characterized by sampling point 2. Surface Soils Cracks (B6) was the Wetland Hydrology Indicator observed by ICF botanists/wetland ecologists in SW-1 and SW-2.

Seasonal wetland SW-3 (sampling point 44) was mapped in a topographic depression in the ROW, but most of the feature occurred in private property east and outside of the survey area. In the survey area, SW-3 was dominated by native hydrophytic coast allocarya (*Plagiobothrys undulatus*; OBL) and nonnative, upland slender lotus (*Lotus angustissimus*; UPL). Coast allocarya was dominant during the wet season, based on the presence of significant cover of dead coast allocarya plants; slender lotus invaded the feature during the dry-season. The seasonal wetland did not have hydric soils. Seasonal wetland SW-3 had the following secondary wetland indicators: water-stained leaves, (B9), saturation visible on aerial imagery (C9), and FAC-neutral test (D5). In the private property adjacent to the survey area and SW-3, the seasonal wetland likely supported hydric soils.

**Riverine Wetlands**

Riverine wetlands occur below the OWHM of the USACE jurisdictional streams and ditches discussed above. Two roadside ditches delineated as non-wetland waters under potential jurisdiction of the U.S. Army Corps of Engineers (D-6 and D-7) were not classified as coastal zone wetlands because the features were excavated from upland areas and carry only stormwater runoff. These were excluded per the Wetland Exception – Ditches Memorandum (County of Mendocino Planning & Building Services 2006). Riverine wetlands delineated as potential CCA features in the survey area totaled 0.455 acre.
Chapter 5

References Cited


Legend

- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations

Features Outside Survey Area

Aquatic Resources (0.556 Total Acre)

- Emergent Wetland (EW) (0.101 ac.)

Non-Wetland Waters (0.455 Total Acre)

- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.057 ac.)
- Culvert (C) (0.040 ac.)

Section 10 Navigable Waters Upper Elevational Limit (Mean High Water):
5.2 ft ± 1.5 ft (USGS 2017)

Section 404/401 Tidal Waters Upper Elevational Limit (High Tide Line):
7.5 ft ± 1.5 ft (USGS 2017)

Notes:
Base Map Source: ICF
Elevation Data: U.S. Geological Survey, 20190831, USGS NED one meter x4y432 CA FEMA R9
Mendocino HF 2017
Imagery Source: NAIP 2016
USGS Topo Quad: Mallo Pass Creek and Point Arena

Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier
Manchester Subsea Cables Project
February 19th, 2019
Sheet 2 of 12

Legend
- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations
- Features Outside Survey Area

Aquatic Resources (0.556 Total Acre)
- Wetland (0.101 Total Acre)
- Emergent Wetland (EW) (0.101 ac.)

Non-Wetland Waters (0.455 Total Acre)
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.057 ac.)
- Culvert (C) (0.040 ac.)

*Feature does not surface in BSA

Notes:
Base Map Source: ICF
Elevation Data: U.S. Geological Survey, 20190831, USGS NED one meter x44y432 CA FEMA R9, Mendocino HF 2017
Imagery Source: NAIP 2016
Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier

Appendix A
Waters of the United States Delineation Map
Legend

Survey Area (48 Acres)
Area Without Access
Cable Landing Stations (CLS)
Data Point
Photo Locations
Features Outside Survey Area
Aquatic Resources (0.556 Total Acre)
Wetland (0.101 Total Acre)
Emergent Wetland (EW) (0.101 ac.)
Non-Wetland Waters (0.455 Total Acre)
Perennial Stream (PS) (0.286 ac.)
Intermittent Stream (IS) (0.057 ac.)
Ephemeral Stream (ES) (0.015 ac.)
Roadside Ditch (D) (0.057 ac.)
Culvert (C) (0.040 ac.)

Notes:
Base Map Source: ICF
Elevation Data: U.S. Geological Survey, 20190831, USGS NED one meter x44y432 CA FEMA R9
Mendocino HF 2017
Imagery Source: NAIP 2016
Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier

Manchester Subsea Cables Project
February 19th, 2019
Sheet 8 of 12

Appendix A
Waters of the United States Delineation Map
Manchester Subsea Cables Project  
February 19th, 2019  
Sheet 10 of 12

Legend

- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations
- Features Outside Survey Area

Aquatic Resources (0.556 Total Acre)
- Wetland (0.101 Total Acre)
  - Emergent Wetland (EW) (0.101 ac.)

Non-Wetland Waters (0.455 Total Acre)
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.057 ac.)
- Culvert (C) (0.040 ac.)

Notes:
- Base Map Source: ICF
- Elevation Data: U.S. Geological Survey, 20190831, USGS NED one meter x44y432 CA FEMA R9, Mendocino HF 2017
- Imagery Source: NAIP 2016
- Prepared By: ICF 916.737.3000
- Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
- Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
- Drawn By: A. Angier

Appendix A
Waters of the United States Delineation Map
Legend

- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations

Features Outside Survey Area

Aquatic Resources (0.556 Total Acre)

- Wetland (0.101 Total Acre)
  - Emergent Wetland (EW) (0.101 ac.)

Non-Wetland Waters (0.455 Total Acre)

- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.057 ac.)
- Culvert (C) (0.040 ac.)

W = Average Width

Notes:

Base Map Source: ICF
Elevation Data: U.S. Geological Survey, 20190831, USGS NED one meter x43y433 CA FEMA R9
Mendocino HF 2017
Imagery Source: NAIP 2016
USGS Topo Quad: Mallo Pass Creek and Point Arena
Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier

Appendix A
Waters of the United States Delineation Map
Appendix B

California Coastal Act Waters Delineation Map
Appendix B

California Coastal Act Waters Delineation Map

Legend
- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations
- Features Outside Survey Area

California Coastal Act Wetlands (0.384 Total Acre)
- Emergent Wetland (EW) (0.101 ac.)
- Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

Notes:
- Base Map Source: ICF
- Imagery Source: NAIP 2016
- USGS Topo Quad: Miao Pass Creek and Point Arena
- Prepared By: ICF 916.737.3000
- Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
- Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
- Drawn By: A. Angier
Appendix B
California Coastal Act Waters Delineation Map
Manchester Subsea Cables Project
February 19th, 2019
Sheet 5 of 12

Legend
- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations
- Features Outside Survey Area

California Coastal Act Wetlands (0.384 Total Acre)
- Emergent Wetland (EW) (0.101 ac.)
- Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

Notes:
Base Map Source: ICF
Imagery Source: NAIP 2016
USGS Topo Quad: Mallo Pass Creek and Point Arena

Prepared By: ICF 916.737.3000
Delineated By: D. Jakard, M. Wilder, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier

Appendix B
California Coastal Act Waters Delineation Map
Appendix B

California Coastal Act Waters Delineation Map

Legend

- Survey Area (48 Acres)
- Area Without Access
- + = Cable Landing Stations (CLS)
- ▲ = Data Point
- Photo Locations
- Features Outside Survey Area

California Coastal Act Wetlands (0.384 Total Acre)
- Emergent Wetland (EW) (0.101 ac.)
- Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

Notes:
Base Map Source: ICF
Imagery Source: NAIP 2016
USGS Topo Quad: Mallo Pass Creek and Point Arena
Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier
Manchester Subsea Cables Project
February 19th, 2019
Sheet 9 of 12

Legend
- Survey Area (48 Acres)
- Area Without Access
- = = = Cable Landing Stations (CLS)
- Data Point
- Photo Locations
- = = = Features Outside Survey Area

California Coastal Act Wetlands
(0.384 Total Acre)
- Emergent Wetland (EW) (0.101 ac.)
- Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

Notes:
Base Map Source: ICF
Imagery Source: NAIP 2016
USGS Topo Quad: Malo Pass Creek and Point Arena

Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier

Appendix B
California Coastal Act Waters Delineation Map
Private CLS Protocol-delineation will be conducted in 2019 and memo prepared.
Legend

- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations

Features Outside Survey Area

California Coastal Act Wetlands (0.384 Total Acre)

- Emergent Wetland (EW) (0.101 ac.)
- Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands

- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

W = Average Width

Notes:

Base Map Source: ICF
Imagery Source: NAIP 2016
USGS Topo Quad: Mallo Pass Creek and Point Arena

Prepared By: ICF 916.737.3000
Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
Drawn By: A. Angier
Appendix B
California Coastal Act Waters Delineation Map

Legend
- Survey Area (48 Acres)
- Area Without Access
- Cable Landing Stations (CLS)
- Data Point
- Photo Locations

Features Outside Survey Area
- California Coastal Act Wetlands (0.384 Total Acre)
  - Emergent Wetland (EW) (0.101 ac.)
  - Seasonal Wetland (SW) (0.036 ac.)

Riverine Wetlands
- Perennial Stream (PS) (0.286 ac.)
- Intermittent Stream (IS) (0.057 ac.)
- Ephemeral Stream (ES) (0.015 ac.)
- Roadside Ditch (D) (0.049 ac.)
- Culvert (C) (0.040 ac.)

Notes:
- Base Map Source: ICF
- Imagery Source: NAIP 2016
- USGS Topo Quad: Mallo Pass Creek and Point Arena
- Prepared By: ICF 916.737.3000
- Delineated By: D. Jokerst, M. Widdowson, S. Spooner and J. Mayor
- Delineation Date: June 26-28, Sept. 29-31 and Oct. 10-12, 2018
- Drawn By: A. Angier

Manchester Subsea Cables Project
February 19th, 2019
Sheet 12 of 12
Appendix C
Supporting Information
(Custom Soil Resource Report
National Wetlands Inventory Map)
Custom Soil Resource Report for Mendocino County, Western Part, California
RTI Manchester Subsea Fiber Project

October 30, 2018
Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil
scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.
Custom Soil Resource Report
Soil Map

Map Scale: 1:33,900 if printed on A portrait (8.5" x 11") sheet.

Map projection: Web Mercator   Corner coordinates: WGS84   Edge tics: UTM Zone 10N WGS84
Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Western Part, California

Survey Area Data: Version 13, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
## Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Biaggi loam, 0 to 5 percent slopes</td>
<td>14.9</td>
<td>6.1%</td>
</tr>
<tr>
<td>117</td>
<td>Cabrillo-Heeser complex, 0 to 5 percent slopes</td>
<td>8.9</td>
<td>3.6%</td>
</tr>
<tr>
<td>126</td>
<td>Coastal beaches</td>
<td>4.6</td>
<td>1.9%</td>
</tr>
<tr>
<td>132</td>
<td>Crispin loam, 0 to 5 percent slopes</td>
<td>97.4</td>
<td>39.8%</td>
</tr>
<tr>
<td>138</td>
<td>Duneland</td>
<td>2.7</td>
<td>1.1%</td>
</tr>
<tr>
<td>139</td>
<td>Dystropepts, 30 to 75 percent slopes</td>
<td>27.7</td>
<td>11.3%</td>
</tr>
<tr>
<td>144</td>
<td>Flumeville clay loam, 0 to 5 percent slopes</td>
<td>11.0</td>
<td>4.5%</td>
</tr>
<tr>
<td>145</td>
<td>Flumeville clay loam, 5 to 15 percent slopes</td>
<td>9.1</td>
<td>3.7%</td>
</tr>
<tr>
<td>182</td>
<td>Mallopass loam, 0 to 5 percent slopes</td>
<td>18.6</td>
<td>7.6%</td>
</tr>
<tr>
<td>209</td>
<td>Stornetta fine sandy loam, 0 to 2 percent slopes</td>
<td>20.9</td>
<td>8.6%</td>
</tr>
<tr>
<td>214</td>
<td>Tropaquepts, 0 to 15 percent slopes</td>
<td>10.3</td>
<td>4.2%</td>
</tr>
<tr>
<td>225</td>
<td>Windyhollow loam, 0 to 5 percent slopes</td>
<td>18.6</td>
<td>7.6%</td>
</tr>
<tr>
<td></td>
<td><strong>Totals for Area of Interest</strong></td>
<td><strong>244.6</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called...
noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can
be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.
Mendocino County, Western Part, California

105—Biaggi loam, 0 to 5 percent slopes

Map Unit Setting

- National map unit symbol: hmk1
- Elevation: 100 to 400 feet
- Mean annual precipitation: 35 to 45 inches
- Mean annual air temperature: 45 to 57 degrees F
- Frost-free period: 250 to 330 days
- Farmland classification: Farmland of statewide importance

Map Unit Composition

- Biaggi and similar soils: 80 percent
- Minor components: 20 percent
- Estimates are based on observations, descriptions, and transects of the map unit.

Description of Biaggi

Setting

- Landform: Marine terraces
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Residuum weathered from sandstone and shale

Typical profile

- H1 - 0 to 23 inches: loam
- H2 - 23 to 27 inches: unweathered bedrock

Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: 20 to 40 inches to lithic bedrock
- Natural drainage class: Well drained
- Runoff class: Low
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

- Land capability classification (irrigated): 3e
- Land capability classification (nonirrigated): 3e
- Hydrologic Soil Group: C
- Ecological site: Loamy Terrace (Perennial Grass) (R004XB059CA)
- Hydric soil rating: No

Minor Components

Heeser

- Percent of map unit: 3 percent
- Hydric soil rating: No
Flumeville
  Percent of map unit: 3 percent
  Landform: Marine terraces
  Hydric soil rating: Yes

Cabrillo
  Percent of map unit: 3 percent
  Hydric soil rating: No

Crispin
  Percent of map unit: 3 percent
  Hydric soil rating: No

Mallopass
  Percent of map unit: 3 percent
  Hydric soil rating: No

Windyhollow
  Percent of map unit: 3 percent
  Hydric soil rating: No

Unnamed, gentler or steeper slopes
  Percent of map unit: 2 percent
  Hydric soil rating: No

117—Cabrillo-Heeser complex, 0 to 5 percent slopes

Map Unit Setting
  National map unit symbol: hmkm
  Elevation: 20 to 240 feet
  Mean annual precipitation: 35 to 45 inches
  Mean annual air temperature: 48 to 57 degrees F
  Frost-free period: 250 to 330 days
  Farmland classification: Prime farmland if irrigated

Map Unit Composition
  Cabrillo and similar soils: 50 percent
  Heeser and similar soils: 30 percent
  Minor components: 20 percent
  Estimates are based on observations, descriptions, and transects of the map unit.

Description of Cabrillo

Setting
  Landform: Marine terraces
  Landform position (two-dimensional): Backslope
  Landform position (three-dimensional): Tread
  Down-slope shape: Linear
  Across-slope shape: Linear
  Parent material: Fluviomarine deposits derived from sandstone
Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 35 inches: sandy clay loam
H3 - 35 to 50 inches: sandy clay loam
H4 - 50 to 60 inches: sandy loam

Properties and qualities
Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups
Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: Sandy Loam Terrace (Perennial Grass) (R004XB060CA)
Hydric soil rating: No

Description of Heeser

Setting
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile
H1 - 0 to 34 inches: sandy loam
H2 - 34 to 65 inches: sandy loam

Properties and qualities
Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: Sandy Loam Terrace (Perennial Grass) (R004XB060CA)
Hydric soil rating: No
Minor Components

Biaggi
Percent of map unit: 5 percent
Hydric soil rating: No

Crispin
Percent of map unit: 5 percent
Hydric soil rating: No

Sirdrak
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, gentler or steeper slopes
Percent of map unit: 3 percent
Hydric soil rating: No

Tropaquepts
Percent of map unit: 3 percent
Landform: Marine terraces
Hydric soil rating: Yes

126—Coastal beaches

Map Unit Composition
Coastal beaches: 100 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Coastal Beaches

Setting
Landform: Beaches
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Beach sand derived from sandstone

132—Crispin loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: hml9
Elevation: 20 to 240 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Crispin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crispin

Setting
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from igneous, metamorphic and sedimentary rock

Typical profile
H1 - 0 to 14 inches: loam
H2 - 14 to 23 inches: loam
H3 - 23 to 62 inches: weathered bedrock

Properties and qualities
Slope: 0 to 5 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: Sandy Loam Terrace (Perennial Grass) (R004XB060CA)
Hydric soil rating: No

Minor Components

Flumeville
Percent of map unit: 3 percent
Landform: Marine terraces
Hydric soil rating: Yes

Biaggi
Percent of map unit: 3 percent
Hydric soil rating: No

Cabrillo
Percent of map unit: 3 percent
Hydric soil rating: No
Mallopass
Percent of map unit: 2 percent
Hydric soil rating: No

Windyhollow
Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, gentler or steeper slopes
Percent of map unit: 2 percent
Hydric soil rating: No

138—Duneland

Map Unit Composition
Duneland: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Duneland
Setting
Landform: Beaches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands derived from sandstone

Minor Components
Tropaquepts
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Sirdrak
Percent of map unit: 5 percent
Hydric soil rating: No

139—Dystropepts, 30 to 75 percent slopes

Map Unit Composition
Dystropepts and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.
Description of Dystropepts

Setting
- Landform: Marine terraces
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Riser
- Down-slope shape: Concave
- Across-slope shape: Convex
- Parent material: Residuum weathered from sandstone and shale

Properties and qualities
- Slope: 30 to 75 percent
- Depth to restrictive feature: More than 80 inches
- Runoff class: High
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None

Minor Components

Abalobadiah
- Percent of map unit: 5 percent
- Hydric soil rating: No

Vizcaino
- Percent of map unit: 5 percent
- Hydric soil rating: No

Rock outcrop
- Percent of map unit: 5 percent
- Hydric soil rating: No

Unnamed, gentler or steeper slopes
- Percent of map unit: 5 percent
- Hydric soil rating: No

Unnamed, talus
- Percent of map unit: 5 percent
- Hydric soil rating: No

144—Flumeville clay loam, 0 to 5 percent slopes

Map Unit Setting
- National map unit symbol: hmlt
- Elevation: 10 to 1,200 feet
- Mean annual precipitation: 35 to 45 inches
- Mean annual air temperature: 52 to 54 degrees F
- Frost-free period: 250 to 330 days
- Farmland classification: Farmland of statewide importance

Map Unit Composition
- Flumeville and similar soils: 85 percent
- Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Flumeville

Setting

- Landform: Marine terraces
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

- H1 - 0 to 11 inches: clay loam
- H2 - 11 to 62 inches: clay loam

Properties and qualities

- Slope: 0 to 5 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Poorly drained
- Runoff class: Very high
- Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
- Depth to water table: About 12 to 30 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water storage in profile: High (about 9.4 inches)

Interpretive groups

- Land capability classification (irrigated): 2w
- Land capability classification (nonirrigated): 3w
- Hydrologic Soil Group: D
- Ecological site: Semiwet Meadow (Perennial Grass) (R004XB061CA)
- Hydric soil rating: Yes

Minor Components

Tropaquepts

- Percent of map unit: 4 percent
- Landform: Depressions
- Hydric soil rating: Yes

Windyhollow

- Percent of map unit: 4 percent
- Hydric soil rating: No

Cabrillo

- Percent of map unit: 4 percent
- Hydric soil rating: No

Unnamed, steeper slopes

- Percent of map unit: 3 percent
- Hydric soil rating: No
145—Flumeville clay loam, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hmlv
Elevation: 10 to 1,200 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Flumeville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flumeville

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

H1 - 0 to 11 inches: clay loam
H2 - 11 to 62 inches: clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: Semiwet Meadow (Perennial Grass) (R004XB061CA)
Hydric soil rating: Yes
Minor Components

Tropaquepts
Percent of map unit: 4 percent
Landform: Drainageways
Hydric soil rating: Yes

Cabrillo
Percent of map unit: 4 percent
Hydric soil rating: No

Windyhollow
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, gentler or steeper slopes
Percent of map unit: 3 percent
Hydric soil rating: No

182—Mallopass loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: hmnf
Elevation: 50 to 800 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Mallopass and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Mallopass

Setting
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile
H1 - 0 to 14 inches: loam
H2 - 14 to 34 inches: clay loam
H3 - 34 to 62 inches: gravelly sandy clay loam
Properties and qualities

- **Slope:** 0 to 5 percent
- **Depth to restrictive feature:** More than 80 inches
- **Natural drainage class:** Moderately well drained
- **Runoff class:** Medium
- **Capacity of the most limiting layer to transmit water (Ksat):** Moderately high (0.20 to 0.60 in/hr)
- **Depth to water table:** About 48 to 72 inches
- **Frequency of flooding:** None
- **Frequency of ponding:** None
- **Available water storage in profile:** High (about 9.1 inches)

Interpretive groups

- **Land capability classification (irrigated):** 2e
- **Land capability classification (nonirrigated):** 3e
- **Hydrologic Soil Group:** C
- **Ecological site:** Loamy Terrace (Perennial Grass) (R004XB059CA)
- **Hydric soil rating:** No

Minor Components

- **Biaggi**
  - **Percent of map unit:** 3 percent
  - **Hydric soil rating:** No

- **Windyhollow**
  - **Percent of map unit:** 3 percent
  - **Hydric soil rating:** No

- **Crispin**
  - **Percent of map unit:** 3 percent
  - **Hydric soil rating:** No

- **Flumeville**
  - **Percent of map unit:** 2 percent
  - **Landform:** Marine terraces
  - **Hydric soil rating:** Yes

- **Tropaquepts**
  - **Percent of map unit:** 2 percent
  - **Landform:** Depressions
  - **Hydric soil rating:** Yes

- **Unnamed, steeper slopes**
  - **Percent of map unit:** 2 percent
  - **Hydric soil rating:** No

209—Stornetta fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

- **National map unit symbol:** hmpf
- **Elevation:** 10 to 100 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Prime farmland if irrigated and either protected from flooding
or not frequently flooded during the growing season

Map Unit Composition
- Stornetta and similar soils: 85 percent
- Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stornetta

Setting
- Landform: Flood plains
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile
- H1 - 0 to 2 inches: fine sandy loam
- H2 - 2 to 62 inches: stratified fine sandy loam to silt loam

Properties and qualities
- Slope: 0 to 2 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Moderately well drained
- Runoff class: Low
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: About 0 inches
- Frequency of flooding: Frequent
- Frequency of ponding: None
- Available water storage in profile: High (about 10.1 inches)

Interpretive groups
- Land capability classification (irrigated): 4w
- Land capability classification (nonirrigated): 4w
- Hydrologic Soil Group: B/D
- Hydric soil rating: Yes

Minor Components

Riverwash
- Percent of map unit: 5 percent
- Landform: Channels
- Hydric soil rating: Yes

Tropaquepts
- Percent of map unit: 5 percent
- Landform: Depressions
- Hydric soil rating: Yes

Unnamed, flood plain
- Percent of map unit: 5 percent
Hydric soil rating: No

214—Tropaquepts, 0 to 15 percent slopes

Map Unit Composition
Tropaquepts and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tropaquepts

Setting
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Properties and qualities
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Tregoning
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Shinglemill
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Aborigine
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Blacklock
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes
225—Windyhollow loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: hmq4
Mean annual precipitation: 40 inches
Mean annual air temperature: 54 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Windyhollow and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Windyhollow

Setting
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile
H1 - 0 to 16 inches: loam
H2 - 16 to 24 inches: clay loam
H3 - 24 to 43 inches: gravelly clay loam
H4 - 43 to 61 inches: clay loam

Properties and qualities
Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.3 inches)

Interpretive groups
Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: Loamy Terrace (Perennial Grass) (R004XB059CA)
Hydric soil rating: No
Minor Components

Flumeville
Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

Mallopass
Percent of map unit: 4 percent
Hydric soil rating: No

Biaggi
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, steeper slopes
Percent of map unit: 3 percent
Hydric soil rating: No
References


Manchester Subsea Fiber Project

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov

Wetlands
- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Estuarine and Marine Wetland
- Lake
- Other
- Riverine

December 6, 2018

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper.
Appendix D

Routine Wetland Determination Data Forms
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester, Mendocino  
**Sampling Date:** 6/26/2018

**Applicant/Owner:** RTI  
**State:** CA  
**Sampling Point:**

**Investigator(s):** D. Jokerst, M. Widdowson  
**Section, Township, Range:**

**Landform (hillside, terrace, etc.):** coastal bluff  
**Local relief (concave, convex, none):** none  
**Slope (%):** 0

**Subregion (LRR):** A  
**Lat:**  
**Long:**  
**Datum:** 0

**Soil Map Unit Name:** 225-Windy Hollow, 0-5% Slope

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes  
**Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?**  
**Are *Normal Circumstances* present?** Yes  
**Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?** 

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Very shallow depression on coastal terrace with *Holcus lanatus* 60-dominant

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _____)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _____)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' radius)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Holcus lanatus</em></td>
<td>35 Y FAC</td>
</tr>
<tr>
<td>2. <em>Plantago lanceolata</em></td>
<td>40 Y UPL</td>
</tr>
<tr>
<td>3. <em>Hookeria californica</em></td>
<td>3 N UPL</td>
</tr>
<tr>
<td>4. <em>Juniperus osteosperma</em></td>
<td>5 N FACU</td>
</tr>
<tr>
<td>5. <em>Eschscholtzia californica</em></td>
<td>2 N UPL</td>
</tr>
<tr>
<td>6. <em>Stachys rigida</em></td>
<td>5 N FACU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 20' radius)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Rubus ursinus</em></td>
<td>20 Y FACU</td>
</tr>
<tr>
<td>2. <em>Loniceria hystrix</em></td>
<td>20 N FAC</td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum | 10 |

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5</td>
</tr>
<tr>
<td>Column Totals</td>
<td></td>
</tr>
</tbody>
</table>

**Prevalence Index = B/A =**

**Hydrophytic Vegetation Indicators:**

1. Rapid *test for Hydrophytic Vegetation*
2. Dominance Test is >50%  
3. Prevalence Index is ≤3.0  
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)  
5. Wetland Non-Vascular Plants¹  
6. Problematic Hydrophytic Vegetation¹ (Explain)  

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  
No

**Remarks:**

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>%</th>
<th>Redox Features Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>1048 2/3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.) | Indicators for Problematic Hydric Soils:
---|---
- Histisol (A1) | Sandy Redox (S5)
- Histic Epipedon (A2) | Stripped Matrix (S6)
- Black Histic (A3) | Loamy Mucky Mineral (F1) (except MLRA 1)
- Hydrogen Sulfide (A4) | Loamy Gleyed Matrix (F2)
- Depleted Below Dark Surface (A11) | Depleted Matrix (F3)
- Thick Dark Surface (A12) | Redox Dark Surface (F6)
- Sandy Mucky Mineral (S1) | Depleted Dark Surface (F7)
- Sandy Gleyed Matrix (S4) | Redox Depressions (F8)

**Restrictive Layer (if present):**
- Type: 
- Depth (inches): 

*Hydric Soil Present?* Yes [ ] No [X]

**Remarks:**

---

**HYDROLOGY**

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply)**
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required)**
- Water-Stained Leaves (B9) (MLRA 1, 2, 3, 4, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C3)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- **Surface Water Present?** Yes [ ] No [X] Depth (inches): 
- **Water Table Present?** Yes [ ] No [X] Depth (inches): 
- **Saturation Present?** Yes [ ] No [X] Depth (inches): 

*Wetland Hydrology Present?* Yes [ ] No [X]

**Remarks:**

*No indicators*
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester, Mendocino
Sampling Date: 6/26/2018
Applicant/Owner: D. Jokerst, M. Widdowson
Investigator(s): D. Jokerst, M. Widdowson
Section, Township, Range: 
Landform (hillslope, terrace, etc.): Coastal bluff
Local relief (concave, convex, none): Concave
Slope (%): 0
Subregion (LRR): A
Lat: 
Long: 
Datum: 
Soil Map Unit Name: 132 - Cropland O - 5" slope
NWI classification: 
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No 
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No 
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? 

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ✓ No</th>
<th>Wetland Hydrology Present?</th>
<th>Yes ✓ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ✓ No</th>
</tr>
</thead>
</table>

Remarks:
Small seasonal wetland is scrape at end of pull out, clearly delineates by berm on 3 sides.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 2 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>(A)</td>
</tr>
<tr>
<td></td>
<td>(B)</td>
</tr>
</tbody>
</table>

Prevalence Index = (A) / (B) = 

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation
   2 - Dominance Test is >50%
   3 - Prevalence Index is ≥3.0
   4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
   5 - Wetland Non-Vascular Plants
   6 - Problematic Hydrophytic Vegetation (Explain)

% Bare Ground in Herb Stratum 40

Remarks:
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR2/2</td>
<td>100</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hydric Soil Present? Yes __ No ___

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturated Visible on Aerial Imagery (C9)
- Gsomatic Position (D2)
- Shallower Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes __ No _
- Water Table Present? Yes __ No _
- Saturation Present? Yes __ No _
  (includes capillary fringe)

Depth (inches):

- Wetland Hydrology Present? Yes _
- No _

Remarks: Shovel refusal at 4 under-compacted gravel. Soil is fill.

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester, Mendocino  
Sampling Date: 6/26

Investigator(s): D. Jokerst, M. Widdowson  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): bank  
Local relief (concave, convex, none): none  
Slope (%): 4

Subregion (LRR): A  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 182 - Cso up. loam, C-59  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☐ No ☑  
Are "Normal Circumstances" present? Yes ☑ No ☐  
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No ☐</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No ☑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No ☑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: 
Berm at back of pullout at edge of Seasonal wetland - CZ only paired with sampling point 2.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' radius)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rumex acetosella</td>
<td>30 Y FACU</td>
</tr>
<tr>
<td>2. Centaurea nigra</td>
<td>5 N FACU</td>
</tr>
<tr>
<td>3. Calaminaria vulgaris</td>
<td>2 N FACU</td>
</tr>
<tr>
<td>4. Stachys rigida</td>
<td>25 Y FACW</td>
</tr>
<tr>
<td>5. Plantago lanceolata</td>
<td>10 N FACU</td>
</tr>
<tr>
<td>6. Erigeron minor</td>
<td>1 N FACU</td>
</tr>
<tr>
<td>7. Eschscholzia californica</td>
<td>25 Y WPL</td>
</tr>
<tr>
<td>8. Leucanthemum vulgare</td>
<td>3 N FACU</td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1
Total Number of Dominant Species Across All Strata: 3
Percent of Dominant Species That Are OBL, FACW, or FAC: 23

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species x 1 =
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐
### Soil Profile Description

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 18</td>
<td>10YR 2/2</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2. Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators

- Historic (A1)
- Histic Epepidon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Sandy Redox (S5)
Stripped Matrix (S6)
Loamy Mucky Mineral (F1) (except MLRA 1)
Loamy Gleyed Matrix (F2)
Depleted Matrix (F3)
Redox Dark Surface (F6)
Depleted Dark Surface (F7)
Redox Depressions (F8)

### Restrictive Layer (If present):

- Type: 
- Depth (inches): 

Hydric Soil Present? Yes [ ] No [X]

### Remarks:

---

### Hydrology

#### Wetland Hydrology Indicators

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

#### Field Observations:

- Surface Water Present? Yes [ ] No [X]
- Depth (inches): none to 18
- Water Table Present? Yes [ ] No [X]
- Depth (inches): none to 18
- Saturation Present? Yes [ ] No [X]
  (includes capillary fringe)

Wetland Hydrology Present? Yes [ ] No [X]

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

Remarks:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester, Mendocino
Sampling Date: 6/26/2018
Applicant/Owner: RTI
City: Manchester
State: CA
Sampling Point: 4

Investigator(s): D. Jokerst, M. Widdowson
Section, Township, Range:
Landform (hillslope, terrace, etc.): Swale in coastal plain. Relief (concave, convex, none): Concave
Subregion (LRR): A
Lat: Long:
Datum:

Soil Map Unit Name: 122 - Gravelly loam, 0-5% slopes

Are climatic / hydrologic conditions on the site typical for this time of year? Yes √ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes √ No
Are "Normal Circumstances" present? Yes √ No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes √ No</th>
<th>Is the Sample Area within a Wetland?</th>
<th>Yes √ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes √ No</td>
<td>Is the Sample Area within a Wetland?</td>
<td>Yes √ No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes √ No</td>
<td>Is the Sample Area within a Wetland?</td>
<td>Yes √ No</td>
</tr>
</tbody>
</table>

Remarks:
Depressional feature along fence line

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: __________)</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species? Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: __________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 8' x 2')</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Helianthus leucanthus</td>
<td>50 Y FAC</td>
</tr>
<tr>
<td>2. Euphorbia maxima</td>
<td>10 N UPL</td>
</tr>
<tr>
<td>3. Psilocybe californica</td>
<td>3 N UPL</td>
</tr>
<tr>
<td>4. Artemisia absinthia</td>
<td>2 N UPL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 4' x 10')</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus semperflorens</td>
<td>70 Y FAC</td>
</tr>
<tr>
<td>2. Rubus viscosus</td>
<td>10 N FACU</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum: 35

Remarks:

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants¹

¹Indicators of hydrolic soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes √ No
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-16</td>
<td>10½</td>
<td>3/12</td>
<td>10D</td>
<td>gyaban 1st of cobble</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sandy Redox (S5)</td>
</tr>
<tr>
<td>Histic Epipedon (A2)</td>
<td>Stripped Matrix (S6)</td>
</tr>
<tr>
<td>Black Histic (A3)</td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
</tr>
<tr>
<td>Hydrogen Sulfide (A4)</td>
<td>Loamy Gleyed Matrix (F2)</td>
</tr>
<tr>
<td>Depleted Below Dark Surface (A11)</td>
<td>Depleted Matrix (F3)</td>
</tr>
<tr>
<td>Thick Dark Surface (A12)</td>
<td>Redox Dark Surface (F6)</td>
</tr>
<tr>
<td>Sandy Mucky Mineral (S1)</td>
<td>Depleted Dark Surface (F7)</td>
</tr>
<tr>
<td>Sandy Gleyed Matrix (S4)</td>
<td>Redox Depressions (F8)</td>
</tr>
</tbody>
</table>

Indicators for Problematic Hydric Soils:

<table>
<thead>
<tr>
<th>Type</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 cm Muck (A10)</td>
<td>Red Parent Material (TF2)</td>
</tr>
<tr>
<td>Very Shallow Dark Surface (TF12)</td>
<td>Other (Explain in Remarks)</td>
</tr>
</tbody>
</table>

Hydric Soil Present? Yes No X

### HYDROLOGY

Primary Indicators (minimum of one required: check all that apply)

<table>
<thead>
<tr>
<th>Type</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Salt Crust (B11)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Frost-Heave Hummocks (D7)</td>
</tr>
</tbody>
</table>

Secondary Indicators (2 or more required)

<table>
<thead>
<tr>
<th>Type</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>Dry-Season Water Table (C2)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
</tr>
<tr>
<td>Geomorphic Position (D2)</td>
<td>Shallow Aquitard (D3)</td>
</tr>
<tr>
<td>FAC-Neutral Test (D5)</td>
<td>Raised Ant Mounds (D6) (LRR A)</td>
</tr>
</tbody>
</table>

Field Observations:

- Surface Water Present? Yes No X Depth (inches): 16
- Water Table Present? Yes No X Depth (inches): 16
- Saturation Present? Yes No X Depth (inches): 16

Wetland Hydrology Present? Yes No X

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

Remarks:

No Hydrology Indicators
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester, Mendocino
Sampling Date: 6/26/18
Applicant/Owner: D. Jokest, M. Widdowson
Section, Township, Range:
Landform (hillslope, terrace, etc.): Road shoulder
Local relief (concave, convex, none): Convex
Slope (%): 4
Subregion (LRP): A
Lat:
Long:
Datum:
Soil Map Unit Name: Cuspine loam, 0-5% slopes
NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No
If no, explain in Remarks.
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☒ No
Are "Normal Circumstances" present? Yes ☒ No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☒ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☒ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☒ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☒ No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Representative sampling point pair w/ sw 2 (ap 4)

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ___________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ___________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' x 5')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Briza maxima</td>
<td>40 Y UPL</td>
</tr>
<tr>
<td>2. Avena barbata</td>
<td>20 Y UPL</td>
</tr>
<tr>
<td>3. Eschscholtzia californica</td>
<td>10 N UPL</td>
</tr>
<tr>
<td>4. Holcus lanatus</td>
<td>30 Y FAC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 15' x 6')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>20 = Total Cover</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum

Remarks:

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>Lowry Clay</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Loam</td>
<td>gravel inclusions</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

Location: PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Restrictive Layer (if present):

- Type: 
- Depth (inches): 

Hydric Soil Present? Yes [ ] No [x]

Remarks:

[Handwritten: Imported Fill]

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturated (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Indurated Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B13)
- Dye-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquilard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes [x] No [ ] Depth (inches): none to 16
- Water Table Present? Yes [x] No [ ] Depth (inches): none to 16
- Saturation Present? Yes [x] No [ ] Depth (inches): none to 16

Wetland Hydrology Present? Yes [ ] No [x]

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

Remarks:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester, Mendocino
Sampling Date: 6/26/2018

Applicant/Owner: D. Jokerst, M. Widdowson
Section, Township, Range:
Landform (hillslope, terrace, etc.): Swale
Local relief (conceve, convex, none): Concave
Slope (%): 1
Subregion (LRR): A
Lat: Long: Datum:
Soil Map Unit Name: 105 - Biaggi loam
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☑ No
Are "Normal Circumstances" present? Yes ☑ No
If needed, explain any answers in Remarks.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No</td>
</tr>
<tr>
<td>CZ Wetland Is the Sampled Area within a Wetland?</td>
<td>Yes ☑ No</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
</tr>
</tbody>
</table>

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 2 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 8’x4’ )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oenothera - sarmentosa</td>
<td>70 Y OBL</td>
</tr>
<tr>
<td>2. Potentilla antirrhina</td>
<td>20 Y OBL</td>
</tr>
<tr>
<td>3. Equisetum telmateo</td>
<td>10 N FAC</td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11. = Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground In Herb Stratum 0

Remarks:

Hydrophytic Vegetation Indicators:
1. Rapid test for Hydrophytic Vegetation
2. Dominance Test Is >50%
3. Prevalence Index Is ≤3.0%
4. Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation1 (Explain)

Hydrophytic Vegetation Present? Yes ☑ No

Prevalence Index = B/A = 

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
## Soil

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>10YR 3/2</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td>c1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-10</td>
<td>10YR 3/2</td>
<td>93%</td>
<td>2.5YR 5/8</td>
<td>7</td>
<td>C M</td>
<td>c1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.*  
*Location: PL=Pore Lining, M=Matrix.*

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

- Histosol (A1)
- Historic Epipedon (A2)
- Black Historic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type:
- Depth (inches):

**Hydric Soil Present?** Yes ✅ No ❌

**Remarks:**

---

## Hydrology

**Wetland Hydrology Indicators:**

Primary indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 3, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Fac-Neutral Test (D5)
- Geomorphic Position (D2)
- Shallow Aquard (D3)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ✅ No ❌ Depth (inches):
- Water Table Present? Yes ✅ No ❌ Depth (inches):
- Saturation Present? Yes ✅ No ❌ Depth (inches):

**Wetland Hydrology Present?** Yes ✅ No ❌

**Remarks:**
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester, Mendocino  
Sampling Date: 6/26/2018

Applicant/Owner: D. Jokerst, M. Widdowson  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): Swale  
Local relief (convex, concave, none): Concave  
Slope (%): 3

Subregion (LRR): A  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 105 Biaggi loam, 0-5% slopes  
NWI classification:  
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No (If no, explain in Remarks.)  
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☑ No  
Are "Normal Circumstances" present? Yes ☑ No 
If needed, explain any answers in Remarks.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑</th>
<th>No ___</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑</td>
<td>No ___</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑</td>
<td>No ___</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes ☑</td>
<td>No ___</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Roadside Swale

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size:  )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
<th>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: 10 x 8')</td>
<td>Total Cover</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Herb Stratum (Plot size: 2 x 8')</td>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Juncus bulbosus 30</td>
<td>Y  FACW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Briza maxima 5</td>
<td>N  UPL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Holcus lanatus 5</td>
<td>N  FAC</td>
<td></td>
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<td></td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
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<tr>
<td>10.</td>
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<tr>
<td>11.</td>
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<td></td>
</tr>
<tr>
<td>Woody Vine Stratum (Plot size:  )</td>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Hydrophytic Vegetation Indicators:

1. Rapid test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ___
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR 2/2</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-16</td>
<td>10YR 2/2</td>
<td>90</td>
<td>7.5YR 5/8</td>
<td>10</td>
</tr>
</tbody>
</table>

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

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**
- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes  
- No

**Remarks:**

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**
- Water-Stained Leaves (B3) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)

**Field Observations:**

- Surface Water Present? Yes  
- No Depth (inches): 
- Water Table Present? Yes  
- No Depth (inches): 
- Saturation Present? Yes  
- No (includes capillary fringe) Depth (inches): 

**Wetland Hydrology Present?** Yes  
- No

**Remarks:**

---

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester, Mendocino
Sampling Date: 6/26/2018
Applicant/Owner: ________________
State: Ca
Investigator(s): D. Jokerst, M. Widdowson
Section, Township, Range: ________________
Landform (hillslope, terrace, etc.): __________ Local relief (concave, convex, none): Concave Slope (%): __________
Subregion (LRR): A Lat: __________ Datum: __________
Soil Map Unit Name: 1447 Fluoreville clay loam, 0.5\% slopes
NWI classification: __________

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ______ No ______
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ______ No ______
Hydric Soil Present? Yes ______ No ______
Wetland Hydrology Present? Yes ______ No ______
Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ________)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sapling/Shrub Stratum (Plot size: ________)

\[
\text{Total Cover} = \text{Number of Sapling/Species} \times \text{Percent Dominant Species} \times \text{Total Plot Area} / 100
\]

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Herb Stratum (Plot size: 2 x 8)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Helianthus annuus</td>
<td>20</td>
<td>Y FAC</td>
</tr>
<tr>
<td>2. Brassica maxima</td>
<td>50</td>
<td>Y UPE</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
\text{Total Cover} = \text{Number of Herb/Species} \times \text{Percent Dominant Species} \times \text{Total Plot Area} / 100
\]

Woody Vine Stratum (Plot size: ________)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
\text{Total Cover} = \text{Number of Woody/Vine/Species} \times \text{Percent Dominant Species} \times \text{Total Plot Area} / 100
\]

% Bare Ground in Herb Stratum: ________

Remarks:

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No ______
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-9</td>
<td>10 YR 2/2</td>
<td>100</td>
</tr>
<tr>
<td>9-11</td>
<td>10 YR 2/2</td>
<td>100</td>
</tr>
<tr>
<td>11-15</td>
<td>5/2</td>
<td>50</td>
</tr>
</tbody>
</table>

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils⁴:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
- Type: \\
- Depth (inches): \\

Hydraulic Soil Present? Yes ✔ No 

Remarks: Soils moist at 11 inches

HYDROLOGY

Wetland Hydrology Indicators:
Primary Indicators (minimum of one required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Gsomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:
- Surface Water Present? Yes ✔ No ❌ Depth (inches): \\
- Water Table Present? Yes ✔ No ❌ Depth (inches): none to 15
- Saturation Present? Yes ✔ No ❌ Depth (inches): none to 15 (includes capillary fringe)

Wetland Hydrology Present? Yes ✔ No ❌

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

Remarks:
Swale, but no sign of recent water flow
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester, Mendocino  
Sampling Date: 6/27/2018

Applicant/Owner:  
City/County: Manchester, Mendocino  
Sampling Date: 6/27/2018

Investigator(s): D. Jester, M. Widdowson  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): Swale  
Local relief (concave, convex, none): Concave  
Slope (%): 2

Subregion (LRR): A  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 144-Plumas So. Bay, 0.5% slopes  
NWI classification:  
Are climatic/hydrologic conditions on the site typical for this time of year? Yes √ No  
(If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes √ No  
Are "Normal Circumstances" present? Yes √ No  
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydric Soil Present? Yes ____ No ____  
Is the Sampled Area within a Wetland? Yes ____ No ____

Hydric Vegetation Present? Yes ____ No ____  
Wetland Hydrology Present? Yes ____ No ____

Remarks: Roadside - slight swale with upland veg

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 8 x 2')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brassica maxima</td>
<td>40</td>
</tr>
<tr>
<td>2. Heteractis lanatae</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 8 x 2')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus fruticosus</td>
<td>90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species × 1 =
FACW species × 2 =
FAC species × 3 =
FACU species × 4 =
UPL species × 5 =
Column Totals: (A)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence index is ≤3.0
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants¹

1Indicators of hydrosoil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-11</td>
<td>10YR 2.5/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-16</td>
<td>10YR 3/1</td>
<td>75</td>
<td>10YR 5/8</td>
<td>25</td>
<td>C M</td>
<td></td>
<td>sl</td>
<td>with gravel</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 

**Remarks:**

*Redox is too deep*

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Induration Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

### Field Observations:

- Surface Water Present? Yes No Depth (inches): none to 16
- Water Table Present? Yes No Depth (inches): none to 16
- Saturation Present? Yes No Depth (inches): none to 16

**Wetland Hydrology Present?**

- Yes ____ No __

**Remarks:**

*No indicators - site is shallow roadside swale but no sign of water flow*
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester, Mendocino  
**Sampling Date:** 6/27/2018

**Applicant/Owner:**  
**State:** Ca  
**Investigator(s):** D. Jokserst, M. Widdowson  
**Sampling Point:**

**Landform (hillslope, terrace, etc.):** Swale  
**Local relief (concave, convex, none):** Concave  
**Slope (%):** 2

**Subregion (LLR):** A  
**Lat:**  
**Long:**  
**Datum:**  
**Soil Map Unit Name:** 144e-Flumeville clay loam, 0.5% slopes  
**NWI classification:**

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes ☑ No ☐  
(If no, explain in Remarks.)

**Are Vegetation, Soil, or Hydrology significantly disturbed?** Yes ☐ No ☑  
(If needed, explain any answers in Remarks.)

**Are "Normal Circumstances" present?** Yes ☑ No ☐

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑</th>
<th>No ☐</th>
<th>CZ Wetland</th>
<th>Yes ☑</th>
<th>No ☐</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑</th>
<th>No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑</td>
<td>No ☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑</td>
<td>No ☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**VEGETATION – Use scientific names of plants.**

**Tree Stratum** (Plot size: ________)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| sapling/shrub stratum (plot size: ________)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Herb Stratum** (Plot size: 24 x 10 )

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Centanthera sermentosa</td>
<td>30 Y OBL</td>
<td></td>
</tr>
<tr>
<td>2. Epilobium</td>
<td>10 Y FACW</td>
<td></td>
</tr>
<tr>
<td>3. Grandus discard stricta</td>
<td>30 Y FACW</td>
<td></td>
</tr>
<tr>
<td>4. Mentha folium</td>
<td>20 Y OBL</td>
<td></td>
</tr>
<tr>
<td>5. Epigynium venus</td>
<td>20 Y FACW</td>
<td></td>
</tr>
<tr>
<td>6. Hypericum lanatns</td>
<td>3 N FACW</td>
<td></td>
</tr>
<tr>
<td>7. Lotos comoculatus</td>
<td>5 N FACW</td>
<td></td>
</tr>
</tbody>
</table>

| Woody Vine Stratum (Plot size: ________)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Hydrophytic vegetation in roadside ditch

**Dominance Test worksheet:**

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>3 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>3 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>100 (A/B)</td>
</tr>
</tbody>
</table>

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals: (A)</td>
<td>(B)</td>
</tr>
</tbody>
</table>

**Prevalence Index = B/A =**

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0%
4. Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants1
6. Problematic Hydrophytic Vegetation1 (Explain)

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>4.1%</td>
<td>10%</td>
<td>C</td>
<td>M</td>
</tr>
<tr>
<td>6 - 16</td>
<td>4.1%</td>
<td>20%</td>
<td>C</td>
<td>M</td>
</tr>
</tbody>
</table>

1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

Hydric Soil Indicators: (Applicable to all LRR's, unless otherwise noted.)

- Histosol (A1)
- Histic Epipodion (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Sandy Redox (S5)
Stripped Matrix (S6)
Loamy Mucky Mineral (F1) (except MLRA 1)
Loamy Gleyed Matrix (F2)
Depleted Matrix (F3)
Redox Dark Surface (F6)
Depleted Dark Surface (F7)
Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

2 Location: PL=Pore Lining, M=Matrix

Restrictive Layer (if present):

Type: ____________________
Depth (inches): ____________

Hydric Soil Present? Yes [ ] No [ ]

Remarks: ____________________

### HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparserly Vegetated Concave Surface (B8)

Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
Salt Crust (B11)
Aquatic Invertebrates (B13)
Hydrogen Sulfide Odor (C1)
Presence of Reduced Iron (C4)
Recent Iron Reduction in Tilled Soils (C6)
Stunted or Stressed Plants (D1) (LRR A)
other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes [ ] No [ ] Depth (inches): 16
- Water Table Present? Yes [ ] No [ ] Depth (inches): 16
- Saturation Present? Yes [ ] No [ ] Depth (inches): 16

Wetland Hydrology Present? Yes [ ] No [ ]

Remarks: ____________________

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 27 Sept, 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 11

Investigator(s): M. Widdowson, S. Spooner  
Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley slopes, lowland  
Local relief (concave, convex, none): Concave  
Slope (%): 5-15

Subregion (LRR): A: Northwest Forests and Coast  
Lat: Long: Datum:  

Soil Map Unit Name: 144 - Plumasville clay loam, 0.5% slopes  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  
(if no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed?  
Are "Normal Circumstances" present? Yes  No  
(If needed, explain any answers in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic?  
Remarks:

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>CZ Wetland Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Remarks:

PM 23.74, Riparian willow scrub along intermittent stream

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 X 10 ft)

<table>
<thead>
<tr>
<th>1.</th>
<th>Salix lasiopus</th>
<th>30</th>
<th>10</th>
<th>Y</th>
<th>FACW</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Sapling/Shrub Stratum (Plot size: )

| 1. |                |    |    |   |     |    |
| 2. |                |    |    |   |     |    |
| 3. |                |    |    |   |     |    |
| 4. |                |    |    |   |     |    |

Herb Stratum (Plot size: 5 x 10 ft)

| 1. | Polyscironium nutans | 10 | 5 | Y | FACW | 45 |
| 2. | Cymarin maculaturn | X | 5 | N | FACW | <1 |
| 3. | Stylis regium | X | 5 | N | FACW | <1 |
| 4. |                |    |    |   |     |    |
| 5. |                |    |    |   |     |    |
| 6. |                |    |    |   |     |    |
| 7. |                |    |    |   |     |    |
| 8. |                |    |    |   |     |    |
| 9. |                |    |    |   |     |    |
| 10. |                |    |    |   |     |    |
| 11. |                |    |    |   |     |    |

Total Cover = 45

Woody Vine Stratum (Plot size: 30 X 10 ft)

| 1. | Rubus ursinus | 30 | 5 | Y | FACW | 55 |
| 2. |                |    |    |   |     |    |

% Bare Ground in Herb Stratum: 45

Remarks:

Hydrophytic Vegetation Present? Yes  No

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

<table>
<thead>
<tr>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
</tbody>
</table>

Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>(A)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

1. Indicates of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Sandy Redox (S5)
Stripped Matrix (S6)
Loamy Mucky Mineral (F1) (except MLRA 1)
Loamy Gleyed Matrix (F2)
Depleted Matrix (F3)
Redox Surface (F6)
Depleted Dark Surface (F7)
Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____________________________
Depth (inches): __________________

Hydric Soil Present? Yes _____ No _____

Remarks: Cannot dig soil pit because of presence of PAVB

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): ____________
Water Table Present? Yes _____ No _____ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): ____________

Wetland Hydrology Present? Yes _____ No _____

Remarks: Water seems confined to incised channel of intermittent stream. No evidence of wetland hydrology in riparian and ground is sloping. Would not pond water, or collect/ concentrate water flow.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
City/County: Manchester / MENDOCINO
State: CA
Sampling Date: 27 Sept, 2018
Sampling Point: 12

Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace
Local relief (concave, convex, none): none
Slope (%): 5
Subregion (LRR): A: Northwest Forests and Coast
Lat: ___
Long: ___
Datum: ___

Soil Map Unit Name: 144–Flumeri Slate 0-5% slopes
NW classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation _______ Soil _______ or Hydrology _______ significantly disturbed? Yes No
Are “Normal Circumstances” present? Yes No
Are Vegetation _______ Soil _______ or Hydrology _______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No _____________
Hydric Soil Present? Yes No
Is the Sampled Area within a Wetland? Yes No

Wetland Hydrology Present? Yes No _____________

Remarks:

DM 23.74 - patch of Salix scrub on east of road
DP is at edge of Salix patch on road shoulder

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____________)

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>% Cover</th>
<th>Dominant</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AbsOLUTE

\[ \text{Total Cover} \]

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Plot Size</th>
<th>% Cover</th>
<th>Dominant</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20' x 10'</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Salix scouleriana</td>
<td>100</td>
<td>Y</td>
<td>FAC</td>
</tr>
<tr>
<td></td>
<td>Quercus ilex</td>
<td>10</td>
<td>N</td>
<td>UPL</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prevalence Index worksheet:

\[ \text{Total % Cover of: } = \frac{\text{Column Totals}}{(A-B)} \]

<table>
<thead>
<tr>
<th>Prevalence Index</th>
<th>= B/A</th>
</tr>
</thead>
</table>

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

\[ \checkmark \]

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0^1

4 - Morphological Adaptations^1 (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants^1

\[ \text{Problematic Hydrophytic Vegetation}^1 \] (Explain)

1^Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

\[ \text{% Bare Ground in Herb Stratum} = \frac{17}{100} \]

\[ \text{Total Cover} = \]
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td></td>
<td>10/2 3/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Ret Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___________________________
Depth (inches): ___________________________

Hydric Soil Present? Yes ___ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Induction Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes ___ No ___ Depth (inches): ______
- Water Table Present? Yes ___ No ___ Depth (inches): ______
- Saturation Present? Yes ___ No ___ Depth (inches): ______

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

Remarks:

Western Mountains, Valleys, and Coast – Version 2.0
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

- **Project/Site:** RTI Manchester
- **City/County:** Manchester / MENDOCINO
- **Applicant/Owner:** RTI / Caltrans, private
- **State:** CA
- **Sampling Date:** 27 Sept, 2018
- **Investigator(s):** M. Widdowson, S. Spooner
- **Sampling Point:** 13
- **Landform:** Road shoulder
- **Local relief (concave, convex, none):** None-convex
- **Subregion:** A: Northwest Forests and Coast
- **Soil Map Unit Name:** 14h - Flumeville clay loam, O.5% slopes
- **NWRI classification:**
- **Are climatic / hydrologic conditions on the site typical for this time of year?** Yes [ ] No [ ]
- **Are vegetation, soil, or hydrology significantly disturbed?**
- **Are "Normal Circumstances" present?** Yes [ ] No [ ]
- **Are vegetation, soil, or hydrology naturally problematic?**

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [ ] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Remarks:</td>
<td>On road shoulder</td>
</tr>
</tbody>
</table>

**Is the Sampled Area within a Wetland?** Yes [ ] No [ ]

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum</th>
<th>(Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sapling/Shrub Stratum</td>
<td>(Plot size: )</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<td>3.</td>
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<tr>
<td>4.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Herb Stratum</td>
<td>(Plot size: )</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Aliso Spec.</td>
<td>2 N UPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Geranium cort.</td>
<td>2 N UPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Echinochila californica</td>
<td>5 N UPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Gynura echiurana</td>
<td>30 Y UPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Rumex acetosella</td>
<td>5 N FACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Briza maxima</td>
<td>5 N FACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Bromus hordaeus</td>
<td>20 Y FACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Bromus diandrus</td>
<td>5 N UPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
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<tr>
<td>10.</td>
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<tr>
<td>11.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum</th>
<th>(Plot size: )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ficus microcarpa</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum | 0 |

### Dominance Test worksheet:

- **Number of Dominant Species That Are OBL, FACW, or FAC:** 0
- **Total Number of Dominant Species Across All Strata:**
- **Percent of Dominant Species That Are OBL, FACW, or FAC:** 0

### Prevalence Index worksheet:

- **Total % Cover of:**
  - OBL species x 1 =
  - FACW species x 2 =
  - FAC species x 3 =
  - FACU species x 4 =
  - UPL species x 5 =
  - Column Totals = (A)
- **Prevalence Index = B/A =**

### Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0
- 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation

### Hydrophytic Vegetation Present?

- Yes [ ] No [ ]
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S8)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Restrictive Layer (if present):
- Type:
- Depth (inches):

Hydric Soil Present? Yes ___ No ___

Remarks:

- Soil pit not dug - too close to road

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C8)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches):

Water Table Present? Yes ___ No ___ Depth (inches):

Saturation Present? Yes ___ No ___ Depth (inches):

Includes capillary fringe

Wetland Hydrology Present? Yes ___ No ___

Remarks:

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

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 27 Sept, 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 14

Investigator(s): M. Widdowson, S. Spooner  
Section, Township, Range:

Landform (hillslope, terrace, etc.): 
Local relief (concave, convex, none): none  
Slope (%): 2

Subregion (LRR): A: Northwest Forests and Coast  
Lat:  
Long:  
Datum:

Soil Map Unit Name: 144 - Flumeville clay loam, 0-5% slopes  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  
No (if no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?  
Are "Normal Circumstances" present? Yes  
No (if needed, explain any answers in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes  
No

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _______ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 5 x 30 )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lowisia undulata</td>
<td>50 Y FACW</td>
</tr>
<tr>
<td>2. Baccharis pilularis</td>
<td>5 N UPL</td>
</tr>
<tr>
<td>3. Saux sutchiensis</td>
<td>20 Y FACW</td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' radius)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Carex obtusa</td>
<td>30 Y OBL</td>
</tr>
<tr>
<td>2. Juncus patens</td>
<td>10 Y FACW</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 5 x 30 )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus viscosus</td>
<td>10 Y FACU</td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>60</td>
</tr>
</tbody>
</table>

Remarks: Hydrophytic vegetation extends to bare graded road shoulder pavement here

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4  
(A)

Total Number of Dominant Species Across All Strata: 5  
(B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80%  
(NB)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

| OBL species | 1 |
| FACW species| 2 |
| FAC species | 3 |
| FACU species| 4 |
| UPL species | 5 |

Column Totals: (A)  
(B)

Prevalence Index = (B/A) =

Hydrophytic Vegetation Indicators:

1. - Rapid Test for Hydrophytic Vegetation
2. - Dominance Test is >50%
3. - Prevalence Index is ≥30%
4. - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5. - Welland Non-Vascular Plants1

Hydrophytic Vegetation Present? Yes  
No

1Indicators of hydrophytic vegetation1 (Explain)  
Hydrophytic vegetation must be present, unless disturbed or problematic.
## SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>10 YR 3/3</td>
<td>100</td>
<td></td>
<td></td>
<td>g/mix</td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.*

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.*

Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Remarks:

"Ground too hard to dig below 6"**

## HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C8)
- Stunted or Stressed Plants (D1)
- Other (Explain in Remarks)

**Field Observations:**

- Surface Water Present? Yes | No | Depth (inches):_____
- Water Table Present? Yes | No | Depth (inches):_____
- Saturation Present? Yes | No | Depth (inches):_____

**Wetland Hydrology Present?** Yes | No

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

Remarks:

"No evidence of surface hydrology"
<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>10%</td>
<td>100%</td>
<td>Color (moist)</td>
<td>%</td>
<td>Type</td>
<td>Loc</td>
<td>Texture</td>
<td>Remarks</td>
<td></td>
</tr>
</tbody>
</table>

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

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**
- Type: 
- Depth (inches): 

**Hydric Soil Present?** Yes ☑ No 

**Remarks:**
Road Shoulder - ground too hard to dig below 6".

## HYDROLOGY

**Wetland Hydrology Indicators:**
- Primary Indicators (minimum of one required; check all that apply)
  - Surface Water (A1)
  - High Water Table (A2)
  - Saturation (A3)
  - Water Marks (B1)
  - Sediment Deposits (B2)
  - Drift Deposits (B3)
  - Algal Mat or Crust (B4)
  - Iron Deposits (B5)
  - Surface Soil Cracks (B6)
  - Inundation Visible on Aerial Imagery (B7)
  - Sparsely Vegetated Concave Surface (B8)

- Secondary Indicators (2 or more required)
  - Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
  - Drainage Patterns (B10)
  - Dry-Season Water Table (C2)
  - Saturation Visible on Aerial Imagery (C9)
  - Geomorphic Position (D2)
  - Shallow Aquifer (D3)
  - FAC-Neutral Test (D5)
  - Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)

**Field Observations:**
- Surface Water Present? Yes ☑ No 
  - Depth (inches): 6
- Water Table Present? Yes ☑ No 
  - Depth (inches): 6
- Saturation Present? Yes ☑ No 
  - Depth (inches): 6

**Wetland Hydrology Present?** Yes ☑ No 

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

**Remarks:**
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**State:** CA  
**Sampling Date:** 27 Sept, 2018  
**Applicant/Owner:** RTI / Caltrans, private  
**Investigator(s):** M. Widdowson, S. Spooner  
**Sampling Point:** 15  
**Landform (hillslope, terrace, etc.):**  
**Local relief (concave, convex, none):** None  
**Slope (%):** 1  
**Subregion (LRR):** A: Northwest Forests and Coast  
**Lat:**  
**Long:**  
**Datum:**  

**Soil Map Unit Name:** 166 - Plumcreek day loan 0-5% slopes  
**NWS classification:**  

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes □ No □ (If no, explain in Remarks.)

**Are Vegetation, Soil, or Hydrology significantly disturbed?** Are "Normal Circumstances" present? Yes □ No □

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes □ No □</th>
<th>C2 Wetland</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes □ No □</td>
<td>C2 Wetland</td>
<td>Yes □ No □</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes □ No □</td>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes □ No □</td>
</tr>
</tbody>
</table>

**Remarks:**

---

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Domain Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 4 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index worksheet:</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of:</td>
</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: 6\’x25\’)</td>
<td></td>
<td></td>
<td></td>
<td>Multiply by:</td>
</tr>
<tr>
<td>1. Barrens pilularis</td>
<td>20</td>
<td>Y</td>
<td>FAF_A</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>30</td>
<td>Y</td>
<td>FAF_C</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>40</td>
<td>Y</td>
<td>FAF_C</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>50</td>
<td>N</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>60</td>
<td>Y</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>Herb Stratum (Plot size: 6\’x6\’)</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals:</td>
</tr>
<tr>
<td>1. Carex obnupta</td>
<td>10</td>
<td>Y</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>2. Grimmella stricta</td>
<td>10</td>
<td>Y</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>3. Helianthus lanatus</td>
<td>2</td>
<td>N</td>
<td>FAC</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>20</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>30</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Vine Stratum (Plot size: 6\’x25\’)</td>
<td></td>
<td></td>
<td></td>
<td>Hydrophytic Vegetation Present?</td>
</tr>
<tr>
<td>1. Rubus</td>
<td>20</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>30</td>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Sampling Date: 27 Sept, 2018
Applicant/Owner: RTI / Caltrans, private
State: CA
Sampling Point: 16
Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Rare/Concave. Slope (%): 5
Subregion (LRG): A. Northwest Forests and Coast
Lot:
Long: Datum:
Soil Map Unit Name: 132 - Crispin loam, O-5% slopes
NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes □ No □ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are “Normal Circumstances” present? Yes □ No □
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes □ No □</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes □ No □</th>
</tr>
</thead>
</table>

Remarks:
Roadside seep on bank [blank]

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum</th>
<th>Absolute Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plot size: ___</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>1.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>2.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>3.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>4.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>5.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum</th>
<th>Plot size: ___</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>2.</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>3.</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>4.</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>5.</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum</th>
<th>Plot size: 5X5’</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cyperus eragrostis</td>
<td>25 Y FACW</td>
<td>___</td>
</tr>
<tr>
<td>2. Muhlenbergia glauca</td>
<td>10 N OBL</td>
<td>___</td>
</tr>
<tr>
<td>3. Juncus effusus</td>
<td>25 Y FACW</td>
<td>___</td>
</tr>
<tr>
<td>4. Sisyrinchium bellum</td>
<td>5 N FAC</td>
<td>___</td>
</tr>
<tr>
<td>5. Schoenoplectus californicus</td>
<td>10 Y OBL</td>
<td>___</td>
</tr>
<tr>
<td>6. Scirpus microcarpus</td>
<td>20 N FAC</td>
<td>___</td>
</tr>
<tr>
<td>7. Anthoxanthum odoratum</td>
<td>2 N OBL</td>
<td>___</td>
</tr>
<tr>
<td>8. Juncus bolanderi</td>
<td>1 N FAC</td>
<td>___</td>
</tr>
<tr>
<td>9. Juncus patens</td>
<td>2 N FAC</td>
<td>___</td>
</tr>
<tr>
<td>10.</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>11.</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plot size: ___</td>
<td>___</td>
</tr>
<tr>
<td>1.</td>
<td>___</td>
</tr>
<tr>
<td>2.</td>
<td>___</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum: 0

Remarks:

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>10YR 3/2</td>
<td>100</td>
<td>10YR 5/8</td>
<td>20</td>
<td>C</td>
<td>M</td>
</tr>
<tr>
<td>2-12</td>
<td>10YR 3/2</td>
<td>70</td>
<td>10YR 6/3</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Hydric Soil Indicators:**
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**
- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes ✔ No

**HYDROLOGY**

**Wetland Hydrology Indicators:**
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B8)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**
- Surface Water Present? Yes ✔ No Depth (inches): 
- Water Table Present? Yes ✔ No Depth (inches): none ✔ 12
- Saturation Present? Yes ✔ No Depth (inches): 
   (includes capillary fringe)

**Wetland Hydrology Present?**
- Yes ✔ No

Remarks:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
State: CA
Sampling Date: 27 Sept, 2018
Sampling Point: 17

Applicant/Owner: RTI / Caltrans, private
Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range: 
Landform (hillocks, terrace, etc.): Terrace
Local relief (concave, convex, none): Convex
Slope (%): 
Subregion (LRR): A: Northwest Forests and Coast
Lat: 
Long: 
Datum: 
Soil Map Unit Name: 132 - Cripsin Ixion, 0-5 
NWI classification: 
Are climatic / Hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation ___, Soil _____ or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes No (If needed, explain any answers in Remarks.)
Are Vegetation _____, Soil ______ or Hydrology ______ naturally problematic? 

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No
Hydric Soil Present? Yes No
Wetland Hydrology Present? Yes No

Is the Sampled Area within a Wetland? Yes No

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ___________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.__________</td>
<td>25 Y FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.__________</td>
<td>3.__________</td>
<td>4.__________</td>
<td>= Total Cover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 5'x15')</th>
<th>25 Y FAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus parviflorus</td>
<td>25 Y FAC</td>
</tr>
<tr>
<td>2.__________</td>
<td>3.__________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ___________ )</th>
<th>25 = Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anthoxanthum odoratum</td>
<td>15 Y FAC</td>
</tr>
<tr>
<td>2. Scirpus microcarpus</td>
<td>5 N DDL</td>
</tr>
<tr>
<td>3. Hordeum murinum</td>
<td>10 Y FAC</td>
</tr>
<tr>
<td>4. Equisetum telmateia</td>
<td>5 N FAC</td>
</tr>
<tr>
<td>5. Bitza maxima</td>
<td>15 Y UPL</td>
</tr>
<tr>
<td>6.__________</td>
<td>7.__________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 5'x15')</th>
<th>50 = Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus vinifera</td>
<td>50 Y FAC</td>
</tr>
<tr>
<td>2. Toxicodendron diversilobum</td>
<td>30 Y FAC</td>
</tr>
<tr>
<td>3.__________</td>
<td>4.__________</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum 50

Remarks:

Hydrophytic Vegetation Present? Yes No

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species x 1 =
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals: (A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is <3.01
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10 YR 3/2</td>
<td>100</td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Restrictive Layer (if present):

- Type:
- Depth (inches): 

Hydric Soil Present? Yes [ ] No [x] 

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C5)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes [x] No [ ]
- Water Table Present? Yes [x] No [ ]
- Saturation Present? [ ]

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

Remarks:
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**Sampling Date:** 27 Sept, 2018

**Applicant/Owner:** RTI / Caltrans, private  
**State:** CA  
**Sampling Point:** 18

**Investigator(s):** M. Widdowson, S. Spooner  
**Section, Township, Range:**

**Landform (hillslope, terrace, etc.):** **road bank**  
**Local relief (concave, convex, none):** none  
**Slope (%):** 40

**Subregion (LRR):** A: Northwest Forests and Coast  
**Lat:**  
**Long:**  
**Datum:**

**Soil Map Unit Name:** 132 - Cripinloam, 0.5% slopes  
**NRM classification:**

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes ✓ No  
(if no, explain in Remarks.)

**Are Vegetation, Soil, or Hydrology significantly disturbed?**  
**Are "Normal Circumstances" present?** Yes ✓ No  
(If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ✓</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No ✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ✓</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Patch of Salix scrub on bank above road shoulder

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: ) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: 
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 4 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/D)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum (Plot size: 10' x 10')**

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Status</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salix sitchensis</td>
<td>80</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>Rubus ursinus</td>
<td>5</td>
<td>N</td>
<td>FAC</td>
</tr>
</tbody>
</table>

**Herb Stratum (Plot size: 5' radius)**

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Status</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equisetum hyemalei</td>
<td>2</td>
<td>N</td>
<td>FACW</td>
</tr>
<tr>
<td>Sceptrum mueaceapus</td>
<td>5</td>
<td>Y</td>
<td>OBL</td>
</tr>
<tr>
<td>Scrophularia californica</td>
<td>3</td>
<td>Y</td>
<td>FAC</td>
</tr>
<tr>
<td>Polygellum rubrum</td>
<td>5</td>
<td>Y</td>
<td>FAC</td>
</tr>
</tbody>
</table>

**Total Cover:** 85 = Total Cover

**Woody Vine Stratum (Plot size: )**

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Dominant Status</th>
<th>Indicator Status</th>
</tr>
</thead>
</table>

**Total Cover:** 15 = Total Cover

**% Bare Ground in Herb Stratum:** 25 = Total Cover

**Remarks:**

---

US Army Corps of Engineers

Western Mountain, Valleys, and Coast – Version 2.0
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Rec Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
</table>

Hydric Soil Present? Yes ___ No ___

Remarks:

*Bank too steep to dig*

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply):

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C5)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required):

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Cry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C3)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

| Surface Water Present? | Yes ___ No ___ | Depth (inches): |
| Water Table Present? | Yes ___ No ___ | Depth (inches): |
| Saturation Present? (includes capillary fringe) | Yes ___ No ___ | Depth (inches): |

Wetland Hydrology Present? Yes ___ No ___

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

Remarks:

*Site topography would not pond or concentrate water*
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
City/County: Manchester / MENDOCINO
State: CA
Sampling Date: 27 Sept, 2018
Sampling Point: 19

Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range:
Landform (hillside, terrace, etc.): road bank
Local relief (concave, convex, none): none
Slope (%): 0
Subregion (LRR): A. Northwest Forests and Coast
Lat: Long: Datum:
Soil Map Unit Name: 139 - Dystropepts, 30-75% slopes
NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes □ No □ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology ______ significantly disturbed? Yes □ No □
Are Vegetation _____, Soil _____, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes □ No □
Hydric Soil Present? Yes _____ No □
Wetland Hydrology Present? Yes □ No □

C2 Wetland is the Sampled Area within a Wetland? Yes □ No □

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 20' x 10')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lomandra involucrata</td>
<td>80 Y FAC</td>
</tr>
<tr>
<td>2. Baccharis pilularis</td>
<td>10 N FAC</td>
</tr>
<tr>
<td>3. Rubus pensilis</td>
<td>10 N UPL</td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' radius)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heracleum maximum</td>
<td>15 Y FAC</td>
</tr>
<tr>
<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
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<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>85</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 20' x 10')</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Toxiscadenon diversilobum</td>
<td>20 Y FAC</td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</td>
</tr>
<tr>
<td>Total Number of Dominant Species Across All Strata: 3 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total % Cover of: Multiply by:</td>
</tr>
<tr>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>Column Totals: (A) (B)</td>
</tr>
<tr>
<td>Prevalence Index = B/A =</td>
</tr>
</tbody>
</table>

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation1 (Explain)

Indicators of hydrolic soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes □ No □

Remarks:

---

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

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

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

- Histosol (A1)  
- Histic Eutrophic (A2)  
- Black Histic (A3)  
- Hydrogen Sulphide (A4)  
- Depleted Below Dark Surface (A11)  
- Thick Dark Surface (A12)  
- Sandy Mucky Mineral (S1)  
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)  
- Stripped Matrix (S8)  
- Loamy Mucky Mineral (F1) (except MLRA 1)  
- Loamy Gleyed Matrix (F2)  
- Depleted Matrix (F3)  
- Redox Dark Surface (F6)  
- Depleted Dark Surface (F7)  
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Type:  
- Depth (inches):  

Hydric Soil Present? Yes [ ] No [ ]

Remarks:

No access to dig put

**HYDROLOGY**

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)  
- High Water Table (A2)  
- Saturation (A3)  
- Water Marks (B1)  
- Sediment Deposits (B2)  
- Drift Deposits (B3)  
- Algal Mat or Crust (B4)  
- Iron Deposits (B5)  
- Surface Soil Cracks (B6)  
- Inundation Visible on Aerial Imagery (B7)  
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)  
- Salt Crust (B11)  
- Aquatic Invertebrates (B13)  
- Hydrogen Sulphide Odor (C1)  
- Oxidized Rhizospheres along Living Roots (C3)  
- Presence of Reduced Iron (C4)  
- Recent Iron Reduction in Tilled Soils (C6)  
- Stunted or Stressed Plants (D1) (LRR A)  
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  
- Drainage Patterns (B10)  
- Dry-Season Water Table (C2)  
- Saturation Visible on Aerial Imagery (C9)  
- Geomorphic Position (D2)  
- Shallow Aquitard (D3)  
- FAC-Neutral Test (D5)  
- Raised Ant Mounds (D6) (LRR A)  
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes [ ] No [ ] Depth (inches):  
- Water Table Present? Yes [ ] No [ ] Depth (inches):  
- Saturation Present? Yes [ ] No [ ] Depth (inches):  

Wetland Hydrology Present? Yes [ ] No [ ]

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

Remarks:

Site topography would not pond or concentrate water
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Applicant/Owner: RTI / Caltrans, private
State: CA
Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range:
Landform (hillslope, terrace, etc.): road bank
Local relief (concave, convex, none): None
Slope (%): 15
Subregion (LRR): A: Northwest Forests and Coast
Lot: Long: Datum:
Soil Map Unit Name: 139 - Dystrupts, 30-75% slopes
WMI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

CZ Wetland: Yes

Is the Sampled Area within a Wetland? Yes

Remarks: Patch of Sitka willow at top of road bank, east side. Starts 6-8 ft from edge of pavement. Up to 15 ft from Equibus.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ..........)</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[\text{Total Cover}\]

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 10' x 20')</th>
<th>80</th>
<th>FACW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix exigua</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Mertensia californica</td>
<td>40</td>
<td>FACW</td>
</tr>
<tr>
<td>3. Polariscum minus</td>
<td>10</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Polystichum amitum</td>
<td>10</td>
<td>FACU</td>
</tr>
</tbody>
</table>

\[\text{Total Cover}\]

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: .................)</th>
<th>100</th>
<th>FACU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[\text{Total Cover}\]

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ..........)</th>
<th>0</th>
<th>FACU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[\text{Total Cover}\]

% Bare Ground in Herb Stratum: 100

Remarks: Very dense shrubs

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Western Mountain, Valleys, and Coast – Version 2.0
## SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td></td>
<td>10YR 3/3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type</th>
<th>Depth (inches)</th>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**Remarks:**

"Soil too hard to dig & vegetation too dense"

## HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply)**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparingly Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C8)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required)**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Cry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C3)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Depth (inches):**

- Surface Water: **No**
- Water Table: **Yes**
- Saturation: **No**

**Wetland Hydrology Present?**

- Yes

**Remarks:**

"No sign of surface hydrology. Litter layer is 2-3" deep"
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

- **Project/Site:** RTI Manchester
- **City/County:** Manchester / MENDOCINO
- **Sampling Date:** 28 Sept, 2016
- **Applicant/Owner:** RTI / Caltrans, private
- **State:** CA
- **Investigator(s):** M. Widdowson, S. Spooner
- **Section, Township, Range:**
- **Landform (hillslope, terrace, etc.):** Valley
- **Local relief (concave, convex, none):** Concave
- **Slope (%):** 1
- **Subregion (LRR):** A - Northwest Forests and Coast
- **Datum:**
- **Soil Map Unit Name:** 139-Dystropepts, 30-75% slopes
- **NWI classification:**
- **Are climatic / hydrologic conditions on the site typical for this time of year?** Yes [ ] No [ ]
- **If no, explain in Remarks:**
- **Are Vegetation_____ Soil _____ or Hydrology _____ significantly disturbed?**
- **Are “Normal Circumstances” present?** Yes [ ] No [ ]
- **If needed, explain any answers in Remarks:**
- **SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

- **Hydrophytic Vegetation Present?** Yes [ ] No [ ]
- **Hydric Soil Present?** Yes [ ] No [ ]
- **Is the Sampled Area within a Wetland?** Yes [ ] No [ ]
- **Wetland Hydrology Present?** Yes [ ] No [ ]

**Remarks:**

I'm 23.00 stream with wetland vegetation, low gradient, 3' wide

---

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<td></td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum (Plot size: )**

| 1.                        | 60 | Y | OBL |
| 2.                        | 10 | N | FACW |
| 3.                        | 5  | N | FAC |
| 4.                        | 5  | N | OBL |

**Herb Stratum (Plot size: 6'x2')**

| 1.                        | 60 | Y | OBL |
| 2.                        | 10 | N | FACW |
| 3.                        | 5  | N | FAC |
| 4.                        | 5  | N | OBL |

**Woody Vine Stratum (Plot size: )**

| 1.                        |                  |                   |                 |
| 2.                        |                  |                   |                 |

**% Bare Ground in Herb Stratum**

| 15 |

| Remarks: |

---

**Dominance Test worksheet:**

- **Number of Dominant Species That Are OBL, FACW, or FAC:** 1 (A)
- **Total Number of Dominant Species Across All Strata:** 1 (B)
- **Percent of Dominant Species That Are OBL, FACW, or FAC:** 100 (A/B)

**Prevalence Index worksheet:**

- **Total % Cover of:** Multiply by:
  - OBL species x 1 =
  - FACW species x 2 =
  - FAC species x 3 =
  - FACU species x 4 =
  - UPL species x 5 =

- **Column Totals: (A) (B) =

- **Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- **1 - Rapid Test for Hydrophytic Vegetation**
- **2 - Dominance Test is >50%**
- **3 - Prevalence Index is ≤3.0**
- **4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)**
- **5 - Wetland Non-Vascular Plants**

**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

---

**US Army Corps of Engineers**

**Western Mountains, Valleys, and Coast – Version 2.0**
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Sandy Redox (S55)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depleted Below Dark Surface (A11)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Redox Dark Surface (F6)</td>
<td></td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epepidon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**Remarks:**

Surface water present, therefore soil meets definition of hydric soil.

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? **Yes**
- Water Table Present? **Yes**
- Saturation Present? **Yes**

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

**Remarks:**

PM 23.00
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 28 Sept, 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 22

Investigator(s): M. Widlowson, S. Spooner  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): Terrace  
Local relief (concave, convex, none): None  
Slope (%): 1

Subregion (LRR): A. Northwest Forests and Coast  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 139 - Dystrudepts, 30-25% slopes  
NWI classification:  

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No  
(If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed?  
Are "Normal Circumstances" present? Yes ☑ No  
(if needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| Hydrophytic Vegetation Present? | Yes ☑ No  
| Hydric Soil Present? | Yes ☑ No  
| Wetland Hydrology Present? | Yes ☑ No  

Is the Sampled Area within a Wetland?  
Yes ☑ No  

Remarks: 

Adjacent to EW in stream at PM 23.00

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
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</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: _________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brachy sperma maculata</td>
<td>40 Y FAC</td>
</tr>
<tr>
<td>2. Hypoxis hyperborea</td>
<td></td>
</tr>
<tr>
<td>3. Rumex acetosella</td>
<td>2 N FACU</td>
</tr>
<tr>
<td>4. Poa annua</td>
<td>3 N UPL</td>
</tr>
<tr>
<td>5. Lepidium virginicum</td>
<td>30 Y FACU</td>
</tr>
<tr>
<td>6. Festuca arundinacea</td>
<td>10 Y FACU</td>
</tr>
<tr>
<td>7. Cynodon dactylon</td>
<td>2 N UPL</td>
</tr>
<tr>
<td>8. Chrysanthemum coccineum</td>
<td>3 N FACU</td>
</tr>
<tr>
<td>9. Linum austriacum</td>
<td>5 N UPL</td>
</tr>
<tr>
<td>10. Lotus corniculatus</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>100 = Total Cover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: _________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum: 0

| Remarks: |                  |

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 120/50 (AVD)

Prevalence Index worksheet:
Total % Cover of: OBL species x 1 =
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =

Column Totals: (A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0
4 - Morphological Adaptations" (Provide supporting data in Remarks or on a separate sheet)
5 - Wetland Non-Vascular Plants

Problematic Hydrophytic Vegetation: When hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☑

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>10 YR 3/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-12</td>
<td>10 YR 3/2</td>
<td>90 YR 5/6</td>
<td>10 C</td>
<td></td>
</tr>
</tbody>
</table>

1. **Type:** C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  
2. **Loc:** PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

3. **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**

**Restrictive Layer (if present):**

- **Type:**
- **Depth (Inches):**
- **Hydric Soil Present?** Yes ✔ No

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ✔ No
- Water Table Present? Yes ✔ No
- Saturation Present? Yes ✔ No
  (Includes capillary fringe)

**Depth (Inches):**

- Surface Water Present? Depth: 12 in
- Water Table Present? Depth: 12 in
- Saturation Present? Depth: 12 in

**Wetland Hydrology Present?** Yes ✔ No

**Remarks:**

---

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 28 Sept. 2018

Applicant/Owner: RTI / Caltrans, private

Investigator(s): M. Widdowson, S. Spooner

Landform (hillocks, terrace, etc.): road shoulder  
Local relief (concave, convex, none): none  
Slope (%): 1

Subregion (LRR): A: Northwest Forests and Coast

Soil Map Unit Name: 139 - Dystropepts, 30% 75% slopes  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  
(If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes  No  
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FAC, or FAC: 1 (A)</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 3 (B)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FAC, or FAC: 23 (C)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index worksheet:</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of: Multiply by:</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>OBL species x 1 = E</td>
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<td></td>
<td></td>
<td>FAC species x 2 = F</td>
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<tr>
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<td></td>
<td></td>
<td>FAC species x 3 = G</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>FACU species x 4 = H</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 = I</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: (A) (B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index = B/A = J</td>
</tr>
</tbody>
</table>

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >60%
3 - Prevalence Index is ≥3.0
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5 - Wetland Non-Vascular Plants

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes  No  

Woody Vine Stratum (Plot size: )

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

Remarks: 

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Location</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–6</td>
<td>18 YR 3/2</td>
<td>100</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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

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

- Hiatochal (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depressed Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:***

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
<th>Remarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Gravel/old road base at 6 inches

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C3)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes  No
- Water Table Present?  Yes No
- Saturation Present?  Yes No

**Remarks:**

Wetland Hydrology Present? Yes  No
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Sampling Date: 28 Sept, 2016
Applicant/Owner: RTI / Caltrans, private
State: CA
Sampling Point: 25
Investigator(s): M. Widdowson, S. Spooner
Section, Township, Range: __________
Landform (hillside, terrace, etc.): Bank/Shoulder
Local relief (concave, convex, none): Convex
Slope (%): 5
Subregion (LRR): A: Northwest Forests and Coast
Lat: __________
Long: __________
Datum: __________
Soil Map Unit Name: 139-Dystropepts, 30-75% Slopes
NWI classification: __________

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐
(If no, explain in Remarks.)
Are Vegetation ________ Soil ________ or Hydrology ________ significantly disturbed?
Are "Normal Circumstances" present? Yes ☑ No ☐
(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No ☐</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No ☐</td>
</tr>
<tr>
<td>Remarks:</td>
<td>Road shoulder between deep swale and road</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes ☑ No ☑

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: __________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 6 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (AB)</td>
</tr>
<tr>
<td>4.</td>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: __________)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<tr>
<td>5.</td>
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</tr>
<tr>
<td>Herb Stratum (Plot size: 51 values):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Gephrion corneus</td>
<td>15 Y UPL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ficus lanatus</td>
<td>20 Y FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bromus diandrus</td>
<td>15 Y UPL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Briza maxima</td>
<td>25 Y FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Vulpia bromoides</td>
<td>5 N FACU</td>
<td></td>
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<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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<td>9.</td>
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<td>10.</td>
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<tr>
<td>11.</td>
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<td></td>
</tr>
<tr>
<td>Woody Vine Stratum (Plot size: 10x4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Rubus ursinus</td>
<td>40 Y FACU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Toxocerus amculosum</td>
<td>30 Y FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation² (Explain)

Hydrophytic Vegetation Present? Yes ☑ No ☐

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
### Soil

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>10YR 3/12</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Restrictive Layer (If present):**

<table>
<thead>
<tr>
<th>Type</th>
<th>Depth (inches)</th>
<th>Hydric Soil Present?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes □ No □</td>
</tr>
</tbody>
</table>

**Remarks:**

Gravel/road base at 7 inches

### Hydrology

**Wetland Hydrology Indicators:**

- Surface Water (A1)
- High Water Table (A2)
- Water Mark (B1)
- Sediment Deposits (B2)
- Water Stains (B3)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators:**

- Water-5tained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Field Observations:**

- Surface Water Present? Yes □ No □
- High Water Table Present? Yes □ No □
- Saturation Present? Yes □ No □ (Includes capillary fringe)

**Wetland Hydrology Present?** Yes □ No □

**Remarks:**
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 28 Sept, 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 26

Investigator(s): M. Widdowson, S. Spooner  
Section, Township, Range:

Landform (hillslope, terrace, etc.):  
Local relief (concave, convex, none):  
Slope (%):

Subregion (LRR): A: Northwest Forests and Coast  
Lat:  
Long:  
Datum:

Soil Map Unit Name:  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Remarks: Willow woodland/Swamp - Salix lasiandra
Upland_Wetland Sampling Point 25 on shoulder

Hydrophytic Vegetation Categories

<table>
<thead>
<tr>
<th>Tree Stratum</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix lasiandra</td>
<td>80</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix lasiandra</td>
<td>80</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Grapsus partana</td>
<td>20</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>3. Rubus ulmarius</td>
<td>15</td>
<td>N</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Sambucus racemosa</td>
<td>5</td>
<td>N</td>
<td>FACU</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Equisetum telmateia</td>
<td>10</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Dryopteris arguta</td>
<td>1</td>
<td>N</td>
<td>UPL</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
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<tr>
<td>6.</td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Woody Vine Stratum

<table>
<thead>
<tr>
<th>Woody Vine Stratum</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum: 89

Remarks:

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >60%
3. Prevalence Index is ≥3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants

Hydrophytic Vegetation Present? Yes ______ No ______

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix Color (moist)</th>
<th>%</th>
<th>Redox Features Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>10YR 3/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
- Type: 
- Depth (Inches): 
- Hydric Soil Present? Yes [ ] No [X]

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C8)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Ralsted Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:
- Surface Water Present? Yes [X] No [ ]
- Water Table Present? Yes [X] No [ ]
- Saturation Present? Yes [X] No [ ]

Depth (Inches): 10

Wetland Hydrology Present? Yes [ ] No [X]

Remarks:

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

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
City/County: Manchester / MENDOCINO
State: CA
Sampling Date: 10 Oct 2018
Sampling Point: 27

Investigator(s): M. Widdowson, J. Mayor
Section, Township, Range:
Landform (hillslope, terrace, etc.): depression
Local relief (concave, convex, none): concave
Slope (%): 1

Subregion (LRR): A: Northwest Forests and Coast
Lat: Long: Datum:
Soil Map Unit Name: 225- Windy Hollow Farm, 0-50 slopes
NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes No
Are “Normal Circumstances” present? Yes No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is the Sample Area within a Wetland?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Remarks:
Local depression within a shallow drainage slide adjacent to road.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 3 x 10 ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ficus pumilus</td>
<td>10 N FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Lotus corniculata</td>
<td>30 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Lythrum hyssopifolium</td>
<td>2 N OBL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Juncus bufonius</td>
<td>20 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Helianthus borealis</td>
<td>10 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Plantago lanceolata</td>
<td>2 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Vulpia bromoides</td>
<td>2 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Leontodon scariosus</td>
<td>1 N FACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Solidago fasciculata</td>
<td>1 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Baja minor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Rapid Test for Hydrophytic Vegetation</td>
</tr>
<tr>
<td>2 - Dominance Test is &gt;50%</td>
</tr>
<tr>
<td>3 - Prevalence Index is ≤3.0</td>
</tr>
<tr>
<td>4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</td>
</tr>
<tr>
<td>5 - Wetland Non-Vascular Plants</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks:</th>
</tr>
</thead>
</table>

Hydrophytic Vegetation Present? Yes No
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>10/12%</td>
<td>10/12%</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Rec Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: __________________
Depth (inches): _______________

Hydric Soil Present? Yes ☑ No _____

Remarks: ____________________

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply):

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Secondary Indicators (2 or more required):

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☑ No _____ Depth (inches): _______________
Water Table Present? Yes ☑ No _____ Depth (inches): none to 12
Saturation Present? Yes ☑ No _____ Depth (inches): none to 12

Wetland Hydrology Present? Yes ☑ No _____

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

Remarks: ____________________

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 10 Oct 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 35

Investigator(s): M. Widdowson, J. Mayor  
Section, Township, Range:  
Landform (hillslope, terrace, etc.):  
Local relief (concave, convex, none):  
Slope (%): 2

Subregion (LRR): A: Northwest Forests and Coast  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 225 – Windy Hollow loamy O 57 slopes  
NW classification:  

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐  
Hydric Soil Present? Yes ☑ No ☐  
Wetland Hydrology Present? Yes ☑ No ☐  
Is the Sample Area within a Wetland? Yes ☐ No ☑

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _______ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 2 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (AB)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _______ )</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>50 Y FACW</td>
</tr>
<tr>
<td>2.</td>
<td>30 Y FAC</td>
</tr>
<tr>
<td>3.</td>
<td>1 N UPL</td>
</tr>
<tr>
<td>4.</td>
<td>5 N FAC</td>
</tr>
<tr>
<td>5.</td>
<td>4 N FAC</td>
</tr>
<tr>
<td>6.</td>
<td>5 N FAC</td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>Woody Vine Stratum (Plot size: _______ )</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>10</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
</tr>
</tbody>
</table>

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index ≤3.0
4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5 - Wetland Non-Vascular Plants1

Problematic Hydrophytic Vegetation1 (Explain)

1Indicators of hydrosoil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR 7/7</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-10</td>
<td>10YR 8/1</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

### Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

### Restrictive Layer (if present):

- **Type:**
- **Depth (inches):**

**Hydric Soil Present?** Yes ✔ No ❌

**Remarks:**

### HYDROLOGY

### Wetland Hydrology Indicators:

#### Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Nitrification (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

#### Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

#### Field Observations:

- **Surface Water Present?** Yes ✔ No ❌ **Depth (inches):**
- **Water Table Present?** Yes ✔ No ❌ **Depth (inches):**
- **Saturation Present?** Yes ✔ No ❌ **Depth (inches):**

- **Wetland Hydrology Present?** Yes ✔ No ❌

**Remarks:**

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

**US Army Corps of Engineers Western Mountains, Valleys, and Coast – Version 2.0**
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

<table>
<thead>
<tr>
<th>Project/Site:</th>
<th>RTI Manchester</th>
<th>City/County:</th>
<th>Manchester / MENDOCINO</th>
<th>Sampling Date:</th>
<th>Oct 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant/Owner:</td>
<td>RTI / Caltrans, private</td>
<td>Section, Township, Range:</td>
<td></td>
<td>State:</td>
<td>CA</td>
</tr>
<tr>
<td>Investigator(s):</td>
<td>M. Widdowson, J. Mayor</td>
<td>Landform (hillside, terrace, etc.):</td>
<td>roadside</td>
<td>Local relief (concave, convex, none):</td>
<td>none</td>
</tr>
<tr>
<td>Subregion (LRR):</td>
<td>A: Northwest Forests and Coast</td>
<td>Lat:</td>
<td></td>
<td>Long:</td>
<td></td>
</tr>
<tr>
<td>Soil Map Unit Name:</td>
<td>144e - Llano clay loam, 0-5% slope</td>
<td>NRI classification:</td>
<td></td>
<td>Datum:</td>
<td></td>
</tr>
</tbody>
</table>

Are climatic / hydrologic conditions on the site typical for this time of year? Yes □ No □ (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes □ No □

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes □ No □</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes □ No □</th>
</tr>
</thead>
</table>

Remarks:
* = Assumed hydrology during the wet season based on patterns of vegetation and aquatic drainage to this location. Small patch of hydrophytic vegetation surrounded by FAC plants and FAC plants.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 4x6 ft)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Symphyotrichum oblongifolium</td>
<td>60 Y FACW</td>
</tr>
<tr>
<td>2. Robynia viscosa</td>
<td></td>
</tr>
<tr>
<td>3. Holcus lanatus</td>
<td>40 Y FAC</td>
</tr>
<tr>
<td>4. Juncus balticus</td>
<td>11 FACW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 4x6 ft)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>20 FACW</td>
</tr>
<tr>
<td>2.</td>
<td>20 FACW</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum 0

Remarks:

DOMINANCE TEST WORKSHEET:
- Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
- Total Number of Dominant Species Across All Strata: 3 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

PREVALENCE INDEX WORKSHEET:
- Total % Cover of: Multiply by:
  - OBL species x 1 =
  - FACW species x 2 =
  - FAC species x 3 =
  - FACU species x 4 =
  - UPL species x 5 =
- Column Totals: (A) (B)
- Prevalence Index = B/A =

HYDROPHYTIC VEGETATION INDICATORS:
- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test Is >50%
- 3 - Prevalence Index Is ≤3.0
- 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants
- 6 - Problematic Hydrophytic Vegetation (Explain)

Hydrophytic Vegetation Present? Yes □ No □
## SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)  
- Histic Epipedon (A2)  
- Black Histic (A3)  
- Hydrogen Sulfide (A4)  
- Depleted Below Dark Surface (A11)  
- Thick Dark Surface (A12)  
- Sandy Mucky Mineral (S1)  
- Sandy Gleyed Matrix (S4)

### Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)  
- Rec Parent Material (TF2)  
- Very Shallow Dark Surface (TF12)  
- Other (Explain in Remarks)

### Hydric Soil Present?:

- Yes √
- No

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)  
- High Water Table (A2)  
- Saturation (A3)  
- Water Marks (B1)  
- Sediment Deposits (B2)  
- Drift Deposits (B3)  
- Algal Mat or Crust (B4)  
- Iron Deposits (B5)  
- Surface Soil Cracks (B6)  
- Inundation Visible on Aerial Imagery (B7)  
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)  
- Salt Crust (B11)  
- Aquatic Invertebrates (B13)  
- Hydrogen Sulfide Odor (C1)  
- Oxidized Rhizospheres along Living Roots (C3)  
- Presence of Reduced Iron (C4)  
- Recent Iron Reduction in Tilled Soils (C5)  
- Stunted or Stressed Plants (D1) (LRR A)  
- Other (Explain in Remarks)  
- FAC-Neutral Test (D6)  
- Raised Ant Mounds (D6) (LRR A)  
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ☑ No ☒ Depth (inches): none to 15
- Water Table Present? Yes ☑ No ☒ Depth (inches): none to 15
- Saturation Present? Yes ☑ No ☒ Depth (inches): none to 15 (includes capillary fringe)

**Wetland Hydrology Present?:**

- Yes ☑
- No ☒

**Remarks:**

*Dry season = problematic hydrology*
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Sampling Date: 11 Oct 2018
Applicant/Owner: RTI / Caltrans, private
State: CA
Sampling Point: 30
Investigator(s): M. Widdowson, J. Mayor
Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): concave
Slope (%): 0
Subregion (LRR): A: Northwest Forests and Coast
Lat:
Long:
Datum:
Submap Unit Name: 144 - Pleasureville clay shallow, 0.57 Ac slopes
NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes □ No □ (If no, explain in Remarks.)
Are Vegetation ______ Soil ______ or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes □ No □
Are Vegetation ______ Soil ______ or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes □ No □</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes □ No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes □ No □</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes □ No □</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: * Assumed rainy season hydrology.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _______ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 5 (B)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index of:</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>Multiply by:</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals:</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td>(A) (B)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A = 

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test Is >50%
3. Prevalence Index is ≤3.01
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants

Problematic Hydrophytic Vegetation (Explain)

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes □ No □

% Bare Ground in Herb Stratum 15

Remarks:
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc.</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10% 60%</td>
<td>10% 75% 4% 15%</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>10% 60%</td>
<td>85% 75% 4% 15%</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-12</td>
<td>10% 60%</td>
<td>80% 75% 4% 20%</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2Location: PL=Pore Lining, ML=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (If present):**

Type: ________________

Depth (inches): ________________

Hydric Soil Present? Yes [ ] No [ ]

**HYDROLOGY**

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Presence of Reduced Iron (C4)
- Oxidized Rhizospheres along Living Roots (C3)
- Recent Iron Reduction in Tilled Soils (D1) (LRR A)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D6)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes [ ] No [ ] Depth (inches): ________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes [ ] No [ ] Depth (inches): ________________</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes [ ] No [ ] Depth (inches): ________________</td>
</tr>
</tbody>
</table>

Wetland Hydrology Present? Yes [ ] No [ ]

**Remarks:**

* Dry season hydrology is problematic

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Sampling Date: 11 Oct 2018
Applicant/Owner: RTI / Caltrans, private
State: CA
Sampling Point: 31
Investigator(s): M. Widdowson, J. Mayor
Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A: Northwest Forests and Coast
Lat: Long: Datum:
Soil Map Unit Name: 164 - Pluvialite clay loam, 0-5% slope NW classification:
Are climatic/hydrologic conditions on the site typical for this time of year? Yes __ No __ (If no, explain in Remarks.)
Are Vegetation __, Soil __, or Hydrology __ significantly disturbed? Are “Normal Circumstances” present? Yes __ No __
Are Vegetation __, Soil __, or Hydrology __ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes __ No __</th>
<th>Wetland Hydrology Present?</th>
<th>Yes __ No __</th>
</tr>
</thead>
</table>

Is the Sampled Area within a Wetland? Yes __ No __

Remarks: In broad swale with mixed vegetation

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size:__ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size:__ )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5' radius)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thalictrum rhodocarpum</td>
<td>5 % FAC</td>
</tr>
<tr>
<td>2. Hypericum patulum</td>
<td>52 % FAC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody/Vine Stratum (Plot size: 10' radius)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>80 % FAC</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum 45

Remarks: Veg is mixed

Dominance Test worksheet:

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>1</th>
<th>(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>2</td>
<td>(B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>50</td>
<td>(AB)</td>
</tr>
</tbody>
</table>

Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>(A) =</td>
</tr>
<tr>
<td></td>
<td>(E) =</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation1 (Explain)

Hydrophytic Vegetation Present? Yes __ No __

1Indicators of hydrologic soil and wetland hydrology must be present, unless disturbed or problematic.
## SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>10YR 3/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>10YR 3/2</td>
<td>95</td>
<td></td>
<td>7.5YR 4/6</td>
<td>5</td>
<td></td>
<td>C</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.12</td>
<td>10YR 2/1</td>
<td>80</td>
<td></td>
<td>7.5YR 4/6</td>
<td>20</td>
<td></td>
<td>C</td>
<td>M</td>
<td></td>
<td><em>wet clay</em></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epepedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Loamy Mucky Mineral (F-1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

### Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
<th>Hydric Soil Present?</th>
<th>Yes ✓</th>
<th>No</th>
</tr>
</thead>
</table>

### HYDROLOGY

### Wetland Hydrology Indicators:

#### Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

#### Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

### Field Observations:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes ✓</th>
<th>No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes ✓</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes ✓</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>(includes capillary fringe)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Remarks:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / MENDOCINO
Sampling Date: 11 Oct 2018

Applicant/Owner: RTI / Caltrans, private
State: CA

Investigator(s): M. Widdowson, J. Mayor
Sampling Point: 32

Section, Township, Range:

Landform (hillslope, terrace, etc.): __________ Local relief (concave, convex, none): __________ Slope (%): __________

Subregion (LRR): A: Northwest Forests and Coast
Lat: __________ Long: __________ Datum: __________

Soil Map Unit Name: __________ NWI classification: __________

Are climatic / hydrologic conditions on the site typical for this time of year? Yes __________ No __________ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes __________ No __________

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes __________ No __________

Hydric Soil Present? Yes __________ No __________

Wetland Hydrology Present? Yes __________ No __________

Is the Sampled Area within a Wetland? Yes __________ No __________

Remarks: __________

Dry season delineation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

| 1.       |          |           |
| 2.       |          |           |
| 3.       |          |           |
| 4.       |          |           |

Sapling/Shrub Stratum (Plot size: __________)

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

| 1.       |          |           |
| 2.       |          |           |
| 3.       |          |           |
| 4.       |          |           |

Herb Stratum (Plot size: 5ft radius)

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

| 1. Anthriscum odoratum | 10 | Y | FACU |
| 2. Helops lacatort | 20 | Y | FAC |
| 3. Viola lutea | 41 | Y | NL |

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

| 4.       |          |           |
| 5.       |          |           |

Woody Vine Stratum (Plot size: 5ft radius)

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

| 1. Rubus ursinus | 30 | Y | FACU |
| 2.               | 70 | Y | FAC |

<table>
<thead>
<tr>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Cover</td>
<td>Species?</td>
<td>Status</td>
</tr>
</tbody>
</table>

Remarks: __________

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: __________ (A)

Total Number of Dominant Species Across All Strata: __________ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: __________ (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species _______ x 1 = _______ FACW species _______ x 2 = _______ FAC species _______ x 3 = _______ FACU species _______ x 4 = _______

UPL species _______ x 5 = _______

Column Totals: _______ (A) _______ (B)

Prevalence Index = B/A = _______

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants

Problematic Hydrophytic Vegetation (Explain)

% Bare Ground in Herb Stratum 70

Hydrophytic Vegetation Present? Yes __________ No __________
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inches)</td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-12</td>
<td>101R 5y</td>
<td>100</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)  Sandy Redox (S5)
- Histic Epipedon (A2)  Stripped Matrix (S6)
- Black Histic (A3)  Loamy Mucky Mineral (F1) (except MLRA 1)
- Hydrogen Sulfide (A4)  Loamy Gleyed Matrix (F2)
- Depleted Below Dark Surface (A11)  Depleted Matrix (F3)
- Thick Dark Surface (A12)  Redox Dark Surface (F6)
- Sandy Mucky Mineral (S1)  Depleted Dark Surface (F7)
- Sandy Gleyed Matrix (S4)  Redox Depressions (F8)

**Indicators for Problematic Hydric Soils**:  
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: __________________________
- Depth (inches): __________
- Hydric Soil Present? Yes ______ No ___

** Remarks:**

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D6)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ______ No ___ Depth (inches): ______
- Water Table Present? Yes ______ No ___ Depth (inches): ______
- Saturation Present? Yes ______ No ___ Depth (inches): ______

(includes capillary fringe)

**Wetland Hydrology Present?** Yes ______ No ___

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

Remarks:

* dry season delineation
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
City/County: Manchester / Mendocino
Sampling Date: Oct 2015
Applicant/Owner: RTI / Caltrans, private
State: CA
Sampling Point: 33
Investigator(s): M. Widowson, J. Mayor
Section, Township, Range:
Landform (hillslope, terrace, etc.): concave
Local relief (concave, convex, none): concave
Subregion (LRR): A, Northwest Forests and Coast
Lat: Long: Datum:
Soil Map Unit Name: 414 - Plumasville clay loams, 0.57 (NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? Yes No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Is the Sampled Area within a Wetland? Yes No

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 ft radius)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Carya peregrina</td>
<td>25%</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Leonotis salitii</td>
<td>20%</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>3. Ptelea fasciculata</td>
<td>5%</td>
<td>N</td>
<td>FAC</td>
</tr>
<tr>
<td>4. Juniperus communis</td>
<td>5%</td>
<td>N</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Quercus kelloggii</td>
<td>20%</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>6. Aquilegia formosa</td>
<td>5%</td>
<td>N</td>
<td>FAC</td>
</tr>
<tr>
<td>7. Stachys repta</td>
<td>5%</td>
<td>N</td>
<td>FAC</td>
</tr>
<tr>
<td>8. Baccharis pilosarius</td>
<td>5%</td>
<td>N</td>
<td>FAC</td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Woody/Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
  ✓ 2. Dominance Test is >50%
  3. Prevalence Index is ≤3.0
  4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
  5. Wetland Non-Vascular Plants
  6. Problematic Hydrophytic Vegetation (Explain)

Hydrophytic Vegetation Present? Yes No
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-10</td>
<td>10%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-16</td>
<td>10%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histosol Epipedon (A2)
- Black Histosol (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes ✓ No

**Remarks:**

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ani Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ✓ No Depth (inches): 
- Water Table Present? Yes ✓ No Depth (inches): 
- Saturation Present? Yes ✓ No Depth (inches): 
- (includes capillary fringe)

**Wetland Hydrology Present?** Yes ✓ No

**Remarks:**

* Hydromorphy assured in wet season.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENOCINO  
**Sampling Date:** 10 / Oct 2018  
**Applicant/Owner:** RTI / Caltrans, private  
**State:** CA  
**Investigator(s):** M. Widdowson, J. Mayor  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):** adjacent to swale  
**Local relief (concave, convex, none):** sl / concave  
**Slope (%):** 1  
**Subregion (LRR):** A: Northwest Forests and Coast  
**Lat:**  
**Long:**  
**Datum:**  
**Soil Map Unit Name:** 166 – Eucalyptus clay loam 0.5% slopes  
**NW classification:**  
**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes [ ] No [ ] (If no, explain in Remarks.)  
**Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed?**  
**Are "Normal Circumstances" present?** Yes [ ] No [ ]  
**Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic?** (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [ ] No [ ]</th>
<th>CZ Wetland</th>
<th>Yes [ ] No [ ]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes [ ] No [ ]</th>
</tr>
</thead>
</table>

**Remarks:**

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 1 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (AVB)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index: Multiply by:</td>
</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: ______)</td>
<td></td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>Herb Stratum (Plot size: 5 ft radius)</td>
<td>Total Cover</td>
<td></td>
<td></td>
<td>Column Totals: (A) (B)</td>
</tr>
<tr>
<td>1. Holcus lanatus</td>
<td>85 Y FAC</td>
<td></td>
<td></td>
<td>Prevalence Index = B/A =</td>
</tr>
<tr>
<td>2. Plantago lanceolata</td>
<td>5 N FACU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Lupinus polyphyllus</td>
<td>5 N FACU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Rubus ursinus</td>
<td>21 N FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Vine Stratum (Plot size: ______)</td>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation  
2. Dominance Test is >50%  
3. Prevalence Index is ≤3.0  
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  
5. Wetland Non-Vascular Plants  
6. Problematic Hydrophytic Vegetation (Explain)

**Hydrophytic Vegetation Present?** Yes [ ] No [ ]

---

US Army Corps of Engineers
   Western Mountains, Valleys, and Coast – Version 2.0
## SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19</td>
<td>10FR 32</td>
<td>0</td>
<td>Loam</td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: __________
- Depth (Inches): _______

**Hydric Soil Present?** Yes ☑️ No ☐

**Remarks:**

## HYDROLOGY

**Wetland Hydrology Indicators:**

- Primary Indicators (minimum of one required; check all that apply)
  - Surface Water (A1)
  - High Water Table (A2)
  - Saturation (A3)
  - Water Marks (B1)
  - Sediment Deposits (B2)
  - Drift Deposits (B3)
  - Algal Mat or Crust (B4)
  - Iron Deposits (B5)
  - Surface Soil Cracks (B6)
  - Induration Visible on Aerial Imagery (B7)

- Secondary Indicators (2 or more required)
  - Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
  - Drainage Patterns (B10)
  - Dry-Season Water Table (C2)
  - Saturation Visible on Aerial Imagery (C9)
  - Geomorphic Position (D2)
  - Shallow Aquitard (D3)
  - FAC-Neutral Test (D5)
  - Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ☑️ No ☐ Depth (inches): None ‡to 12
- Water Table Present? Yes ☑️ No ☐ Depth (inches): None ‡to 12
- Saturation Present? (includes capillary fringe) Yes ☑️ No ☐ Depth (inches): None ‡to 12

**Wetland Hydrology Present?** Yes ☑️ No ☐

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

**Remarks:**

---

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

<table>
<thead>
<tr>
<th>Project/Site:</th>
<th>RTI Manchester</th>
<th>City/County:</th>
<th>Manchester / MENDOCINO</th>
<th>Sampling Date:</th>
<th>Oct 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant/Owner:</td>
<td>RTI / Caltrans, private</td>
<td>State:</td>
<td>CA</td>
<td>Sampling Point:</td>
<td>35</td>
</tr>
<tr>
<td>Investigator(s):</td>
<td>M. Widdowson, J. Mayor</td>
<td></td>
<td></td>
<td>Section, Township, Range:</td>
<td></td>
</tr>
<tr>
<td>Landform (hillslope, terrace, etc.):</td>
<td>1%</td>
<td>Local relief (conce, convex, none):</td>
<td>1%</td>
<td>Slope (%):</td>
<td>1</td>
</tr>
<tr>
<td>Subregion (LRR):</td>
<td>A: Northwest Forests and Coast</td>
<td>Lat:</td>
<td></td>
<td>Long:</td>
<td>Datum:</td>
</tr>
<tr>
<td>Soil Map Unit Name:</td>
<td>164- Plumeville claypan, 0.5% slopes</td>
<td>NWI classification:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes ☑ No ☐ (If no, explain in Remarks.)

**Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present?** Yes ☑ No ☐

**Are Vegetation____, Soil____, or Hydrology____ naturally problematic?** (If needed, explain any answers in Remarks.)

---

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No ☐</th>
<th>CZ Wetland</th>
<th>Yes ☑ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No ☐</td>
<td>Is the Sampled Area</td>
<td>within a Wetland?</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No ☐</td>
<td>Remarks:</td>
<td>In the shallow zone, some drainage.</td>
</tr>
</tbody>
</table>

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

| Sapling/Shrub Stratum (Plot size: ______) | | |
|-------------------------------------------| | |
| 1.                                         |                  |                   |
| 2.                                         |                  |                   |
| 3.                                         |                  |                   |
| 4.                                         |                  |                   |

= Total Cover

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ______)</th>
<th>Holcus lanatus</th>
<th></th>
<th>FAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>40 Y FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>40 Y FACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>21 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>61 N FAC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Woody Vine Stratum (Plot size: ______) | | |
|-----------------------------------------| | |
| 1.                                       |                  |                   |
| 2.                                       |                  |                   |

= Total Cover

| % Bare Ground in Herb Stratum | 18 |

**Remarks:**

---

### Dominance Test worksheet:

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>1 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>2 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>50 (AB)</td>
</tr>
</tbody>
</table>

### Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>(A) (B)</td>
</tr>
<tr>
<td>Prevalence Index = B/A =</td>
<td></td>
</tr>
</tbody>
</table>

### Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0
- 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation (Explain)

**Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

---

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
SOIL

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Location</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>10YR 1/4</td>
<td>45</td>
<td>2.5YR 1/2</td>
<td>55</td>
<td>2</td>
<td>e</td>
<td>loam</td>
<td>concentration</td>
</tr>
<tr>
<td>6-12</td>
<td>10YR 1/2</td>
<td>45</td>
<td>4R 5/2</td>
<td>50</td>
<td>5</td>
<td>m</td>
<td>loam</td>
<td>dull menses</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Eutrope (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surf (A11)
- Thick Dark Surf (A12)
- Sandy Mucky Surf (S1)
- Sandy Gleyed Surf (S4)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Hydric Soil Present? Yes ☑ No

Restrictive Layer (if present):
Type: ____________________________
Depth (Inches): ____________________

Remarks: __________________________

HYDROLOGY

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

Field Observations:
Surface Water Present? Yes ☑ No   Depth (inches): none to 12
Water Table Present? Yes ☑ No   Depth (inches): none to 12
Saturation Present? Yes ☑ No   Depth (inches): none to 12
(includes capillary fringe)

Wetland Hydrology Present? Yes ☑ No   

Remarks: __________________________

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
Investigator(s): M. Widdowson, J. Mayor
City/County: Manchester / MENDOCINO
State: CA
Sampling Date: 11 Oct 2018
Sampling Point: 36
Section, Township, Range: 
Landform (hillslope, terrace, etc.): Shallow Swale
Local relief (concave, convex, none): None
Slope (%): 1
Subregion (LRR): A: Northwest Forests and Coast
Lat: 40-05-2 Slopes
Long: "M" Datum: 
Soil Map Unit Name: Mule-Flumeville Clay Loam, 0-5" slopes
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No ✓ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes No ✓
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ✓ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ✓ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ✓ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ✓ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______) Absolute % Cover Dominant Species? Indicator Status
1. 
2. 
3. 
4. 
5. 

Total Cover = ______

Sapling/Herb Stratum (Plot size: ______) Absolute % Cover Dominant Species? Indicator Status
1. Holcus lanatus 40  Y FAC
2. Plantago lanceolata 35  Y FAC
3. Rumex acetosa 2  Y FAC
4. Lotus corniculatus 3  Y FAC
5. Linnaea borealis 41  N FAC
6. Anthoxanthum odoratum 10  N FAC
7. 
8. 
9. 
10. 
11. 

Total Cover = ______

Herb Stratum (Plot size: 5'H radius) Absolute % Cover Dominant Species? Indicator Status
1. Holcus lanatus 40  Y FAC
2. Plantago lanceolata 35  Y FAC
3. Rumex acetosa 2  Y FAC
4. Lotus corniculatus 3  Y FAC
5. Linnaea borealis 41  N FAC
6. Anthoxanthum odoratum 10  N FAC
7. 
8. 
9. 
10. 
11. 

Total Cover = ______

Woody Vine Stratum (Plot size: ______) Absolute % Cover Dominant Species? Indicator Status
1. % Bare Ground in Herb Stratum 10
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 

Total Cover = ______

Remarks: 

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:
OBL species x 1 = 
FACW species x 2 = 
FAC species x 3 = 
FACU species x 4 = 
UPL species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation

Hydrophytic Vegetation Present? Yes No ✓

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Version 2.0
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td></td>
<td>YVR, 5%</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)         Sandy Redox (S5)
- Histic Epipedon (A2)  Stripped Matrix (S8)
- Black Histic (A3)     Loamy Mucky Mineral (F1) (except MLRA 1)
- Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)
- Depleted Below Dark Surface (A11) Depleted Matrix (F3)
- Thick Dark Surface (A12) Redox Dark Surface (F6)
- Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)
- Sandy Gleyed Matrix (S4) Redox Depressions (F8)

**Restrictive Layer (if present):**
- Type: ____________________
- Depth (Inches): ____________________
- Hydric Soil Present? Yes ☑ No

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

<table>
<thead>
<tr>
<th>Primary Indicators (minimum of one required; check all that apply)</th>
<th>Secondary Indicators (2 or more required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td></td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Salt Crust (B11)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Recent Iron Reduction in Tilled Soils (C8)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Sparsely Vegetated Concave Surface (B8)</td>
<td></td>
</tr>
</tbody>
</table>

**Field Observations:**
- Surface Water Present? Yes ☑ No
- Water Table Present? Yes ☑ No
- Saturation Present? Yes ☑ No (includes capillary fringe)

**Remarks:**

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

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
Investigator(s): M. Widdowsen, J. Mayor
Landform (hillslope, terrace, etc.): roadside bottom floorplain
Subregion (LRR): A: Northwest Forests and Coast

Hydric Soil Present? Yes □ No □ * Is the Sampled Area within a Wetland? Yes □ No □
Hydrophytic Vegetation Present? Yes □ No □
Wetland Hydrology Present? Yes □ No □

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Remarks:
* Sleep bank below roadside willow thicket = unable to collect soils.

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 20 x 40)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix × hians</td>
<td>70</td>
<td>Y</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Salix lasioidea (lavina)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 20 x 40)</th>
<th>Absolute % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix hookeriense</td>
<td>30</td>
<td>Y</td>
</tr>
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<td>2.</td>
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<td>5.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 x 4)</th>
<th>Absolute % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Delairea odorata</td>
<td>100</td>
<td>N</td>
</tr>
<tr>
<td>2.</td>
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<td>5.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 20 x 40)</th>
<th>Absolute % Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>50</td>
<td>Y</td>
</tr>
<tr>
<td>2. Rubus parviflorus</td>
<td>50</td>
<td>N</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum 100

Remarks:
* Not included because unable to tell were it is rooted, therefore not representing the ecology.
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
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</tbody>
</table>

1. **Type:** C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2. **Location:** PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Primary Indicators (minimum of one required; check all that apply)
  - Surface Water (A1)
  - High Water Table (A2)
  - Saturation (A3)
  - Water Marks (B1)
  - Sediment Deposits (B2)
  - Drift Deposits (B3)
  - Algal Mat or Crust (B4)
  - Iron Deposits (B5)
  - Surface Soil Cracks (B6)
  - Inundation Visible on Aerial Imagery (B7)
  - Sparsely Vegetated Concave Surface (B8)

- Secondary Indicators (2 or more required)
  - Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
  - Salt Crust (B11)
  - Aquatic Invertebrates (B13)
  - Hydrogen Sulfide Odor (C1)
  - Oxidized Rhizospheres along Living Roots (C3)
  - Presence of Reduced Iron (C4)
  - Recent Iron Reduction in Tilled Soils (C5)
  - Stunted or Stressed Plants (D1) (LRR A)
  - Other (Explain in Remarks)

**Field Observations:**

- Surface Water Present? Yes No
- Water Table Present? Yes No
- Saturation Present? Yes No (includes capillary fringe)

**Wetland Hydrology Present?**

- Yes No

### Remarks:

- No ponding.
- Landscape setting—steep bank—would not pond or collect water
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester
Applicant/Owner: RTI / Caltrans, private
Investigator(s): M. Widdowson, J. Mayor
Section, Township, Range:
Landform (hillslope, terrace, etc.): coastal terrace
Local relief (concave, convex, none): convex
Subregion (LRR): A. Northwest Forests and Coast
Soil Map Unit Name: 74Y- Tapaques, 0-15% Slopes
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☑ No ☐
Are Vegetation, Soil, or Hydrology naturally problematic? Yes ☑ No ☐

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐
Hydric Soil Present? Yes ☑ No ☐
Wetland Hydrology Present? Yes ☑ No ☐
Is the Sampled Area within a Wetland? Yes ☑ No ☐
Remarks: Dry

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 x 30 ft)
1. outside plot + right of way
2. 
3. 
4. 

Absolute % Cover

Species? Dominant Indicator Status
Y FACW

= Total Cover

= Total Cover

Herb Stratum (Plot size: 5 x 10 ft)
1. 
2. 
3. 
4. 
5. 

Hydrophytic Vegetation Indicators:
1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤30%
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc.</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>10YR 3/6</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8 - 12</td>
<td>10YR 4/7</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 12</td>
<td>10YR 5/8</td>
<td>90</td>
<td>10YR 5/4</td>
<td>30</td>
<td>Clay</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

2. Location: PL=Pore Lining, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: __________
- Depth (inches): __________
- Hydric Soil Present? Yes __________ No __________

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Slurried or Stressed Plants (D1) (LRR A)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- FAC-Neutral Test (D5)
- Falled Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes __________ No __________ Depth (inches): __________
- Water Table Present? Yes __________ No __________ Depth (inches): __________
- Saturation Present? Yes __________ No __________ Depth (inches): __________

**Wetland Hydrology Present?** Yes __________ No __________

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

**Remarks:**

Dry season condition

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

Project/Site: RTI Manchester  
Applicant/Owner: RTI / Caltrans, private  
City/County: Manchester / MENDOCINO  
State: CA  
Sampling Date: 12 Oct 2018  
Investigator(s): M. Widdowson, J. Mayor  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): Coastal Terrace  
Local relief (concave, convex, none): Convex  
Slope (%): 1  
Subregion (LRR): A: Northwest Forests and Coast  
Lat:  
Long:  
Datum:  
Soil Map Unit Name: 214 Torrey Pines, 0-15% slopes  
NWI classification:  
Are climatic / hydrologic conditions on the site typical for this time of year? Yes  Yes  No  (If no, explain in Remarks.)  
Are Vegetation, Soil, or Hydrology significantly disturbed?  
Are "Normal Circumstances" present? Yes  Yes  No  (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS** – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>CZ Wetland</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Remarks:**

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: 9 x 9ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>5.</td>
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</tr>
</tbody>
</table>

Tree Stratum (Plot size: 9 x 9ft)

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: 5 x 30ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Salix lasiophila</em></td>
<td>45</td>
<td>Y</td>
<td>FACW</td>
<td>2 (A)</td>
</tr>
<tr>
<td>2. <em>Trifolium subterraneum</em></td>
<td></td>
<td></td>
<td>UPL</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 5 x 10ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Carex durius</em></td>
<td>60</td>
<td>Y</td>
<td>OBL</td>
<td>2 (A)</td>
</tr>
<tr>
<td>2. <em>Agrostis stolonifera</em></td>
<td>&lt;1</td>
<td>FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <em>Phyllogonium aquaticum</em></td>
<td>&lt;1</td>
<td>FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <em>Juncus patens</em></td>
<td>&lt;1</td>
<td>FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. <em>Symphoricarpos chrysanthus</em></td>
<td>&lt;1</td>
<td>FAC</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 5 x 30ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Rubus viscosus</em></td>
<td>60</td>
<td>Y</td>
<td>FACW</td>
<td>2 (A)</td>
</tr>
</tbody>
</table>

**Remarks:**

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants

**Hydrophytic Vegetation Present?** Yes  Yes  No  

% Bare Ground in Herb Stratum 40
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>109R</td>
<td>95%</td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epepidon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: __________
- Depth (inches): __________

**Hydric Soil Present?** Yes ___ No __

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (minimum of one required; check all that apply):**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Induration Visible on Aerial Imagery (B7)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes ___ No ___ Depth (inches): __________
- Water Table Present? Yes ___ No ___ Depth (inches): __________
- Saturation Present? Yes ___ No ___ Depth (inches): __________
  (includes capillary fringe)

**Wetland Hydrology Present?** Yes ___ No ___

**Remarks:**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**Applicant/Owner:** RTI / Caltrans, private  
**Investigator(s):** M. Widdowson, J. Mayor  
**Landform (hillslope, terrace, etc.):** Cuesta Terrane  
**Subregion (LRG):** A: Northwest Forests and Coast  
**Soil Map Unit Name:** 214 - Torpaquents, 0-15% slopes  
**Sampling Date:** 12 Oct 2018  
**State:** CA  
**Sampling Point:** N  
**Section, Township, Range:**  
**Local relief (concave, convex, none):** convex  
**Slope (%):** 0  
**Lat:**  
**Long:**  
**Datum:**  
**NWI classification:**  

---

**SUMMARY OF FINDINGS** – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
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</table>

**Remarks:** Immediate edge of present.

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**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
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<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 3 x 10 ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brevis marrina</td>
<td>20 Y UPL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Plantago lanceolata</td>
<td>20 Y FACW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Holar thlas</td>
<td>5 N FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Aquatic stelae</td>
<td>5 N FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Aeglistes wilfling</td>
<td>&lt;1 N FAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
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<td>7.</td>
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<td>9.</td>
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<td>10.</td>
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<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: 6 x 15 ft)</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus primus</td>
<td>60</td>
</tr>
<tr>
<td>2.</td>
<td>10</td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum             | 40          |

**Remarks:**

---

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

**Hydrophytic Vegetation Present?** Yes  No
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histosol (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

*Cannot extract in roadside fill.*

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
<td>Depth (inches):</td>
</tr>
</tbody>
</table>

**Wetland Hydrology Present?**

**Remarks:**

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

Remarks:
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**Sampling Date:** 12, Oct 2018  
**Applicant/Owner:** RTI / Caltrans, private  
**State:** CA  
**Sampling Point:** 41  
**Investigator(s):** M. Widdowson, J. Mayor  
**Section, Township, Range:**  
**Landform (hillside, terrace, etc.):**  
**Local relief (concave, convex, none):**  
**Slope (%):** 0  
**Subregion (LRR):** A: Northwest Forests and Coast  
**Lat:**  
**Long:**  
**Datum:**  
**Soil Map Unit Name:** 214 - Tropaquepts, 0-152 slopes  
**NM classification:**  

**Are climatic / hydrologic conditions on the site typical for this time of year?** Yes ☑ No (If no, explain in Remarks.)

**Are Vegetation, Soil, or Hydrology significantly disturbed?** Are "Normal Circumstances" present? Yes ☑ No

**SUMMARY OF FINDINGS** – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑</td>
<td>No</td>
</tr>
</tbody>
</table>

**Hydric Soil Present?** Yes ☑ No  
**Is the Sampled Area within a Wetland?** Yes ☑ No

**Remarks:**  
* Assured hydrology during rainy season.

---

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ___________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum (Plot size: ___________ )**

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 6 x 10 ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Holcus lanatus</td>
<td>50 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Juncus patens</td>
<td>10 N FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Juncus effusus</td>
<td>0-50 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
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<td></td>
<td></td>
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<tr>
<td>7.</td>
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<td></td>
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<tr>
<td>8.</td>
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<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Woody Vine Stratum (Plot size: 6 x 10 ft)**

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: 6 x 10 ft)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>5</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**% Bare Ground in Herb Stratum:** 10

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation  
2. Dominance Test is >50%  
3. Prevalence Index is ≤3.0  
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  
5. Wetland Non-Vascular Plants  
6. Problematic Hydrophytic Vegetation (Explain)

**Hydrophytic Vegetation Present?** Yes ☑ No

---

**Dominance Test worksheet:**

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>2 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>100</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>100</td>
</tr>
</tbody>
</table>

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>OBL species</th>
<th>FACW species</th>
<th>FAC species</th>
<th>FACU species</th>
<th>UPL species</th>
</tr>
</thead>
<tbody>
<tr>
<td>x 1 =</td>
<td>x 2 =</td>
<td>x 3 =</td>
<td>x 4 =</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column Totals:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) =</td>
<td>(B) =</td>
</tr>
</tbody>
</table>

**Prevalence Index:** B/A = 

---

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.*

---

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Location</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10YR 6/6</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>10YR 6/4</td>
<td>30</td>
<td>85</td>
<td>M</td>
<td>5YR 5/4</td>
<td>15</td>
<td>C</td>
<td>m</td>
<td>clay-loam</td>
<td></td>
</tr>
</tbody>
</table>

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils1:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

2Location: PL=Pore Lining, M=Matrix.

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes ☑ No ☐ Depth (inches):
- Water Table Present? Yes ☑ No ☐ Depth (inches): no water
- Saturation Present? Yes ☑ No ☐ Depth (inches): no water

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

- Remarks: *Dry season delineation"
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENOCINO  
**Sampling Date:** Oct 2016

**Applicant/Owner:** RTI / Caltrans, private  
**State:** CA  
**Sampling Point:**  

**Investigator(s):** M. Widdowson, J. Mayor  
**Section, Township, Range:**  

**Landform (hillslope, terrace, etc.):** Coastal terrace  
**Local relief (concave, convex, none):** None  
**Slope (%):** 0

**Subregion (LRR):** A: Northwest Forests and Coast  
**Let:**  
**Long:**  
**Datum:**

**Soil Map Unit Name:** 216 - Tropaeo., 0-15% slopes  
**NWI classification:**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____ or Hydrology _____ significantly disturbed? Are “Normal Circumstances” present? Yes ☑ No ☐ (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑</th>
<th>No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑</td>
<td>No ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑</td>
<td>No ☐</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**VEGETATION – Use scientific names of plants.**

**Tree Stratum** (Plot size:  )

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes ☑</td>
<td>No ☐</td>
</tr>
</tbody>
</table>

**Total Cover:**

**Sapling/Shrub Stratum** (Plot size:  )

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prunus californica</td>
<td>10 Y</td>
<td>UPL</td>
<td></td>
</tr>
<tr>
<td>Baccharis pilularis</td>
<td>10 Y</td>
<td>UPL</td>
<td></td>
</tr>
</tbody>
</table>

**Total Cover:**

**Herb Stratum** (Plot size:  )

<table>
<thead>
<tr>
<th>Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phleum neglectum</td>
<td>70 Y</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>Helianthus lanatus</td>
<td>20 Y</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>Anthoxanthum odorum</td>
<td>&lt;1</td>
<td>FACW</td>
<td></td>
</tr>
</tbody>
</table>

**Total Cover:**

| Woody Vine Stratum** (Plot size:  )
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Species</td>
<td>Absolute % Cover</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Rubus</td>
<td>50 Y</td>
</tr>
</tbody>
</table>

**Total Cover:**

**% Bare Ground in Herb Stratum:**

**Remarks:**

**Dominance Test worksheet:**

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>1 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>5 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>20% (A/B)</td>
</tr>
</tbody>
</table>

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column Totals:</th>
<th>(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence Index = B/A =</td>
<td></td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index is ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10YR 4.5</td>
<td>100</td>
<td></td>
<td>10YR 4.5</td>
<td>75</td>
<td></td>
<td>5YR 3.5</td>
<td>100</td>
<td>loam</td>
<td></td>
</tr>
<tr>
<td>10-18</td>
<td>10YR 4.5</td>
<td>20</td>
<td></td>
<td>5YR 3.5</td>
<td>100</td>
<td></td>
<td>c</td>
<td></td>
<td>loam</td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histodic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Glyated Matrix (S4)

Indicators for Problematic Hydric Soils²:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

Hydric Soil Present? Yes [ ] No [x]  

Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
</table>

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D3)
- FAC-Natural Test (D6)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes [x] No [ ] Depth (inches):  
- Water Table Present? Yes [x] No [ ] Depth (inches):  
- Saturation Present? Yes [x] No [ ] Depth (inches):  

Wetland Hydrology Present? Yes [x] No [ ]

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

Remarks:  
Dry season depletion
## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**State:** CA  
**Sampling Date:** 14 Oct 2018  
**Applicant/Owner:** RTI / Caltrans, private  
**Investigator(s):** M. Widdowson, J. Mayor  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):** coastal terrace  
**Local relief (concave, convex, none):** none  
**Slope (%):** 0%  
**Subregion (LRZ):** A: Northwest Forests and Coast  
**Lat:**  
**Long:**  
**Datum:**  
**Soil Map Unit Name:** 214 - Tropaeolaceae, 0-15' slopse  
**NW classification:**  
**Remarks:**

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 2 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td>= Total Cover</td>
<td></td>
<td></td>
<td>Prevalence Index worksheet:</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of:</td>
</tr>
<tr>
<td>1. Juncus effusus</td>
<td>50 Y FAC280</td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>2. Phragmites australis</td>
<td>5 N UPL</td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>3. Anthoxanthum odorum</td>
<td>3 N FAC</td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>4. Helianthus incurus</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: (A)</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td>(B) Prevalence Index = B/A =</td>
</tr>
</tbody>
</table>

### Hydropytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is >50%
3. Prevalence Index ≤3.0
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation (Explain)

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: _______)</th>
<th>% Bare Ground in Herb Stratum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rubus ursinus</td>
<td>60 = Total Cover</td>
</tr>
<tr>
<td>2.</td>
<td>65 = Total Cover</td>
</tr>
</tbody>
</table>

**Remarks:**

---

US Army Corps of Engineers  
Western Mountains, Valleys, and Coast – Version 2.0
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>% Color (moist)</th>
<th>% Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10% Ye %</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-16</td>
<td>10% Ye %</td>
<td>99</td>
<td>5% Ye %</td>
<td>1</td>
<td>C, m</td>
<td>few mottles</td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

<table>
<thead>
<tr>
<th>Indicators for Problematic Hydric Soils</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. cm Muck (A10)</td>
</tr>
<tr>
<td>2. Red Parent Material (TP1)</td>
</tr>
<tr>
<td>3. Very Shallow Dark Surface (TF12)</td>
</tr>
<tr>
<td>4. Other (Explain in Remarks)</td>
</tr>
</tbody>
</table>

Restrictive Layer (if present):
- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes ☑ No ☑

Remarks:

*Dark high organic soil is very few mottles at depth.*

**HYDROLOGY**

Wetland Hydrology Indicators:

**Primary Indicators (minimum of one required; check all that apply)**
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required)**
- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:
- Surface Water Present? Yes ☑ No ☐
- Water Table Present? Yes ☑ No ☐
- Saturation Present? Yes ☑ No ☐

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

Remarks:

*Soil moist but not glistening.*
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** RTI Manchester  
**City/County:** Manchester / MENDOCINO  
**Sampling Date:** 18 Oct 2018

**Applicant/Owner:** RTI / Caltrans, private  
**State:** CA  
**Sampling Point:** 94

**Investigator(s):** M. Widdowson, J. Mayor  
**Section, Township, Range:**

**Landform (hillslope, terrace, etc.):**  
Local relief (concave/convex, none):  
Slope (%): 5

**Subregion (LRR):**  
**Lat:**  
**Long:**  
**Datum:**

**Soil Map Unit Name:**  
**NWI classification:**

- Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No __ (If no, explain in Remarks.)
- Are Vegetation ☑, Soil _____, or Hydrology _____ significantly disturbed? Are “Normal Circumstances” present? Yes ☑ No __ (If needed, explain any answers in Remarks.)
- Are Vegetation ☑, Soil _____, or Hydrology _____ naturally problematic?

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

- **Hydrophytic Vegetation Present?** Yes ☑ No __  
- **Hydric Soil Present?** Yes ☑ No __
- **Wetland Hydrology Present?** Yes ☑ No __
- **CZ Wetland** Yes ☑ No __
- Is the Sampled Area within a Wetland? Yes _____ No ____

**Remarks:** Roadside slope adjacent to low-lying and seasonally ponded area in field out of Right-of-Way.

### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Sapling/Shrub Stratum (Plot size: _________)**
  
  | 1.                                  |                  |                   |                 |
  | 2.                                  |                  |                   |                 |
  | 3.                                  |                  |                   |                 |
  | 4.                                  |                  |                   |                 |
  | 5.                                  |                  |                   |                 |

- **Herb Stratum (Plot size: 2 x 10 ft)**
  
  | 1. **Lotus angustissimus (non-native)** | 60 | Y | **UPL** |
  | 2. **Rosa californica** | 10 | N | **FAC** |
  | 3. **Plagiobothrys undulatus** | 50 | Y | **OBL** |
  | 4. **Polygona monospelana** | 1 | N | **FACW** |

  | Total Cover |                  |                   |                 |

- **Woody Vine Stratum (Plot size: _________)**
  
  | 1.                                  |                  |                   |                 |
  | 2.                                  |                  |                   |                 |

  | % Bare Ground in Herb Stratum | 0.0 |       |       |

  | Total Cover |                  |                   |                 |

**Remarks:** Disturbed from maintenance noisy along roadway.

| Dominance Test worksheet: | Number of Dominant Species That Are OBL, FACW, or FAC: | 1 | (A) |
| Total Number of Dominant Species Across All Strata: | 1 | *(B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | 100% | (AVB) |

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

| Column Totals: | (A) |

| Prevalence Index = B/A = |

| Hydrophytic Vegetation Indicators: |
|-----------------------------------|---|
| 1. Rapid Test for Hydrophytic Vegetation | Yes ☑ No __ |
| 2. Dominance Test is >50% | Yes ☑ No __ |
| 3. Prevalence Index is ≤3.0 | Yes ☑ No __ |
| 4. Morphological Adaptations | (Provide supporting data in Remarks or on a separate sheet) |
| 5. Wetland Non-Vascular Plants | Yes ☑ No __ |
| 6. Problematic Hydrophytic Vegetation | Yes ☑ No __ |

**Hydrophytic Vegetation Present?** Yes ☑ No __
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10%</td>
<td>54.5</td>
<td>Loam</td>
<td>Full of rocks and cobbles (20%)</td>
</tr>
<tr>
<td>10-16</td>
<td>10%</td>
<td>54.6</td>
<td>Loam</td>
<td>from roadside prism</td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

### Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (inches):</td>
</tr>
</tbody>
</table>

### Hydric Soil Present? 

**Yes**  **No** 

**Remarks:**

On bottom of slope adjacent to seasonally flooded (likely 3-param) wetland with obvious hydrophytic vegetation. Soils contain abundant rocks from building of roadside prism.

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? **Yes**  **No**
- Water Table Present? **Yes**  **No**
- Saturation Present? **Yes**  **No**

**Wetland Hydrology Present?** **Yes**  **No**

**Remarks:**

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

**Remarks:**
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys, and Coast Region

Project/Site: RTI Manchester  
City/County: Manchester / MENDOCINO  
Sampling Date: 12 Oct 2018

Applicant/Owner: RTI / Caltrans, private  
State: CA  
Sampling Point: 45

Investigator(s): M. Widdowson, J. Mayor  
Section, Township, Range:

Landform (hillslope, terrace, etc.): Coastal terrace  
Local relief (concave, convex): None  
Slope (%): 10

Subregion (LRR): A. Northwest Forests and Coast  
Lat:

Long:

Datum:

Soil Map Unit Name: 132 - Crispia loam, O-5 slopes  
NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑️ No ☐ (If no, explain in Remarks.)

Are Vegetation ☑️, Soil ☐, or Hydrology ☐ significantly disturbed?  
Are "Normal Circumstances" present? Yes ☑️ No ☐ (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS** – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑️ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑️ No ☐</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑️ No ☐</td>
</tr>
<tr>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes ☐ No ☑️</td>
</tr>
</tbody>
</table>

**Remarks:**

---

**VEGETATION** – Use scientific names of plants.

**Tree Stratum** (Plot size: ___________)

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum** (Plot size: ___________)

<table>
<thead>
<tr>
<th>Shrubs/Saplings</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

**Herb Stratum** (Plot size: 4x8 ft)

<table>
<thead>
<tr>
<th>Herb Species</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>50 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>50 Y OPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>21 N FAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>21 N OPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Woody Vine Stratum** (Plot size: 4x8 ft)

<table>
<thead>
<tr>
<th>Woody Vine Species</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>100 Y FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>15</td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Dominance Test worksheet:**  
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

**Prevalence Index worksheet:**  
Total % Cover of: OBL species x 1 =  
FACW species x 2 =  
FAC species x 3 =  
FACU species x 4 =  
UPL species x 5 =  
Column Totals: (A) (B)

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation  
2. Dominance Test is >60%  
3. Prevalence Index is ≤3.0  
4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  
5. Wetland Non-Vascular Plants (Explain)

**Remarks:**

**Hydrophytic Vegetation Present?** Yes ☑️ No ☐
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>10%</td>
<td>Color (moist) 100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Color (moist) 100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type1 Loc2 Texture Remarks</td>
</tr>
</tbody>
</table>

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) |
|--------------------------|--------------------------|
| Histosol (A1)            | Sandy Redox (S5)         |
| Histic Epipedon (A2)     | Stripped Matrix (S6)     |
| Black Histic (A3)        | Loamy Mucky Mineral (F1) (except MLRA 1) |
| Hydrogen Sulfide (A4)    | Loamy Gleyed Matrix (F2) |
| Depleted Below Dark Surface (A11) | Depleted Matrix (F3) |
| Thick Dark Surface (A12) | Redox Surface (F6)       |
| Sandy Mucky Mineral (S1) | Depleted Dark Surface (F7) |
| Sandy Gleyed Matrix (S4) | Redox Depressions (F8)   |

**Restrictive Layer (if present):**

- Type: ______
- Depth (inches): ______

**Remarks:**

- Read fall gravel and cobble painted deep excavation

**Hydric Soil Present?** Yes _ No _

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparserly Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (C3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes _ No _ Depth (inches): ______
- Water Table Present? Yes _ No _ Depth (inches): ______
- Saturation Present? Yes _ No _ Depth (inches): ______

**Wetland Hydrology Present?** Yes _ No _

**Remarks:**

- Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
**Project:** MANCHESTER SUBSEA CABLES  
**Date:** 6/26/18  
**Location:** Manchester, Mendocino County  
**Investigator(s):** D. Jokerst, M. Widdowson

**Project Description:**  
Delineation for fiber cable installation project along SR 1 and some adjacent properties

**Describe the river or stream’s condition (disturbances, in-stream structures, etc.):**  
Perennial streams are in functioning condition. Some roadside non-wetland waters are disturbed from roadside maintenance.

**Off-site Information**

**Remotely sensed image(s) acquired?**  
☑ Yes  ☐ No  
[If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below]  
Description:  
Aerial

**Hydrologic/hydraulic information acquired?**  
☐ Yes  ☐ No  
[If yes, attach information to datasheet(s) and describe below.]  
Description:

**List and describe any other supporting information received/acquired:**

---

Instructions:  Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.
**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

![Transect drawing]

**Break in Slope at OHWM:**  
- ✔ Sharp (> 60°)  
- ✔ Moderate (30–60°)  
- □ Gentle (< 30°)  
- □ None

**Notes/Description:**

---

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt</th>
<th>Sand</th>
<th>Gravel</th>
<th>Cobble</th>
<th>Boulders</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>&lt;0.05mm</td>
<td>0.05 – 2mm</td>
<td>2mm – 1cm</td>
<td>1 – 10cm</td>
<td>&gt;10cm</td>
<td>Y</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

**Notes/Description:**

---

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>90</td>
<td>50</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Below OHWM</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Notes/Description:**

- Dense shade of *Salix*
- Nothing in channel

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Change in vegetation, soil, scour
**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Perennial Stream - flowing (West bank) 23.74 ft

Assessment requires trespassing outside row, dense vegetation

**Break in Slope at OHWM:**
- [ ] Sharp (> 60°)
- [x] Moderate (30-60°)
- [ ] Gentle (< 30°)
- [ ] None

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
<th>Gravel 2mm – 1cm</th>
<th>Cobbles 1 – 10cm</th>
<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>Obscured by vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below OHWM</td>
<td>70</td>
<td>15</td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>95</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Below OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes/Description:**

- *L. salix lasiolepis*  
- *L. ursinus*  
- *R. parviflora*  
- *P. minutum*  
- March

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation
**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

![Transect drawing](image)

**Break in Slope at OHWM:** □ Sharp (> 60°) □ Moderate (30–60°) □ Gentle (< 30°) □ None

**Notes/Description:**

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
<th>Gravel 2mm – 1cm</th>
<th>Cobbles 1 – 10cm</th>
<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below OHWM</td>
<td>40</td>
<td>40</td>
<td>15</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes/Description:**

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td>70</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes/Description:**

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation

*Snow, sediment sorting, change in soil & vegetation*
**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

PM 27.92 Culvert, Ephemeral Stream  ES-2

2' wide, incised below culvert

**Break in Slope at OHWM:**  
- [x] Sharp (> 60°)  
- [ ] Moderate (30–60°)  
- [ ] Gentle (< 30°)  
- [ ] None

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
<th>Gravel 2mm – 1cm</th>
<th>Cobble 1 – 10cm</th>
<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>20</td>
<td>50</td>
<td>30</td>
<td></td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>0</td>
<td>80</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Snow, change in vegetation, soils, sediment sorting
Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Alder Creek, Perennial Stream

Break in Slope at OHWM: □ Sharp (> 60°)  □ Moderate (30–60°)  □ Gentle (< 30°)  □ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 - 2mm</th>
<th>Gravel 2mm - 1cm</th>
<th>Cobbles 1 - 10cm</th>
<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>15</td>
<td>40</td>
<td>20</td>
<td>30</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>100</td>
<td>20</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>100</td>
<td>20</td>
<td>20</td>
<td>80</td>
</tr>
</tbody>
</table>

Notes/Description:

Alnus rubra dominated canopy with Salix sitchensis

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Water present in low flow channel.

Broad area below OHWM with gravel, cobble

OHWM characteristics present: water marks on bridge abutment, scour, sediment sorting, shelving, change in soil
Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Intermittent Stream = Unnamed Stream 3
PM 22.47. Crosses under SL-1 in oblique current, parallels road

Break in Slope at OHWM: Yes | Sharp (> 60°) | Moderate (30–60°) | Gentle (< 30°) | None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
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<th>Cobbles 1 – 10cm</th>
<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>95%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below OHWM</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM characteristics: Scour, change in soil + vegetation, sediment settling
Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Break in Slope at OHWM:  ✔ Sharp (> 60°)  |  □ Moderate (30–60°)  |  □ Gentle (< 30°)  |  □ None
Notes/Description:  OHWM is on abutments on both banks at bridge

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
<th>Gravel 2mm – 1cm</th>
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<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>50</td>
<td>20</td>
<td>N</td>
</tr>
</tbody>
</table>
Notes/Description:  

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>50</td>
<td>70</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Below OHWM</td>
<td>50</td>
<td>40</td>
<td>20</td>
<td>80</td>
</tr>
</tbody>
</table>
Notes/Description:  Open Alnus rubra below OHWM

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Flowing water 9/28/2018. Shelving, scour, sediment sorting. Low flow channels at both sides, 10 ft wide
**Transect (cross-section) drawing:** (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

---

**Break in Slope at OHWM:**  
- ☑ Sharp (> 60°)  
- ☐ Moderate (30–60°)  
- ☐ Gentle (< 30°)  
- ☐ None

**Sediment Texture:** Estimate percentages to describe the general sediment texture above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Clay/Silt &lt;0.05mm</th>
<th>Sand 0.05 – 2mm</th>
<th>Gravel 2mm – 1cm</th>
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<th>Boulders &gt;10cm</th>
<th>Developed Soil Horizons (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vegetation:** Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

<table>
<thead>
<tr>
<th></th>
<th>Tree (%)</th>
<th>Shrub (%)</th>
<th>Herb (%)</th>
<th>Bare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above OHWM</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below OHWM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other Evidence:** List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- **OHWM characteristics:** Scour, shelving, change in soil, sediment sorting, change in veg

---

**Notes/Description:**

- Dense shrub/tree layer - *Salix lasiandra, Rubus parviflorus, Rubus ursinus*. Rooted above OHWM.
Appendix F

Representative Photographs
Appendix F

Representative Photographs

Photograph 1: Cable landing parcel, showing flat topography and velvet grass-dominated areas of meadow; facing east (June 26, 2018)

Photograph 2: Cable landing parcel; facing west toward Pacific Ocean, visible in distance (June 27, 2018)
Photograph 3: Cable landing parcel, view of wetland complex from State Route 1 fence line, showing patches dominated by rush at locations of sampling points 29, 30, 31, and 32; facing northwest (June 27, 2018)

Photograph 4. Cable landing parcel wetland complex, showing surveyor investigating sampling point 27 in small emergent wetland; facing west (June 27, 2018)
Photograph 5: Roadside ditch D-1a along east side of State Route 1; facing south (June 27, 2018)

Photograph 6: Roadside ditch D-1a at culvert under residence access road; facing north (July 31, 2018)
Photograph 7: Roadside ditch D-1b that flows to Unnamed Stream 1, an intermittent stream IS-1 in far distance; facing south (July 31, 2018)

Photograph 8: Unnamed Stream 1, IS-1, a deeply down cut intermittent stream under dense willow canopy; facing southwest (July 31, 2018)
Photograph 9: Emergent wetland EW-4, with dense willow canopy associated with Unnamed Stream 1 visible in background, near location of sampling point 10.

Photograph 10: Facing south, emergent wetland EW-4 with Roadside ditch D-3 in background on east side of State Route 1 (June 27, 2018)
Photograph 11: Emergent wetland EW-4 near locations of sampling points 6 and 7; facing south (April 4, 2018)

Photograph 12: Upper end of Roadside ditch D-3 near location of sampling points 8 and 9, facing south (April 4, 2018)
Photograph 13: Seasonal wetland SW-1, facing north, formed on compacted soils in a pull out; this feature and similarly situated feature SW-2 lacked hydric soils (see sampling points 2 and 3) (June 27, 2018)

Photograph 14: View south on State Route 1, emergent wetlands EW-5 and EW-6 are located on road shoulder on east side of road (April 4, 2018)
Photograph 15: Facing north, riparian canopy dominated by red alder, associated with Unnamed Stream 2 (July 31, 2018) (Note: Unnamed Stream 2 does not surface in the survey area.)

Photograph 16: Willow canopy, associated with perennial stream PS-1, facing northeast (September 28, 2018)
Photograph 17: Emergent wetland EW-7 in stream channel at location of sampling points 21, 22, and 23 (2018 Field Season)

Photograph 18 Alder Creek bridge, showing dense alder- and willow-dominated riparian forest, facing south (July 31, 2018)
Photograph 19: Alder Creek viewed from State Route 1 bridge, showing cobble channel; facing southwest (April 4, 2018)

Photograph 20: Alder Creek bridge showing dense riparian forest canopy associated with Alder Creek, facing north (April 4, 2018)
Photograph 21: Valley of Alder Creek, with scrub shrub willows associated with the floodplain of Alder Creek; facing north (April 4, 2018)

Photograph 22: Intermittent stream IS-2a, which flows along east side of State Route 1 into Unnamed Stream 3, an intermittent stream (IS-3); facing north (September 28, 2018)
Photograph 23: Channel of intermittent stream IS-3 (Unnamed Stream 3) showing distinct bed and bank with scour, sediment deposition, and water marks visible at the ordinary high water mark; facing north (September 28, 2018)

Photograph 24: View of scrub shrub willows on left (west side of State Route 1 (SR-1)) and right (east side of SR 1) associated with Unnamed Stream 3, facing north (September 28, 2018) (Note: Intermittent stream IS-2a flows along east of SR 1 in upper right of picture).
Photograph 25: View of scrub shrub willows associated with Unnamed Stream 3, facing north (September 28, 2018)

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Photograph 30: Emergent wetland EW-9 at location of sampling point 41 on road shoulder, on south side of Kinney Road; facing west (October 12, 2018)
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Photograph 32: Brush Creek, showing dense riparian forest canopy dominated by red alder and willows; facing south (April 4, 2018)
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Photograph 34: Unnamed Stream 4 (perennial stream PS-5) in Manchester, showing small patch of willows on east side of State Route 1 associated with the stream (October 12, 2018)
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### Plant Species Observed in the Biological Survey Area

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<tr>
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<td><em>Pteridium aquilinum</em> var. <em>pubescens</em></td>
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*b* Wetland plant indicator statuses follow the *National Wetland Plant List* (Lichvar et al. 2016).
### WETS Table

**WETS Station: FORT BRAGG 5 N, CA**

Requested years: 1900 - 2018

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<th>Month</th>
<th>Avg Max Temp</th>
<th>Avg Min Temp</th>
<th>Avg Mean Temp</th>
<th>Avg Precip</th>
<th>30% chance precip less than</th>
<th>30% chance precip more than</th>
<th>Avg number days precip 0.10 or more</th>
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#### Growing Season Dates

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<th>28 F or higher</th>
<th>32 F or higher</th>
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* Percent chance of the growing season occurring between the Beginning and Ending dates.

### Stats Table - Total Precipitation (inches)

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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2016-07-22