

**EAST BAY MUNICIPAL UTILITY DISTRICT
QUARRY SITE RESTORATION PROJECT
WETLAND DELINEATION REPORT**

JULY 2021

PREPARED FOR:



EXECUTIVE SUMMARY

Insignia Environmental (Insignia) was subcontracted through Woodard & Curran to conduct a jurisdictional delineation for East Bay Municipal Utility District's (EBMUD's) Quarry Site Restoration Project, which is located at the approximately 60-acre San Leandro Rock Company quarry site at 13575 Lake Chabot Road in unincorporated Alameda County, California. EBMUD is considering the property as a permanent storage site for trench soils and for long-term restoration opportunities. On April 12, 2021, Insignia conducted a wetland delineation on the property, in accordance with the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE 1987) in conjunction with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008). The survey area consisted of an approximately 3-acre area at the northwest corner of the property.

One region consisting of approximately 0.48 acre of seasonal forested wetland was delineated within the survey area. This wetland appears to be located in the historic path of San Leandro Creek or one of its tributaries, as it is dominated by riparian trees. The wetland is no longer hydrologically connected to the creek, and it now functions as a seasonal forested wetland. A very small seep¹ is located on the periphery of the wetland. Due its small size, in combination with the flat topography, the seep does not appear to contribute to the overall hydrology of the survey area. The wetland was found to meet the criteria for waters of the state under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board, but it does not meet the criteria for USACE or California Department of Fish and Wildlife jurisdiction. This Wetland Delineation Report was prepared in accordance with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a).

¹ A seep is a small spring or pool where groundwater comes to the surface.

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1 – INTRODUCTION

This Wetland Delineation Report (report) presents the results of an assessment of jurisdictional waters for the East Bay Municipal Utility District (EBMUD) Quarry Site Restoration Project (Project). EBMUD is considering the property as a permanent storage site for trench soils and for long-term restoration opportunities. This delineation was conducted to determine the water features within the approximately 3-acre survey area that are within the jurisdictions of the following agencies:

- the United States (U.S.) Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act (CWA);
- the Regional Water Quality Control Board (RWQCB), pursuant to the Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, § 13050) or Section 401 of the CWA; and
- the California Department of Fish and Wildlife (CDFW), pursuant to Section 1600 of the California Fish and Game Code.

This report describes the survey methods utilized, specific data collected, and details the survey results.

1.0 CONTACT INFORMATION

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2 – LOCATION

The survey area is an approximately 3-acre triangular area located in the northwestern corner of the San Leandro Rock Company quarry property, as shown on **Figure 1: Project Location Map**. The survey area is bounded to the north by Lake Chabot Road, to the west by the privately owned Bay-O-Vista Swim and Tennis Club, and to the east by the main entrance to the quarry property from Lake Chabot Road. The quarry property is located on the eastern edge of a dense, urban area in unincorporated Alameda County. Anthony Chabot Regional Park and Lake Chabot are located northeast of the property, and Fairmont Ridge—a large, undeveloped grassland area in Lake Chabot Regional Park—is located to the south.

The latitude and longitude of survey area are 37.726915 and -122.126007, respectively. No section, township, or range information is available for this area, as it is under a land grant.

To access the site from Interstate 580, take Estudillo Avenue (exit 31A) east. In approximately 0.21 mile, continue right on Lake Chabot Road. Continue east on Lake Chabot Road for approximately 0.64 mile to 13575 Lake Chabot Road, which is located on the south side the road.

3 – METHODS

On April 12, 2021, Insignia biologists Sarah Willbrand and Madeline Schwarz conducted a wetland delineation of the survey area. The survey area consisted of an approximately 3-acre area at the northwest corner of the property. The wetland boundaries were mapped according to the USACE’s Wetlands Delineation Manual (USACE 1987) in conjunction with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008). For an area to be defined as a wetland² under normal circumstances, the USACE routine field determination methods call for the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. However, in wetlands that have been modified or that present problematic conditions, all three parameters may not be evident. Therefore, at a sampling point in the survey area where two of the three parameters were robust, but the third was missing, the location was assumed to be a wetland. This can be assumed because if two wetland indicators are robust, the conditions must be sufficient to support the third indicator in favorable conditions.

Sampling points were recorded at different vegetation communities within the wetland, at the wetland-upland boundary, and at an upland reference location. The naming convention for sampling points was “Wet #” for wetlands, “Trans #” for wetland-upland transition areas, and “Up #” for uplands. All potential wetlands were mapped using a Global Positioning System unit with submeter accuracy. All spatial data were collected in the World Geodetic System 1984 coordinate system. Photographs were also taken at each sample point. Descriptions of each sampling point were recorded using Wetland Determination Data Forms for the Arid West Region.

² Wetlands are defined as “those areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils” (33 Code of Federal Regulations [CFR] § 328.3[b]).

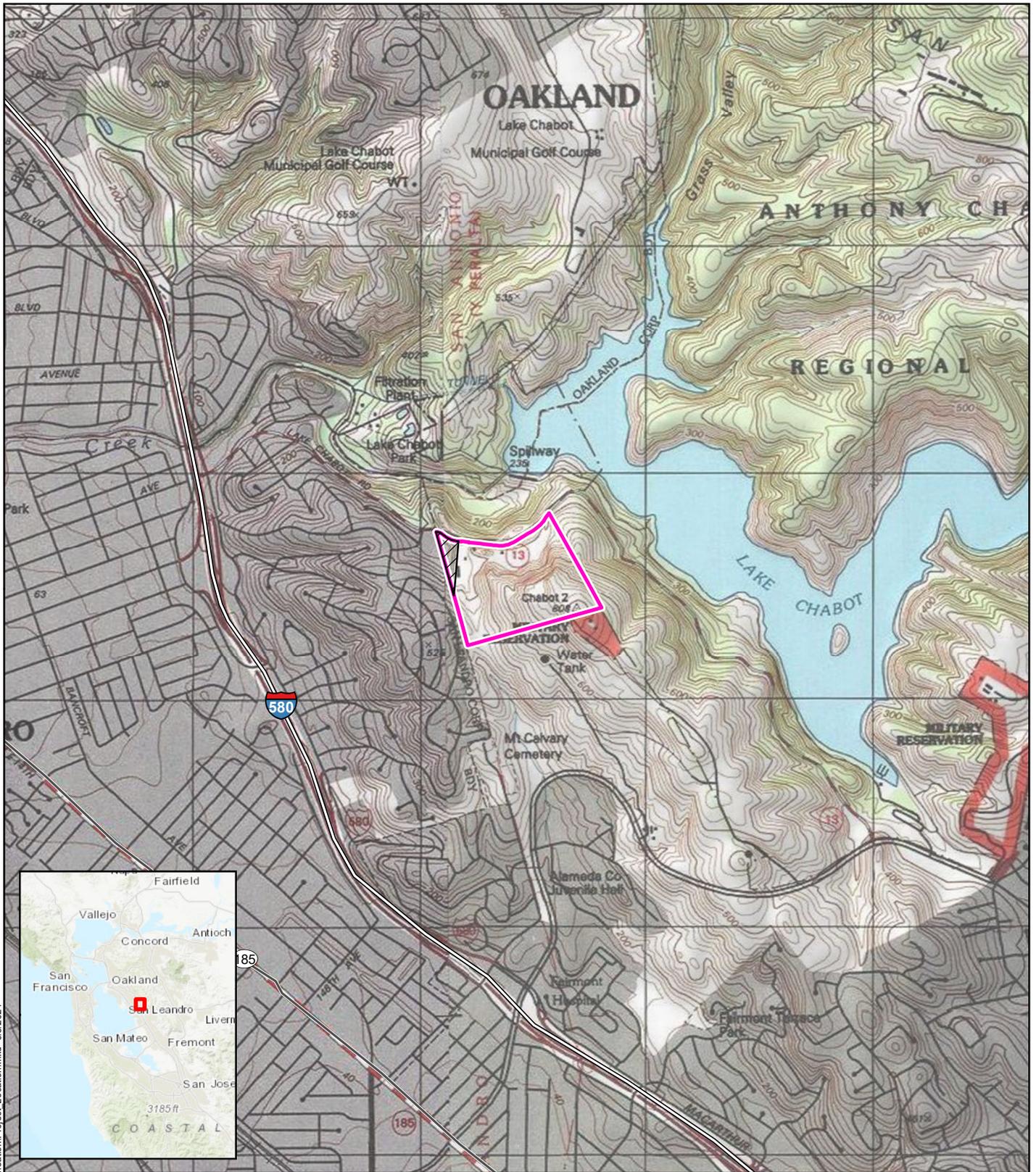


Figure 1: Project Location Map

Quarry Site Restoration Project

- Project Area
- Survey Area

1 inch = 2,000 feet
 0 1,000 2,000 Feet



3.0 VEGETATION

Wetland vegetation was identified in the field based on species composition and corresponding wetland indicator status. Vegetation was classified within an approximately 5-, 10-, or 15-foot radius of each sampling point. Sampling point plot sizes were chosen based on site characteristics so that vegetation from different communities was not incorporated in the analysis. Percent coverage of each species was visually estimated. The “50/20 Rule” was used to select dominant species from each stratum of the community. In accordance with this rule, dominant species are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total. The indicator status of each species was determined based on the National Wetland Plant List (USACE 2018). Wetland indicator status definitions are as follows:

- Obligate Plant (OBL) = occurs in aquatic resources more than 99 percent of the time
- Facultative Wetland Plant (FACW) = occurs in aquatic resources 67 to 99 percent of the time
- Facultative Plant (FAC) = occurs in aquatic resources 34 to 66 percent of the time
- Facultative Upland Plant (FACU) = occurs in aquatic resources 1 to 33 percent of the time
- Upland Plant (UPL) = occurs in uplands more than 99 percent of the time
- Not Listed Plant (NL) = not listed in the National Wetland Plant List for this region

For species not on the National Wetland Plant List for the Arid West Region, the indicator status was assumed to be UPL (USACE 2008). Vegetation was considered hydrophytic if more than 50 percent of the dominant plant species from all strata were OBL, FACW, or FAC and the prevalence index was less than or equal to 3.0.

3.1 SOILS

The soil type in the survey area was identified using the soil survey data for the Project area (Natural Resources Conservation Service [NRCS] 2021b). Hydric soils were identified by comparing survey area with the NRCS Soil Data Access Hydric Soils List (NRCS 2021a). The Munsell Soil Color Charts (Munsell Color 2012) was used to help describe soil colors. Soil was considered hydric if one or more primary field indicators were present (e.g., Redox Dark Surface or Depleted Dark Surface). One soil pit was dug at each sampling point to the depth necessary to establish the presence or absence of hydric soil indicators.

3.2 HYDROLOGY

Wetland hydrology was determined by observing field indicators. Primary field indicators of wetland hydrology are described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008) and include surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, surface soil cracks, biotic crust, oxidized rhizospheres along living roots, presence of reduced iron, and water-stained leaves, among others. Secondary indicators include, but are not limited to water

marks, sediment deposits, drift deposits, and drainage patterns. Wetland hydrology was determined to be present where one or more primary indicators were observed.

4 – EXISTING CONDITIONS

4.0 TOPOGRAPHY AND HYDROLOGY

The survey area is located at the bottom of a steep hill at the northwestern corner of the quarry property. The hill bounds the survey area to the east; tennis courts bound the survey area to the west; and Lake Chabot Road bounds the survey area to the north. The topography of the area creates a basin for water to pool in the lowest parts of the survey area. Sheet flow from the hillside likely temporarily ponds in the wetland following rain events. The National Wetlands Inventory (NWI) classifies the majority of this area as “palustrine forested temporarily flooded” (i.e., PFOA) (U.S. Fish and Wildlife Service [USFWS] 2021). Based on historic topographic maps, the wetland in the survey area appears to be a possible remnant of San Leandro Creek’s riparian area (or possibly a tributary or backwater area of the creek). The survey area may have been separated from the creek by the creek’s realignment and the eventual construction of the quarry and Lake Chabot Road. The prevalence of arroyo willow (*Salix lasiolepis*)—which is typically associated with riparian areas—in the survey area supports this assumption. The current alignment of San Leandro Creek is approximately 0.16 mile north of the survey area, separated by Lake Chabot Road and a steep hill.

4.1 VEGETATION

Vegetation in the wetland portion of the survey area is characterized by the *Salix lasiolepis* Shrubland Alliance (arroyo willow thickets), which is typically found along streambanks and benches, slope seeps, and stringers along drainages (California Native Plant Society [CNPS] 2021).

The upland portion of the survey area is characterized by the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (wild oats and annual brome grasslands) and the *Bromus diandrus* association. This alliance occurs in all topographic settings in foothills, disturbed places, rangelands, and openings in woodlands (CNPS 2021).

4.2 CLIMATE AND PRECIPITATION

The survey area is characterized by a Mediterranean climate and receives an average³ of approximately 25.33 inches of rain per year (EBMUD 2021). The 2020/2021 rainy season is at 40 percent of the annual average with approximately 9.42 inches to date (EBMUD 2021), signifying a drought year. The National Drought Mitigation Center reports moderate drought conditions for Alameda County (National Drought Mitigation Center 2021).

³ This precipitation average was based on the precipitation report from EBMUD’s Upper San Leandro Water Treatment Plant.

5 – RESULTS

One seasonal forested wetland feature was mapped within the survey area, as depicted in **Figure 2: Wetland Delineation Results Map** and as shown in **Table 1: Wetlands within the Survey Area**. Of the four sampling points from which data were collected, two sampling points (i.e., Wet 2 and Wet 1) were determined to be in the wetland. Sampling point Wet 2 represented the conditions within the majority of the wetland. Sampling point Wet 1 was located on the periphery of the wetland and represented a different vegetation community and hydrological conditions. Sampling point Trans 1 was collected in the approximate location where the wetland transitioned into an upland. Sampling point Up 1 was located in a clear upland area that had no wetland indicators.

Table 1: Wetlands within the Survey Area

Name	NWI Classification ⁴	NWI Classification Definition	Location (latitude/longitude)	Approximate Size (acres)
Forested Wetland	PFOA	Palustrine Forested Temporarily Flooded	37.726915 / -122.126007	0.48

Source: USFWS 2021

The NRCS soil type and NWI classification of the survey area are shown in **Figure 3: Soils and NWI Map**. The wetland determination data forms used in the delineations are provided in **Attachment A: Wetland Determination Data Forms**. Photographs of the survey area and sampling points are included in **Attachment B: Photographs**. The plant species observed in the survey area are presented in **Attachment C: Plant List**. The USACE's Aquatic Resources Spreadsheet for the project is provided in **Attachment D: Aquatic Resources Spreadsheet**. Detailed descriptions of each sampling point are provided in the following subsections.

5.0 WETLAND SAMPLING POINTS

5.0.0 Wet 2

Sampling point Wet 2 represents the vegetation, soil, and hydrology conditions in the majority of the wetland. Based on the indicators, the area represented by Wet 2 was approximately 0.48 acre of seasonal forested wetland. The local relief of the wetland was flat and the slope was 0 percent, but the wetland was located at the toe of a steep slope to the east.

The dominant vegetation was arroyo willow (FACW), California blackberry (*Rubus ursinus*; FAC), and pampas grass (*Cortaderia* sp.; FACU). California bulrush (*Schoenoplectus californicus*; OBL) was also present. The vegetation passed the dominance test and the prevalence index, indicating that it is hydrophytic.

The soil map unit (i.e., Xerorthents-Altamont complex, 30- to 50-percent slopes) is not considered hydric, based on the Soil Data Access Hydric Soils List (NRCS 2021a). The entirety

⁴ NWI classifications are based on the wetlands and deepwater habitat classifications provided in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

of the 11-inch-deep soil sample was very dark gray (10YR 3/1) with 5-percent redox concentrations in the matrix. The texture was silty clay loam, and the hydric soil indicator was redox dark surface (F6).

No wetland hydrology indicators were present, and there was no indication of an OHWM or any water flow or pooling. Wet 2 most likely saturates on a limited, seasonal basis, in accordance with the NWI classification for the site (i.e., PFOA).

Two of the three wetland indicators were present at this sampling point. However, even though no wetland hydrology indicators were present, the vegetation and soil indicators were robust, so this site was conclusively determined to be a wetland. During the wet season, this sampling point must contain enough water to cause the redoximorphic reactions in the soil and support the hydric vegetation, even during dry months.

5.0.1 Wet 1

Sampling point Wet 1 represents a different vegetation community, soil type, and hydrology within the larger wetland typified by Wet 2. This sampling point is located on the periphery of the wetland. The area represented by Wet 1 was approximately 2 square feet (i.e., less than 0.001 acre). The local relief at the sampling point was flat and the slope was 0 percent, but the site was located at the toe of a steep slope.

The vegetation at this sampling point was dominated by the herb stratum, and species were relatively evenly distributed. The one dominant plant species was American brooklime (*Veronica americana*; OBL). Wild strawberry (*Fragaria vesca*; UPL), California blackberry, English ivy (*Hedera helix*; FACU), pampas grass, ripgut brome (*Bromus diandrus*; NL), and California bulrush were also present. Approximately 53 percent of the sampling plot contained bare ground. The vegetation passed the dominance test, indicating that it was hydrophytic.

The soil map unit (i.e., Xerorthents-Altamont complex, 30- to 50-percent slopes) is not considered hydric, based on the Soil Data Access Hydric Soils List (NRCS 2021a). The entire 10-inch soil profile was saturated by groundwater. The soil color was dusky red (10YR 3/2), with no redox features. The texture was sandy loam, and no hydric soil indicators were present.

The wetland hydrology indicators at this sampling point were Surface Water (A1), High Water Table (A2), and Saturation (A3). The surface water only covered an area of approximately 2 square feet. The high water table in this small area indicates the presence of a small seep, but this perennial wetland is in a flat area, so the water does not appear to feed the larger seasonal wetland described in **Section 5.0.0 Wet 2** in a meaningful way. Although this very small area may be perennially saturated, it was not delineated as a separate feature because it was part of the seasonal forested wetland feature.

Two of the three wetland indicators were present at this sampling point. However, even though no hydric soil indicators were evident, the vegetation and hydrology indicators were strong, so this site was conclusively determined to be a wetland. Because the seep at this sampling point is perennial and the site supports obligate wetland plant species, hydric soil is assumed to be present despite the lack of visual indicators.



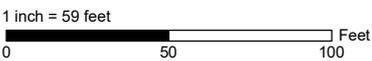
Figure 2: Wetland Delineation Results Map

Quarry Site Restoration Project

- Project Area
- Survey Area
- Wetland
- Sampling Point
- Contour, 10-ft Interval

Based on current regulations, this wetland is not under the jurisdiction of the United States Army Corps of Engineers or the California Department of Fish and Wildlife

Vertical datum: North American Vertical Datum of 1988 (NAVD 88)
 Aerial Imagery Provider: Microsoft, 2010



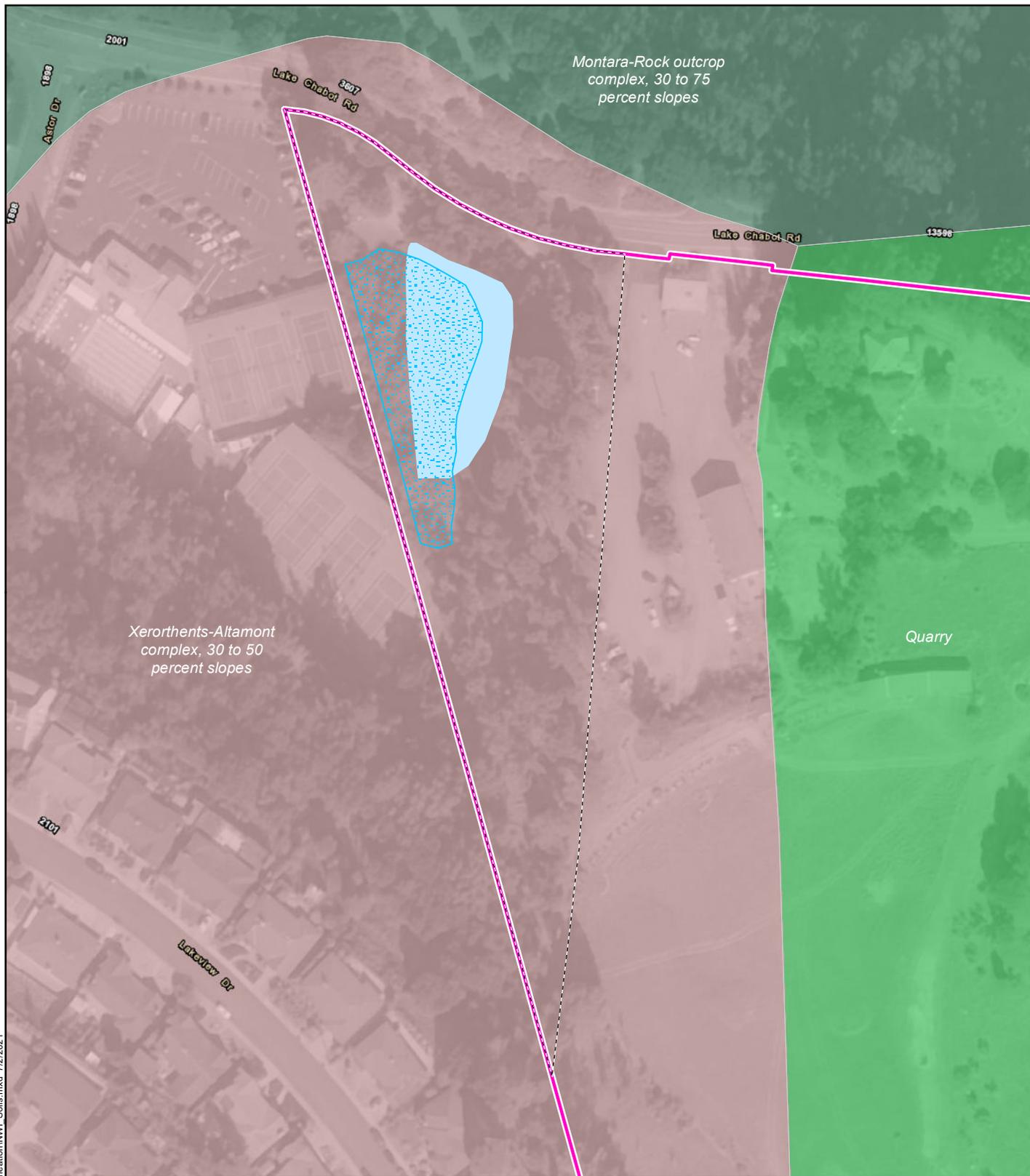
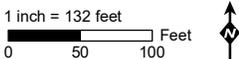


Figure 3: Soils and NWI Map

Quarry Site Restoration Project

- | | |
|---|--|
| <ul style="list-style-type: none"> Project Area Survey Area <p>Waters</p> <ul style="list-style-type: none"> Delineated Wetland NWI Feature: (PFOA) Palustrine Forested Temporarily Flooded | <p>NRCS SSURGO Soil Type</p> <ul style="list-style-type: none"> Montara-Rock outcrop complex, 30 to 75 percent slopes Quarry Xerorthents-Altamont complex, 30 to 50 percent slopes |
|---|--|

1. Based on current regulations, this wetland is not under the jurisdiction of the United States Army Corps of Engineers or the California Department of Fish and Wildlife



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5.1 TRANSITION SAMPLING POINT

5.1.0 Trans 1

Sampling point Trans 1 was collected at the northern edge of the seasonal forested wetland, where it transitioned into an upland and met only one of the wetland parameters. The local relief at the sampling point was flat, and the slope was 0 percent. The sampling point was located at the toe of a very short and slight slope.

The vegetation was sparse and dominated by California blackberry and arroyo willow, with a very small percent cover of rice grass (*Stipa* sp.; NL). Bare ground covered approximately 82 percent of the sampling plot. The vegetation passed the dominance test and the prevalence index, indicating that it is hydrophytic.

The soil map unit (i.e., Xerorthents-Altamont complex, 30- to 50-percent slopes) is not considered hydric, based on the Soil Data Access Hydric Soils List (NRCS 2021a). The soil sample was dusky red (10YR 3/2) and contained no redox features. The texture was loamy sand and did not have clear hydric indicators.

No wetland hydrology indicators were observed at this sampling point.

Only one of the three wetland parameters was present, indicating that it is not a wetland.

5.2 UPLAND SAMPLING POINT

5.2.0 Up 1

Sampling point Up 1 is an upland reference point located to the east of the wetland. The local relief was flat, and the slope was approximately 3 percent.

The vegetation was dense and covered primarily with non-native upland forbs. Dominant species were riggut brome and short fruited filaree (*Erodium brachycarpum*; NL), with lower covers of bull thistle (*Cirsium vulgare*; FACU), foxtail barley (*Hordeum murinum*; FACU), California blackberry, Himalayan blackberry (*Rubus armeniacus*; FAC), and poison oak (*Toxicodendron diversilobum*; FACU). The vegetation did not meet the conditions to be considered hydrophytic.

The soil map unit (i.e., Xerorthents-Altamont complex, 30- to 50-percent slopes) is not considered hydric, based on the Soil Data Access Hydric Soils List (NRCS 2021a). The soil was so rocky that the pit could only be dug to 4 inches. The soil sample was dusky red (10YR 3/3) with no redox features. The texture was loamy sand; the soil also contained a significant amount of organic content and had a similar consistency to a dry, peaty potting soil.

No wetland hydrology indicators were observed at this sampling point.

None of the three wetland parameters were present, indicating that it is not a wetland.

6 – CONCLUSION

The survey area contains an approximately 0.48-acre wetland that is under the jurisdiction of the San Francisco Bay RWQCB, in accordance with the Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, Section 13050), which defines waters of the State as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The wetland does not meet the definition of a water of the U.S. as defined by the Navigable Waters Protection Rule (33 CFR Part 328), which excludes wetlands that are not adjacent to other jurisdictional waters. Although the wetland may be located in the historic alignment of San Leandro Creek, (i.e., a jurisdictional water of the U.S.), the wetland is now separated from the creek by Lake Chabot Road and cannot be considered “adjacent,” as it does not have a direct hydrologic surface connection through or over the road in a typical year. The wetland does not meet the criteria to be under the jurisdiction of the CDFW because it is not associated with a water feature that would be under the CDFW’s jurisdiction.

7 – REFERENCES

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ATTACHMENT A: WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Quarry Site Restoration Project City/County: Unincorporated Alameda Co. Sampling Date: 4/13/21
 Applicant/Owner: East Bay Municipal Utility District / San Leandro Rock Company State: CA Sampling Point: Wet 2
 Investigator(s): S. Willbrand, M. Schwarz Section, Township, Range: none available (land grant)
 Landform (hillslope, terrace, etc.): possible historic floodplain Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): LRR C Lat: 37.726915 Long: -122.126007 Datum: WGS 84
 Soil Map Unit Name: Xerorthents - Altamont Complex, 30 to 50 % Slopes NWI classification: PFOA
 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: This sampling point is representative of the majority of the forested wetland feature. The wetland is disturbed, but not recently. Hydrology indicators are absent, but the vegetation and soil indicators were strong, so this site was conclusively determined to be a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
2. _____				
3. _____				
4. _____				
<u>40</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>245</u> (B) Prevalence Index = B/A = <u>2.58</u>
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>15'</u>)				
1. <u>Cortaderia spp.</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Schoenoplectus californicus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
<u>15</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>15'</u>)				
1. <u>Rubus ursinus</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
<u>40</u> = Total Cover				
% Bare Ground in Herb Stratum <u>85</u> % Cover of Biotic Crust <u>0</u>				

Remarks:
 The overstory of willows and middle story of blackberry vines are dense, but the herb stratum is relatively sparse. The vegetation in this wetland has the feel of a riparian area. However, there is no evidence of an ordinary high water mark or other indicator of a current linear water feature.

SOIL

Sampling Point: Wet 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
11	10YR 3/1	95	2.5YR 4/8	5	C	M	silty clay <input checked="" type="checkbox"/> rocky	

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.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: <u>rocks</u> Depth (inches): <u>11</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
 Soil was rocky (potential fill) and slightly soft at this location, but very hard and dense in other areas. Site may have been previously disturbed by quarry activities, or the building of the adjacent tennis courts or road. Redox features were present as concentrations in the matrix.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Sampling point was taken at a very slightly concave area. The remainder of the forested portion of the wetland frequently undulated between slightly concave areas and slightly convex areas. There was no indication of an OHWM or any water flow or pooling. This site most likely saturates on a limited, seasonal basis, in accordance with the NWI classification for the site (PFOA).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Quarry Site Restoration Project City/County: Unincorporated Alameda Co. Sampling Date: 4/13/21
 Applicant/Owner: East Bay Municipal Utility District / San Leandro Rock Company State: CA Sampling Point: Wet 1
 Investigator(s): S. Willbrand, M. Schwarz Section, Township, Range: none available (land grant)
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): LRR C Lat: -122.125892 Long: 37.726728 Datum: WGS 84
 Soil Map Unit Name: Xerorthents - Altamont Complex, 30 to 50 % Slopes NWI classification: PFOA

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: This 2-square-foot spot was the only part of the wetland where standing water was present. Hydric soil indicators were absent, but the vegetation and hydrology indicators were strong, so this site was conclusively determined to be a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Veronica americana</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Fragaria vesca</u>	<u>6</u>	<u>N</u>	<u>UPL</u>	
3. <u>Hedera helix</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. <u>Cortaderia sp.</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Bromus diandrus</u>	<u>5</u>	<u>N</u>	<u>NL</u>	
6. <u>Schoenoplectus californicus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
7. <u>Erodium brachycarpum</u>	<u>3</u>	<u>N</u>	<u>NL</u>	
8. <u>Cirsium vulgare</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
<u>41</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus ursinus</u>	<u>6</u>	<u>N</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
<u>6</u> = Total Cover				
% Bare Ground in Herb Stratum <u>59</u> % Cover of Biotic Crust <u>0</u>				

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 10 x 1 = 10
 FACW species 0 x 2 = 0
 FAC species 6 x 3 = 18
 FACU species 12 x 4 = 48
 UPL species 14 x 5 = 70
 Column Totals: 42 (A) 146 (B)
 Prevalence Index = B/A = 3.48

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:
 Species in the herb stratum were relatively evenly distributed. This vegetation community is located on the outer edge of the forested wetland area, between the forested area and the upland vegetation community.

SOIL

Sampling Point: Wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
10	10YR 3/2	100		0			sandy loam	very rocky and gritty

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.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: <u>rocks</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
Standing water present and soil was saturated, but hydric soil indicators were absent.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:
Surface water is present in an approximately 2-square-foot area. The high water table in this small area indicates the presence of a seep. No indication of artificial watering or irrigation was observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Quarry Site Restoration Project City/County: Unincorporated Alameda Co. Sampling Date: 4-13-21
 Applicant/Owner: East Bay Municipal Utility District / San Leandro Rock Company State: CA Sampling Point: Trans 1
 Investigator(s): S. Willbrand, M. Schwarz Section, Township, Range: none available (land grant)
 Landform (hillslope, terrace, etc.): toe of very slight slope Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): LRR C Lat: 37.727089 Long: -122.126211 Datum: WGS 84
 Soil Map Unit Name: Xerorthents - Altamont Complex, 30 to 50 % Slopes NWI classification: N/A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: This sampling point demarcates the transition between wetland and upland. It was located on the periphery of the forested wetland, at the base of a very short and slight slope.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>7'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepus</u>	<u>8</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____				
3. _____				
4. _____				
	<u>8</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>7'</u>)				
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>8</u> x 2 = <u>16</u> FAC species <u>9</u> x 3 = <u>27</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>1</u> x 5 = <u>5</u> Column Totals: <u>18</u> (A) <u>48</u> (B) Prevalence Index = B/A = <u>2.67</u>
2. _____				
3. _____				
4. _____				
5. _____				
Herb Stratum (Plot size: <u>7'</u>)				
1. <u>Stipa spp.</u>	<u>1</u>	<u>N</u>	<u>NL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
	<u>1</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>7'</u>)				
1. <u>Rubus ursinus</u>	<u>9</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
	<u>9</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>99</u> % Cover of Biotic Crust <u>0</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
 Vegetation at this site is transitioning from the wetland into the upland community.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Quarry Site Restoration Project City/County: Unincorporated Alameda Co. Sampling Date: 4/13/21
 Applicant/Owner: East Bay Municipal Utility District / San Leandro Rock Company State: CA Sampling Point: Up 1
 Investigator(s): S. Willbrand, M. Schwarz Section, Township, Range: none available (land grant)
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR): LRR C Lat: 37.726771 Long: -122.1258 Datum: WGS 84
 Soil Map Unit Name: Xerorthents - Altamont Complex, 30 to 50 % Slopes NWI classification: PFOA

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: This sampling point was a clear upland reference location.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>16</u> x 4 = <u>64</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>101</u> (A) <u>479</u> (B) Prevalence Index = B/A = <u>4.47</u>
Sapling/Shrub Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Bromus diandrus</u>	<u>60</u>	<u>Y</u>	<u>NL</u>	
2. <u>Erodium brachycarpum</u>	<u>20</u>	<u>Y</u>	<u>NL</u>	
3. <u>Cirsium vulgare</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Hordeum murinum</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Toxicodendron diversilobum</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>96</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus ursinus</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
2. <u>Rubus armeniacus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
<u>5</u> = Total Cover				
% Bare Ground in Herb Stratum <u>4</u> % Cover of Biotic Crust <u>0</u>				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:
 Vegetation was dense with primarily non-native upland forbs.

SOIL

Sampling Point: Up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
4	10YR 3/3	100					loamy sa ₂	hard and rocky, mostly organic l ₂

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.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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

Restrictive Layer (if present): Type: <u>rocks</u> Depth (inches): <u>4</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
The soil was very hard and rocky and impenetrable with a shovel, so the pit was very shallow. The soil had a lot of organic content and had a similar consistency to peaty potting soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology was present.

ATTACHMENT B: PHOTOGRAPHS

ATTACHMENT B: PHOTOGRAPHS



Photograph 1:
General site
photo, facing
south. The
forested wetland
is shown in the
right side of the
photograph, and
the toe of the
slope shown on
the left side of
the photograph.



Photograph 2:
General site
photo, facing
west, with the
forested wetland
in the
background.



Photograph 3:
View of
sampling point
Wet 2, facing
north.



Photograph 4:
View of the Wet
2 soil pit.



Photograph 5:
View of
sampling point
Wet 1, facing
north.



Photograph 6:
View of the Wet
1 soil pit.



Photograph 7:
View of
sampling point
Trans 1, facing
southwest.



Photograph 8:
View of the
Trans 1 soil pit.



Photograph 9:
View of
sampling point
Up 1, facing
north.



Photograph 10:
View of the Up 1
soil pit.

ATTACHMENT C: PLANT LIST

ATTACHMENT C: PLANT LIST

This table contains all of the plant species that were recorded in the survey area, along with their wetland indicator statuses.

Scientific Name	Common Name	Wetland Indicator Status
<i>Bromus diandrus</i>	ripgut brome	NL
<i>Cirsium vulgare</i>	bull thistle	FACU
<i>Cortaderia</i> sp.	pampas grass	FACU
<i>Erodium brachycarpum</i>	short fruited filaree	NL
<i>Fragaria vesca</i>	wild strawberry	UPL
<i>Hedera helix</i>	English ivy	FACU
<i>Hordeum murinum</i>	foxtail barley	FACU
<i>Rubus armeniacus</i>	Himalayan blackberry	FAC
<i>Rubus ursinus</i>	California blackberry	FAC
<i>Salix lasiolepis</i>	arroyo willow	FACW
<i>Schoenoplectus californicus</i>	California bulrush	OBL
<i>Stipa</i> sp.	rice grass	NL
<i>Toxicodendron diversilobum</i>	poison oak	FACU
<i>Veronica americana</i>	American brooklime	OBL

Source: United States Army Corps of Engineers 2018

Notes: Wetland Indicator Status Definitions:

- Obligate Plant (OBL) = occurs in aquatic resources more than 99 percent of the time
- Facultative Wetland Plant (FACW) = occurs in aquatic resources 67 to 99 percent of the time
- Facultative Plant (FAC) = occurs in aquatic resources 34 to 66 percent of the time
- Facultative Upland Plant (FACU) = occurs in aquatic resources 1 to 33 percent of the time
- Upland Plant (UPL) = occurs in uplands more than 99 percent of the time
- Not Listed Plant (NL) = not listed in the National Wetland Plant List for this region

ATTACHMENT D: AQUATIC RESOURCES SPREADSHEET

Attachment D: Aquatic Resources Spreadsheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	NWPR_Determine_Code	Latitude	Longitude	Local_Waterway
Wet 2	CALIFORNIA	PFO	DEPRESS	Area	0.48	ACRE	RHAB1WETNONADJ		37.726915	-122.126007	