



April 16, 2021

Katerina Galacatos
South Branch Chief
U.S. Army Corps of Engineers
450 Golden Gate Avenue, 4th Floor
San Francisco, CA 94102

Subject: Request for Verification of Jurisdictional Delineation, Hayward Dermody Project Study Site, 3636 Enterprise Avenue, City of Hayward, Alameda County, California

Dear Katerina:

On behalf of Dermody Properties, LSA is requesting verification of the extent of U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act on the 3636 Enterprise Avenue, Hayward Dermody Project Study Site (study site), City of Hayward, Alameda County, California. This letter reports the results of a delineation performed by LSA of the potential extent of waters of the United States, including wetlands, on the study site.

This delineation is being conducted as part of planning for development of an industrial building on the study site.

SITE DESCRIPTION

The approximately 10.87-acre study site is located along the southern side of Enterprise Avenue, west of its intersection with Whitesell Street, and approximately 0.6 miles northwest of the Eden Landing Road/Clawiter Road exit from State Highway 92, east of the San Mateo Bridge toll station. The study site is accessed by driving north on Clawiter Road and turning west onto Enterprise Avenue.

The study site comprises Alameda County Assessor's Parcels 439-99-35 and 439-99-36-2. The site is situated within Township 3 South, Range 3 West in the NE ¼ of Section 36 and Range 2 West in the NW ¼ of Section 31 on the San Leandro, California 7.5-minute USGS quadrangle, and is centered at 37.6322° North Latitude and 122.1313° West Longitude. Figures 1 and 2 (attached) depict the regional location and study site location, respectively.

The site has elevations between 7 and 13 feet above mean sea level, with most of the site relatively flat and below the elevation of 11 feet. The study site is annually mowed grassland and occupied by a small building and four radio broadcast towers. The site is surrounded by a chain link fence, except for its western edge. Land uses surrounding the study site are filled vacant land to the east, a municipal wastewater treatment plant to the north, warehouse/trucking buildings to the west, and a railroad track, a drainage ditch, and a leveed former brackish marsh to the south.

Vegetation

Vegetation on the study site is predominantly ruderal grassland, except for horticultural plantings along the elevated western site boundary planted to screen the adjacent warehouse building. Plant species observed include ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum*), creeping wild rye (*Elymus triticoides*), salt grass (*Distichlis spicata*), Italian rye (*Festuca perennis*), cutleaf geranium (*Geranium dissectum*), common groundsel (*Senecio vulgaris*), bur clover (*Medicago polymorpha*), filaree (*Erodium cicutarium*), bristly ox-tongue (*Helminthotheca echinoides*), curly dock (*Rumex crispus*), pampas grass (*Cortaderia jubata*), coyote brush (*Baccharis pilularis*), fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativa*), and alkali heath (*Frankenia saligna*).

Soil

Soils on the entire study site are mapped as Reyes clay, 0 to 2 percent slopes (USDA WebSoil Survey, accessed March 6, 2021). Reyes clay is listed as completely hydric. The site has been tilled in the past for agricultural purposes and portions of the site appear to contain imported fill. There are indistinct low berms and apparent shallow fill areas in the western portion of the site. Much of the soil observed had a darker moist color of 10YR2/1 and 2/2 compared to the 10YR3/3 and 4/3 colors described for Reyes clay. These darker colors may indicate accumulation of additional organic matter since the termination of this soil's formative brackish marsh hydrology and anaerobic soil conditions.

Hydrology

The study site slopes very gently toward the southwest. A 2- to 3-foot-high fill slope at the adjacent warehouse prevents surface runoff from flowing westward. The elevated railroad bed prevents surface runoff from draining southward from that part of the site, and a low berm along the southern fence line somewhat restricts drainage to the south from that location. Four shallow topographic depressions are visible in the western portion of the site. Any surface drainage leaving the site would flow southwest to the adjacent leveed and ditched brackish marsh area. The areas southwest of the project site are leveed and appear cut off from full tidal action from the San Francisco Bay located approximately 1 mile west of the site, but may still have muted tidal influence. San Francisco Bay is a tidal Traditional Navigable Water of the United States.

REGULATORY BACKGROUND

Clean Water Act Jurisdiction

The Corps is responsible under Section 404 of the Clean Water Act (CWA) to regulate the discharge of fill material into waters of the United States. In general, a Corps permit must be obtained before placing such fill. The type of permit depends on the acreage involved and the purpose of the proposed fill.

This delineation was completed in accordance with the CWA definition of waters of the United States as revised on April 21, 2020 (33 CFR Part 328).

Per the revised definition, waters of the United States fall into four clear categories:

- Territorial seas and traditional navigable waters;
- Intermittent and perennial streams that are tributaries to navigable waters;
- Certain lakes, ponds, and impoundments; and
- Wetlands adjacent to any of the preceding three categories of jurisdictional waters.

These waters may be sorted into two broader categories of waters: wetlands and non-wetland waters. Non-wetland waters generally include un-vegetated waterbodies and watercourses such as rivers, streams, lakes, ponds, coastal waters, and estuaries. Wetlands generally include marshes, meadows, seep areas, springs, floodplains, basins, and other areas experiencing extended seasonal soil saturation and dominated by wetland plant cover.

The revised definition also details 12 specific categories of features that are not waters of the United States and thus not subject to CWA Section 404 regulation. Examples include features that only hold or convey water in direct response to rainfall (e.g., ephemeral features), groundwater, many ditches, and waste treatment systems.

Wetland delineations for Section 404 purposes must be conducted according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Regional Supplement) (Corps 2008) and the 1987 *Corps of Engineers Wetland Delineation Manual* (1987 Manual) (Environmental Laboratory 1987). This methodology entails examination of specific sample points within potential wetlands for hydrophytic vegetation, hydric soils, and wetland hydrology. By the federal definition, all three parameters must be present for an area to be considered a wetland.

Hydrophytic plant species are listed by the National Wetland Plant List (2016). The National List identifies five categories of plants according to their frequency of occurrence in wetlands. The categories are:

1. Obligate wetland plants (OBL): Plants that occur almost always in wetlands
2. Facultative wetland plants (FACW): Plants that usually occur in wetlands
3. Facultative plants (FAC): Plants that are equally likely to occur in wetlands or non-wetlands
4. Facultative upland plants (FACU): Plants that usually occur in uplands
5. Obligate upland plants (UPL): Plants that occur almost always in non-wetlands

An area is generally considered to have hydrophytic vegetation when more than 50 percent of the dominant species in each stratum (tree, shrub, and herb) are in the obligate wetland, facultative wetland, or facultative categories.

Hydric soils are defined by criteria set forth by the National Technical Committee for Hydric Soils (NTCHS). These criteria are given in the Wetland Delineation Manual Supplement and are based on depth and duration of soil saturation. Hydric soils are commonly identified in the field by using indirect indicators of saturated soil, technically known as redoximorphic features. These features are caused by anaerobic, reduced soil conditions that are brought about by prolonged soil saturation. The most common redoximorphic features are distinguished by soil color, which is strongly influenced by the frequency and duration of soil saturation. Hydric soils tend to have dark (low chroma) colors that are often accompanied by reddish mottles (iron mottles), reddish stains on root channels (oxidized rhizospheres), or gray colors (gleying). The Arid West Supplement contains descriptions of numerous federally-recognized hydric soil indicators.

Under natural conditions, development of hydrophytic vegetation and hydric soils are dependent on a third characteristic, wetland hydrology. This criterion is met if the area experiences inundation or soil saturation to the surface for a period equal to at least five percent of the growing season (about 14 days in the region of the study site) in a year of median rainfall. In most cases, this criterion can only be measured directly by monitoring the site through an entire wet season. In practice, the hydrological status of a particular area is usually evaluated using indirect indicators. Some of the indicators that are commonly used to identify wetland hydrology include biotic crusts and oxidized rhizospheres around roots. The Arid West Supplement gives thorough descriptions of numerous federally-recognized indicators of wetland hydrology.

Porter-Cologne Water Quality Control Act Jurisdiction

In accordance with the Porter-Cologne Water Quality Control Act (Water Code, § 13000 et seq.), the State Water Resources Control Board and the Regional Water Quality Control Boards (Water Boards) are authorized to regulate discharges of waste, which includes discharges of dredged or fill material, that may affect the quality of waters of the state. Additionally, in accordance with CWA Section 401, Water Quality Certification must be obtained from the Water Boards for discharges into waters of the United States requiring federal CWA Section 404 permits.

The Water Code defines “waters of the state” broadly to include “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code § 13050 (e)). The Water Boards have determined that all waters of the United States are also waters of the state by regulation. In certain circumstances, such as in the case of waters that are not tributary to navigable waters, waters of the state encompass further waters that do not meet the federal definition of waters of the United States.

METHODS

The field investigations of potential jurisdictional wetlands were conducted using the routine determination method provided in the *Corps of Engineers Wetlands Delineation Manual*

(Environmental Laboratory 1987) and the revised procedures in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West Supplement; U.S. Army Corps of Engineers 2008).

FIELD METHODS

LSA senior soil scientist Chip Bouril and senior biologist Dan Sidle investigated the study site on March 11, 2021. Potential jurisdictional boundaries were mapped using a global positioning system (GPS) receiver with potential sub-meter accuracy. Wetland boundaries were determined by following a combination of the limits of hydrophytic vegetation, the limits of observed wetland hydrology, and topographic breaks. LSA established eight sample points on the study site; their locations are shown on Figure 3.

The study site had received approximately 0.76 inches of rainfall (San Jose International Airport) in the 30 days prior to the field investigation. According to the Newark, CA WETS Station, the average rainfall for this period would be approximately 2.6 inches and there is a 30 percent chance that this station will have approximately 1.2 inches or less of rainfall. Thus, the recent rainfall appears to be below the expected 40 percent probability.

Early season growth phenology (no grass inflorescences) and grazing by resident Canada geese that had cropped vegetation to a height of 2 to 3 inches both made grass identification difficult during the field investigation.

RESULTS

Potential jurisdictional features and sample point locations are shown on Figure 3.

CWA Jurisdiction - Wetlands

A search of historical Google Earth aerial images yields some images that appear to show vegetative differences at four shallow depressions compared to the remainder of the study site, but on-site vegetation observations do not necessarily back up these aerial images. The historical images also support the possibility of increased wetland hydrology and rarely at least ephemeral ponding in these same depressions.

The Reyes clay soil mapped on the study site is listed as completely hydric, although the entire site has been separated by extensive leveeing from the brackish marsh hydrology that formed this soil. The series description for Reyes soil includes at least 5 percent “irregular oxidized iron masses on the surface along pores” (i.e. redoximorphic mottling) extending from one inch to at least 37 inches in depth. With the exception of one location (i.e., Sample Points 1 and 2), no redoximorphic soil mottling was observed at the areas investigated. This suggests that the soil saturation and seasonally cycling anaerobic/aerobic soil conditions that create redoximorphic mottling no longer exist at the study site and that current site conditions have erased these features from the site soil.

Sample Points 1 and 2 were placed near the edge of a shallow depression in the northwestern portion of the study site. Sample Point 1, within the depression, contained vegetation cover meeting

hydrophytic vegetation criteria with few non-hydrophytes present and redoximorphic soil mottling sufficient to meet hydric soil criteria. There were no surface indicators of wetland hydrology, but with the concave landscape position, hydrophytic vegetation, and recent lower than average rainfall, wetland hydrology could be concluded. Sample Point 2, located on the side slope of the depression, contained a mix of hydrophytic and non-hydrophytic plant species that did not meet hydrophytic vegetation criteria. Its soil did contain some redoximorphic mottling, but not enough to meet any listed hydric soil indicators. Similar to Sample point 1, there were no wetland hydrology indicators observed. With the conclusion that this depression meets jurisdictional wetland criteria, the potential jurisdictional limit of this feature was mapped following its topographic bank slope and excluding higher elevation perimeter areas with significant cover of the non-hydrophytes common groundsel and bur clover. This feature is mapped as Seasonal Wetland 1, with a potential jurisdictional area of 4,085 square feet (0.094 acre).

Sample Points 3 and 4 were placed at the northern end of a shallow depression in the western portion of the study site. Sample Point 3, within the floor of the depression, contained predominantly hydrophytic vegetation cover that meets hydrophytic vegetation criteria. The soil at this sample point did not display any redoximorphic soil mottling or other hydric soil indicators. No wetland hydrology indicators were observed. Sample Point 4, placed on a small adjacent berm elevated from the depression, contained vegetation cover meeting hydrophytic vegetation criteria but also contained several non-hydrophytes not observed at Sample Point 3. Like Sample Point 3, Sample point 4 did not display any redoximorphic soil mottling or other hydric soil indicators.

Sample Points 5 and 6 were placed at another shallow depression in the western portion of the study site. Sample Point 5, within the floor of the depression, contained hydrophytic vegetation cover that meets hydrophytic vegetation criteria. The soil at this sample point did not display any redoximorphic soil mottling or other hydric soil indicators. No wetland hydrology indicators were observed. Sample Point 6, placed on the other end of the same small adjacent berm as Sample Point 4 and elevated from the depression, contained vegetation cover with a mix of hydrophytic and non-hydrophytic vegetation cover that did not meet hydrophytic vegetation criteria. Like Sample Point 5, Sample Point 6 did not display any redoximorphic soil mottling or other hydric soil indicators. Like Sample Point 5, no wetland hydrology indicators were observed.

Both basins investigated by Sample Points 3 through 6 fail to show evidence of current hydric soil indicators and failing to show evidence of wetland hydrology. Therefore, we conclude that neither basin meets jurisdictional wetland criteria.

Sample Points 7 and 8 were placed at a small, shallow depression along the southern edge of the study site. Sample Point 7, within the floor of the depression and within an even smaller patch of brass buttons (*Cotula coronopifolia*, OBL), contained hydrophytic vegetation cover that meets hydrophytic vegetation criteria. The soil at this sample point did not display any redoximorphic soil mottling or other hydric soil indicators and no wetland hydrology indicators were observed. Sample Point 8, nearby and at an only slightly higher elevation, contained sufficient cover of identifiable ripgut grass to fail to meet hydrophytic vegetation criteria, even though it still supported a low percentage cover of brass buttons. Similar to Sample Point 7, Sample Point 8 did not display any

redoximorphic soil mottling or other hydric soil indicators and no wetland hydrology indicators were observed.

The presence of obligate wetland indicator status brass buttons at Sample Points 7 and 8 suggest a wetland hydrology, but the presence of non-hydrophytic grasses suggests a non-wetland hydrology. (Brass buttons can be somewhat invasive, occupying disturbed areas with sufficient soil moisture to complete their seed production.) The lack of hydric soil indicators and wetland hydrology indicators suggests a non-wetland hydrology, although recent low rainfall years may have suppressed wetland hydrology indicators that would otherwise be present in more normal rainfall years. But the redoximorphic soil mottling expected from wetland hydrology would remain visible after several dry years. In balance, we conclude that the observed evidence for this basin fails to meet jurisdictional wetland criteria.

No discernable or potential surface connection was observed between Seasonal Wetland 1 and downslope off-site areas to the south, therefore Seasonal Wetland 1 is non-jurisdictional under the 2020 definition of waters of the United States. Similarly, none of the other shallow depressions investigated show any discernable surface connection to downslope off-site areas to the south.

CWA Jurisdiction - Other Waters

No evidence of Other Waters was observed at the study site.

Other Observations

The remainder of the study site did not contain any observed depressions and its vegetation appeared predominantly non-hydrophytic.

No other evidence of potential waters of the United States was observed on the study site.

Porter-Cologne Water Quality Control Act (RWQCB) Jurisdiction

Even though Seasonal Wetland 1 is not tributary to navigable waters, under the RWQCB definition of “waters of the state,” Seasonal Wetland 1 would likely be jurisdictional under the Porter-Cologne Water Quality Control Act.

CONCLUSIONS

No potential Clean Water Act Section 404 jurisdictional features are identified on the Hayward Dermody Project Study Site. One potential non-jurisdictional feature and study site boundaries are mapped on Figure 3.

The findings and conclusions presented in this report, including the location and extent of other waters subject to regulatory jurisdiction, represent the professional opinion of LSA. These findings and conclusions should be considered preliminary until verified by the Corps.

Please contact George Molnar at (510) 236-6810 to schedule a verification visit.

Sincerely,

LSA Associates, Inc.



Chip Bouril
Senior Soil Scientist

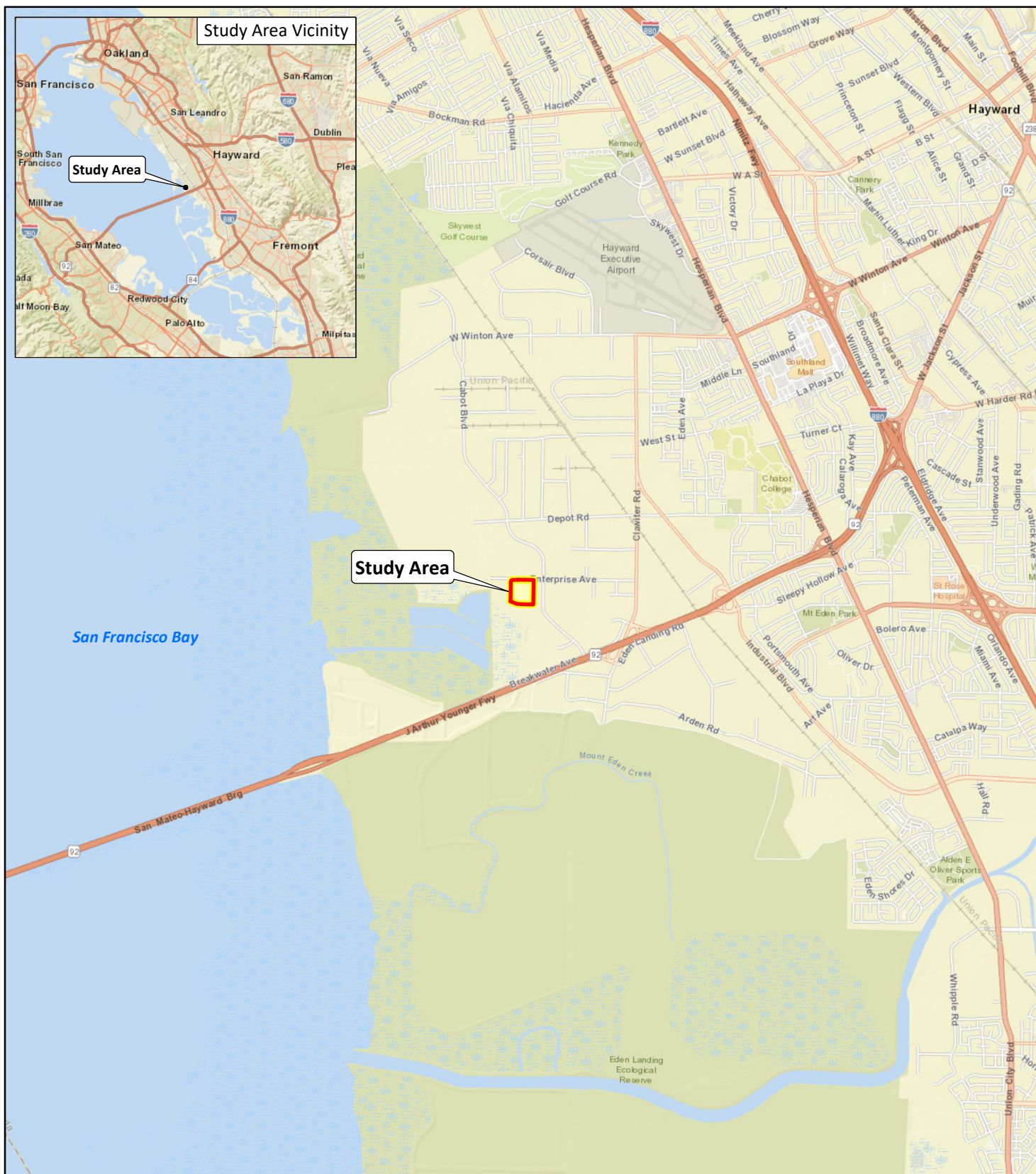
Attachments: Figure 1: Regional Location Map
Figure 2: Site Location Map
Figure 3: Potential Waters of the United States Map
Data Sheets 1 through 8

cc: George Condon, Dermody Properties

REFERENCES

- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical report Y-87-1, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. Available at: http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/Regions/pdf/reg_AW_2016v1.pdf
- U. S. Army Corps of Engineers (Corps). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U. S. Army Engineer Research and Development Center.

ATTACHMENTS



LSA

LEGEND

Study Area



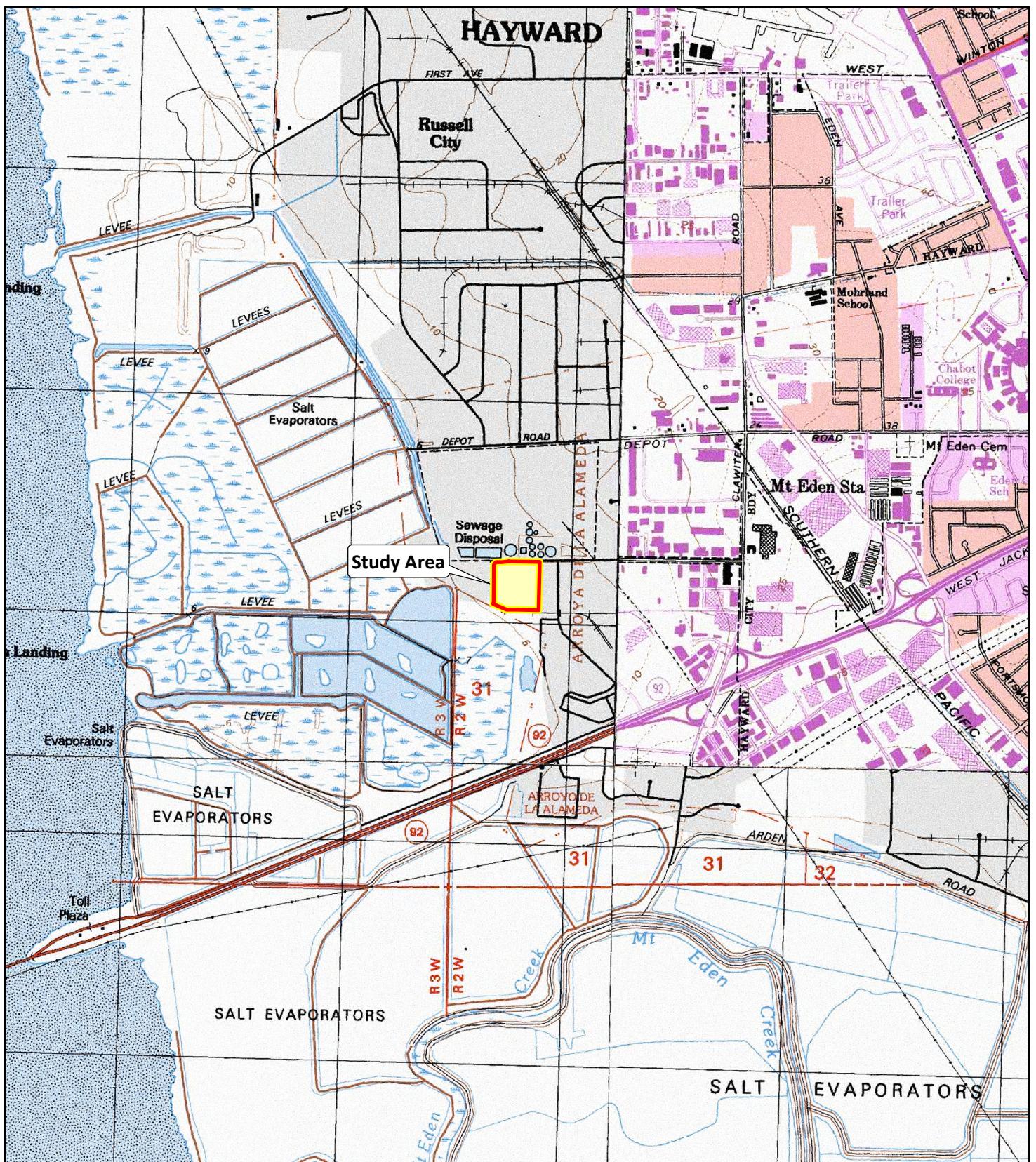
0 2000 4000
FEET

SOURCE: Esri World Street Map (2021).

I:\DYP2101\GIS\Maps\Delineation\Figure 1_Regional Location.mxd (3/29/2021)

FIGURE 1

*Whitesell St & Enterprise Ave
Hayward, Alameda County, California
Regional Location*



LSA

LEGEND

Study Area

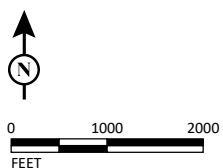


FIGURE 2

Whitesell St & Enterprise Ave
Hayward, Alameda County, California
Study Area Location

SOURCE: USGS 7.5-minute Topo Quads - San Leandro, Calif. (1993), Hayward, Calif. (1980), Redwood Point, Calif., and Newark, Calif. (1993).

I:\DYP2101\GIS\Maps\Delineation\Figure 2_Study Area Location.mxd (3/29/2021)



WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: HAYWARD DRYWEDY City/County: HAYWARD/ALAMEDA Sampling Date: 11 MAR 2011
 Applicant/Owner: _____ State: CA Sampling Point: 1
 Investigator(s): C. Bouril Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): < 3
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: REYES CLAY, 0-2% SLOPES NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks: <u>* RAINFALL HAS BEEN LOW PART TWO YEARS.</u> <u>SP-2</u> <u>SP-1</u>					

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>FRANKENIA SALICINA</u>	<u>20</u>	<u>X</u>	<u>FACW</u>	
2. <u>RUMEX CRISPUS</u>	<u>5</u>		<u>FAC</u>	
3. <u>FESTUCA PERENNIS</u>	<u>50</u>	<u>X</u>	<u>FAC</u>	
4. <u>DISTICHUS SPICATA</u>	<u>5</u>		<u>FAC</u>	
5. <u>GERANIUM DISSECTUM</u>	<u>1</u>		<u>UPL</u>	
6. <u>SENECIO VULGARIS</u>	<u>1</u>		<u>FACU</u>	
7.				
8.				
Total Cover: <u>82</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 7/2						L	MOIST
2-7	10YR 4/2		7.5YR 4/6	5	C	PL	L	DRY-ISA
7-12	10YR 3/1						C	MOIST

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.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|--|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (All) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☒ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (SI) | ☐ Vernal Pools (F9) |
| ☐ Sandy Gleyed Matrix (S4) | |

- | |
|---|
| ☐ 1 cm Muck (A9) (LRR C) |
| ☐ 2 cm Muck (A10) (LRR B) |
| ☐ Reduced Vertic (F18) |
| ☐ Red Parent Material (TF2) |
| ☐ 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 X

No _____

Remarks:

RECENT REDOX

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|---|--|--|
| ☐ Surface Water (A1) | ☐ Salt Crust (B11) | ☐ Water Marks (B1) (Riverine) |
| ☐ High Water Table (A2) | ☐ Biotic Crust (B12) | ☐ Sediment Deposits (B2) (Riverine) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Drift Deposits (B3) (Riverine) |
| ☐ Water Marks (B1) (Nonriverine) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Drainage Patterns (B10) |
| ☐ Sediment Deposits (B2) (Nonriverine) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Dry-Season Water Table (C2) |
| ☐ Drift Deposits (B3) (Nonriverine) | ☐ Presence of Reduced Iron (C4) | ☐ Crayfish Burrows (C8) |
| ☐ Surface Soil Cracks (B6) | ☐ Recent Iron Reduction in Plowed Soils (CS) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☒ Inundation Visible on Aerial Imagery (B7) | ☐ Thin Muck Surface (C7) | ☐ Shallow Aquitard (D3) |
| ☐ Water-Stained Leaves (B9) | ☐ Other (Explain in Remarks) | ☐ FAC-Neutral Test (D5) |

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): _____
(includes capillary fringe)Wetland Hydrology Present? Yes X No _____

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

Remarks:

NO SPEC. INDICATORS
USE REDOX AS INDICATOR

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERMODY HAYWARD City/County: _____ Sampling Date: 11 MAR 21
 Applicant/Owner: _____ State: CA Sampling Point: 2
 Investigator(s): C. Bouril Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 4
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: <u>LOW RAINFALL</u>			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>33</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>1</u> x 1 = _____ FACW species <u>1</u> x 2 = _____ FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>1</u> x 5 = _____ Column Totals: <u>90</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>3.6</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____				
Herb Stratum (Plot size: _____) 1. <u>SENECIO VULGARIS</u> <u>20</u> <u>X</u> <u>FACU</u> 2. <u>FESTUCA PERENNIS</u> <u>30</u> <u>X</u> <u>FAC</u> 3. <u>MEDICAGO POLYMERPHA</u> <u>30</u> <u>X</u> <u>FACU</u> 4. <u>DISTICHLIS SPICATA</u> <u>10</u> _____ <u>FAC</u> 5. _____ 6. _____ 7. _____ 8. _____ Total Cover: <u>90</u>				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — 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 <u>X</u>				
Remarks: _____				

SOIL

Sampling Point: 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		
0-2	10YR2/2							WET
2-9	10YR4/2		7.5YR4/6	3	C	PL		DRY SOIL
9-12	10YR2/1							WET

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR C)
☐ 1 cm Muck (A9) (LRR D)
☐ Depleted Below Dark Surface (All)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (SI)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (FI)
☐ Loamy Gleyed Matrix F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ 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 X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (Nonriverine)
☐ Sediment Deposits (B2) (Nonriverine)
☐ Drift Deposits (B3) (Nonriverine)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (CI)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (BI) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

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): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No X

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

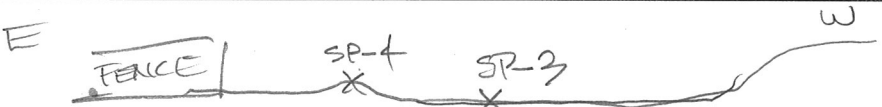
Remarks:

NO SPEC. INDICATORS. SIDESLOPE LANDSCAPE
POSITION... UNUSUAL PONDING OR SATURATION.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERWODY City/County: _____ Sampling Date: 11 MARCH 21
 Applicant/Owner: _____ State: CA Sampling Point: 3
 Investigator(s): C. Bouril Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 22
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: 			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>FRANKENIA SALICINA</u>	<u>25</u>	<u>X</u>	<u>FACW</u>	
2. <u>DISTICHALIS SPICATA</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
3. <u>FESTUCA PERENNIS</u>	<u>40</u>	<u>X</u>	<u>FAC</u>	
4. <u>UK GRASS</u>	<u>15</u>		<u>?</u>	
5.				
6.				
7.				
8.				
Total Cover: <u>100</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Remarks:

SOIL

Sampling Point: 3

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		
0-12	10YR2/1		—				C	MOIST

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

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 X

Remarks:

NO INDICATORS

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____	No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No <u>X</u>	Depth (inches): _____

Wetland Hydrology Present?

Yes _____

No X

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

Remarks:

NO SEC. INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERWOOD City/County: _____ Sampling Date: 11 MARCH 21
 Applicant/Owner: _____ State: CA Sampling Point: 4
 Investigator(s): C. Bouril Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): BERM Slope (%): 10
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks:			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>DISTICHIS SPICATA</u>	<u>7</u>		<u>FAC</u>	
2. <u>FRANKENIA SALICINA</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	
3. <u>SENECIO VULGARIS</u>	<u>2</u>		<u>FACU</u>	
4. <u>RUILEX CRISPUS</u>	<u>5</u>		<u>FAC</u>	
5. <u>FESTUCA PERENNIS</u>	<u>10</u>		<u>FAC</u>	
6. <u>UK GRASS</u>	<u>10</u>		<u>?</u>	
7. <u>GERANIUM DISSECTUM</u>	<u>10</u>		<u>UPL</u>	
8. <u>ERODIUM CICUTARIUM</u>	<u>5</u>		<u>UPL</u>	
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Remarks:

SOIL

Sampling Point: 4

[illegible]

HYDROLOGY

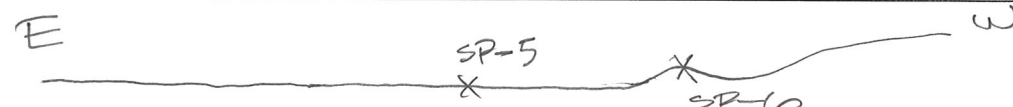
Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)	
<u>Primary Indicators (any one indicator is sufficient)</u>					
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)			
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)			
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)			
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)			
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)			
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)			
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (C5)	☐ Saturation Visible on Aerial Imagery (C9)			
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)			
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	Wetland Hydrology Present? Yes ☐ No ☒		
Water Table Present?	Yes ☐ No ☒	Depth (inches):			
Saturation Present?	Yes ☐ No ☒	Depth (inches):			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: NO SFC INDICATORS. ON CORNEX L&ID FORM/ BERM, IS UNLIKELY WET HYDROLOGY					

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERMODY City/County: _____ Sampling Date: 11 MARCH 21
 Applicant/Owner: _____ State: CA Sampling Point: 5
 Investigator(s): C. BOURL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): <2
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: REYES CLAY NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: 			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>FRANKENIA SALICINA</u>	<u>40</u>	<u>X</u>	<u>FACW</u>	
2. <u>DISTICHUS SPICATA</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
3. <u>? HORDEUM MARINUM?</u>	<u>40</u>	<u>X</u>	<u>FAC</u>	
4.				
5.				
6.				
7.				
8.				
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks: <u>NO NOX-HEP SPECIES</u>				

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-1	10YR 7/2	—	—	—	—	—	DOFF	MOIST
1-12	10YR 7/1	—	—	—	—	—	C	MOIST

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ 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 X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

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): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes _____

No X

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

Remarks:

NO SPEC. INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERWEDY City/County: _____ Sampling Date: 11/28/21
 Applicant/Owner: _____ State: CA Sampling Point: 6
 Investigator(s): C. BOURL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): BOPU Slope (%): 5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks:			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = <u>> 3</u>
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is $\leq 3.0^1$ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____)				
1. GERANIUM DISSECTUM	30	X	UPL	
2. FESTUCA PERENNIS	5		FAC	
3. DISTICHLIS SPICATA	5		FAC	
4. RUMEX CRISPUS	5		FAC	
5. MEDICAGO POLYMORPHA	10		FACU	
6. BROMUS DIANDRUS	20	X	UPL	
7. HORDEUM MURINUM	10		FACU	
8. HORDEUM MARINUM	10		FAC	
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. SILYBUM MARITIMUM	5		UPL	
2. SENEIO VULGARIS	2		FACU	
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		

Remarks:

6

[illegible]

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

No

_____ Water Marks (B1) **(Riverine)**
 _____ Sediment Deposits (B2) **(Riverine)**
 _____ Drift Deposits (B3) **(Riverine)**
 _____ Drainage Patterns (B10)
 _____ Dry-Season Water Table (C2)
 _____ Crayfish Burrows (C8)
 _____ Saturation Visible on Aerial Imagery (C9)
 _____ Shallow Aquitard (D3)
 _____ FAC-Neutral Test (D5)

No

CONVEX TOPO POSITION, NO GFC INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERMODY City/County: _____ Sampling Date: 11 Nov 2011
 Applicant/Owner: _____ State: CA Sampling Point: 7
 Investigator(s): C. BOURAL Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): < 2
 Subregion (LRR): LRR C Lat: ? Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: <u>N</u> <u>SP-7</u> <u>X</u>			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>100</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>DISTICHUS SPICATA</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
2. <u>FRANKENIA SALICINA</u>	<u>15</u>		<u>FACW</u>	
3. <u>FESTUCA PERENNIS</u>	<u>10</u>		<u>FAC</u>	
4. <u>COTULA CORONOPIFOLIA</u>	<u>25</u>	<u>X</u>	<u>OBL</u>	
5. <u>? HORDEUM MARINUM ?</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
6. <u>? BROWNS DIKIDRUS ?</u>	<u>?</u>			
7.				
8.				
Total Cover: <u>100</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum		% Cover of Biotic Crust		
Remarks: <u>COCO LICKED TO SUELL PATCH.</u>				

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12	10YR2/1						C	MOIST

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR C)
☐ 1 cm Muck (A9) (LRR D)
☐ Depleted Below Dark Surface (All)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (SI)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ 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 X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (Nonriverine)
☐ Sediment Deposits (B2) (Nonriverine)
☐ Drift Deposits (B3) (Nonriverine)
☒ Surface Soil Cracks (B6)
☒ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Plowed Soils (CS)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X
 Water Table Present? Yes _____ No X
 Saturation Present? Yes _____ No X
 (includes capillary fringe)

Depth (inches): _____

Depth (inches): _____

Depth (inches): _____

Wetland Hydrology Present?

Yes _____

No X

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

Remarks:

NO SEC. INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: DERMODY City/County: HAYWARD/ALAMEDA Sampling Date: 11 MARCH 21
 Applicant/Owner: _____ State: CA Sampling Point: 8
 Investigator(s): C. BOORIC Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): < 2
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: N SP-8 S			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				Prevalence Index worksheet: Total % Cover of: OBL species _____ x 1 = _____ FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species _____ x 4 = _____ UPL species <u>60</u> x 5 = <u>300</u> Column Totals <u>100</u> (A) <u>405</u> (B) Prevalence Index = B/A = <u>4.05</u>
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: — Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. DISTICHUS SPICATA	20	X	FAC	
2. LOTUS CORNICULATUS	5		FAC	
3. GERANIUM DISSECTUM	15		UPL	
4. SILYBUM MARIANUM/CADY	10		UPL	
5. FRANKENIA SALICINA	15		FACW	
6. BROWNS DIKIDRUS	35	X	UPL	
7.				
8.				
Total Cover: <u>100</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12	10YR2/1		—				C	moist

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)
☐ Sandy Gleyed Matrix (S4)	

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ 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 (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)
☒ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

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:

NO SFC. INDICATORS.