Aquatic Resources Delineation Report

7705 Hickory Avenue

Orangevale, Sacramento County, California

February 2021

MADRONE ECOLOGICAL CONSULTING

Prepared for:
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1.0 INTRODUCTION

This report presents the results of a delineation of aquatic resources within the 7705 Hickory Avenue property (Study Area) conducted by Madrone Ecological Consulting, LLC (Madrone). The approximately 5-acre Study Area is located north of El Sorbrante Way in Orangevale, Sacramento County, California in Section 20, Township 10 North, Range 7 East, MDB&M (Longitude -121.239326, Latitude 38.706835; NAD83). The Study Area is portrayed on the USGS "*Folsom, California*" 7.5-Minute Series Topographic Quadrangle (USGS 2018) (**Figure 1**).

1.1 Contact Information

Property Owner

Aleksey Zhirkov
7705 Hickory Avenue
Orangevale, California 95662

Agent

Ben Watson
Madrone Ecological Consulting, LLC
8421 Auburn Boulevard, Suite 248
Citrus Heights, California 95610

2.0 METHODOLOGY

Madrone senior biologist Matt Hirkala conducted a delineation of aquatic resources within the Study Area on 20 October 2020. Water features and data points were mapped in the field with an Arrow 100 GNSS unit, which is capable of sub-meter accuracy. Three-parameter data (vegetation, soils, and hydrology) were collected at each data point, documenting wetland/waters or upland status, as appropriate. The delineation map was prepared in accordance with the *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a). The field data was overlaid on an ortho-rectified aerial photograph (Maxar 2019).

The delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and the Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetlands Delineations* (USACE 2016b). U.S. Army Corps of Engineers (USACE) regulations (33 CFR 328) were used to determine the presence of Waters of the United States other than wetlands. The most recent *National Wetland Plant List* (Corps 2018) was used to determine the wetland indicator status of plants observed in the Study Area. The *Jepson eFlora* (Jepson Flora Project 2020) was used for plant nomenclature, except where it conflicted with the nomenclature in the *National Wetland Plant List*, which was given priority.

3.0 EXISTING CONDITIONS

The Study Area is situated on moderately hill terrain that includes fallow lands between approximately 192 and 218 feet above mean sea level according to LiDAR elevation data provided to Sacramento County by Merrick & Company in 2004. The south half of the property encompasses a single-family residence with out-structures including barns, sheds, and equipment storage areas while the north portion of the site includes an impounded drainage and an open, undeveloped field.

3.1 Terrestrial Vegetation Communities

3.1.1 Annual Brome Grassland

Annual brome grasslands occupy most of the site; common grass species include soft brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), perennial ryegrass (*Lolium perenne*), and wild oats (*Avena fatua*). Forbs observed include prickly wild lettuce (*Lactuca serriola*) and wild radish (*Raphanus sativus*). Several oaks (*Quercus* spp.) are situated along the periphery of the site and form privacy breaks.

3.1.2 Ruderal/Developed Lands

The approximate southeast one-quarter of the Study Area is occupied by the aforementioned private residence, driveways, and out-structures. Vegetation in this area is either absent, such as in the case of the driveways, or maintained landscaping in the vicinity of the house, which is surrounded by a watered/manicured lawn. Trees and shrubs include several native oaks as well as ornamental or fruit species such as edible fig (*Ficus carica*) and London plane (*Platanus* x *hispanica*) .

3.2 Hydrology

The Study Area, which generally drains to the north, is located in the *Dry Creek Watershed* (10-digit HUC 1802011101) and the *Lower American Sub-basin* (8-digit HUC 18020111) (USGS 2013).

A small unnamed tributary of Cirby Creek historically entered the parcel near its northwest corner before flowing off-site to the north; however, this drainage was impounded sometime between 1978 and 1993 to form a seasonal pond (HistoricAerials 2020). Currently, the seasonal pond receives water from the abutting property on the west by way of a culvert and conveys it to the neighboring parcel on the north through a small overflow channel. Water from this drainage/pond complex still appears to reach Cirby Creek, which is situated approximately 800 air-feet to the north. Cirby Creek flows into Dry Creek, and Dry Creek empties into Steelhead Creek, which is a tributary of the navigable Sacramento River.

3.3 Soils

The Natural Resources Conservation Service (NRCS) has mapped the two soil units listed below within the Study Area (**Figure 2**); none of their major components or inclusions are classified as hydric (NRCS 2020):

- Fiddyment-Orangevale-Urban land complex, 2 to 8% slopes (148) and
- Urban land-Xerarents-Fiddyment complex, 0 to 8% slopes (229).

3.4 Driving Directions

To access the Study Area from Sacramento, drive east on Interstate 80 to the Antelope Road exit (Exit 100). Keep right at the fork and merge onto Antelope Road and continue for approximately 7 miles before turning right onto Sunrise Boulevard. Drive south on Sunrise Boulevard for approximately 0.5 mile, and then turn left onto Oak Avenue and continue for 2 miles. Turn left on Hickory Avenue and drive for about 2 miles; continue on Hickory Avenue, which takes a 90-degree turn to the left, and continue for an additional 0.2 miles. The Study Area is on the right.

4.0 RESULTS

4.1 Seasonal Pond

One seasonal pond totaling approximately 0.219 acre represents the sole aquatic resource delineated within the Study Area. Noted plant species included tall nutsedge (*Cyperus eragrostis*), common spikerush (*Eleocharis palustris*), annual rabbitfoot grass (*Polypogon monspeliensis*), swamp prickle-grass (*Crypsis schoenoides*), Mediterranean barley (*Hordeum marinum*), large barnyard grass (*Echinochloa crus-galli*), and needle spike-rush (*Eleocharis acicularis*). Indicators of wetland hydrology observed included the presence of oxidized rhizospheres along live roots and biotic crust in the form of algal matting. The soil matrix colors were 10YR3/2 with approximately 8 to 10% 10YR4/6 redoximorphic concentrations along pore linings and in the matrix. The soil was considered to be hydric based on the presence of field indicator F6 (redox dark surface).

Data sheets are included in **Attachment A**, maps of the aquatic resources are included as **Figure 3** and **Attachment B**, and a list of the plant species observed in the Study Area with their wetland indicator status is included in **Attachment C**. GIS Shapefiles and the *Aquatic Resources Excel Spreadsheet* for the aquatic resources shown on **Figure 3** are included on a CD in **Attachment E**. Each of the feature types is described below.

5.0 CONCLUSION

Madrone has analyzed the jurisdictional status of the seasonal pond within the Study Area under the newly published and implemented *2020 Navigable Waters Protection Rule* (2020 Rule). The 2020 Rule defines jurisdictional waters for purposes of Section 404 of the Clean Water Act. It is our opinion that the seasonal pond would be considered jurisdictional in accordance with the 2020 Rule as it represents an impoundment of a tributary to the navigable Sacramento River as described in Section 3.2 above. Ultimately, the USACE, and not Madrone, maintains the authority to determine the jurisdictional status of aquatic features including that of the seasonal pond within the Study Area.

If your project requires impacts to the pond, and a Clean Water Act Section 404 permit is required, you may need to submit this aquatic resources delineation to the USACE for verification.

6.0 REFERENCES

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Figures

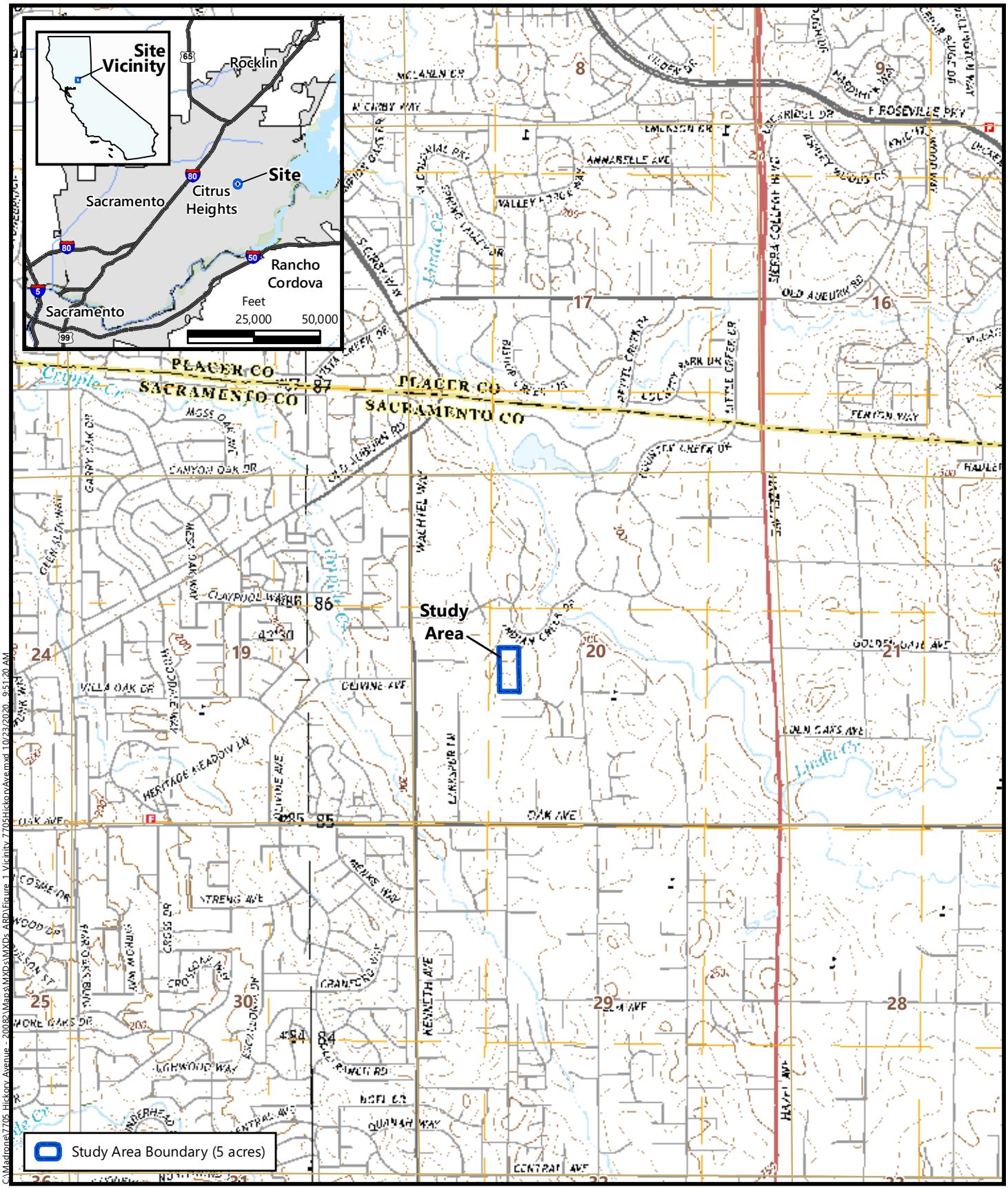
Attachments

Attachment A. Arid West Wetland Determination Data Forms

Attachment B. Aquatic Resources Delineation – 7705 Hickory Avenue

Attachment C. Plant Species Observed within the Study Area

Attachment D. GIS Shapefiles and the Aquatic Resources Excel Spreadsheet (Electronic Files)



Source: United States Geologic Survey, 2018.
"Folsom, California" 7.5-Minute Topographic Quadrangle
Section 20, Township 10 North, Range 7 East, MDB&M
Longitude -121.239326, Latitude 38.706835

Figure 1
Site and Vicinity

7705 Hickory Avenue
Sacramento County, California

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Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) database for Sacramento County, California
Aerial Source: Maxar, 10 November 2019.

Figure 2
Natural Resources Conservation Service Soils

7705 Hickory Avenue
Sacramento County, California

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Figure 3
Aquatic Resources

7705 Hickory Avenue
Sacramento County, California

Aerial Source: Maxar, 10 November 2019.

Attachment A

Arid West Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 7705 Hickory Avenue City/County: Sacramento Sampling Date: 10/20/20
Applicant/Owner: Aleksey Zhirkov State: CA Sampling Point: 1
Investigator(s): Matt Hirkala Section, Township, Range: Section 20, Township 10 North, Range 7 East, MDB&M
Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.707534 Long: -121.239761 Datum: NAD83
Soil Map Unit Name: 148 - Fiddyment-Orangevale-Urban land complex, 2-8% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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	x	No		
Hydric Soil Present?	Yes	x	No	**Is the Sampled Area within a Wetland?**	**Yes x No**
Wetland Hydrology Present?	Yes	x	No		

Remarks: This data point is located within an impounded natural drainage that has resulting in the development of a seasonal pond.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 4'x4')			
1. *Echinochloa crus-galli*	85	x	FACW
2. *Eleocharis palustris*	5		OBL
3.			
4.			
5.			
6.			
7.			
8.			
	90	=Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 100

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	**5**	x1 =	**5**
FACW species	**85**	x2 =	**170**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**90** (A)		**175** (B)

Prevalence Index = B/A = **1.9**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

_____ Morphological Adaptationd[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 x No x**

Remarks:

SOIL

Sampling Point: 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR3/2	92	10YR4/6	8	C	M, PL	silty clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- x Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 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:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- x Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- x Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- x FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Biotic crust present in the form of algal matting. Google Earth aerial photography dated February 2018 displays inundation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 7705 Hickory Avenue City/County: Sacramento Sampling Date: 10/20/20
Applicant/Owner: Aleksey Zhirkov State: CA Sampling Point: 1
Investigator(s): Matt Hirkala Section, Township, Range: Section 20, Township 10 North, Range 7 East, MDB&M
Landform (hillslope, terrace, etc.): top of slope Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.707481 Long: -121.239774 Datum: NAD83
Soil Map Unit Name: 148 - Fiddyment-Orangevale-Urban land complex, 2-8% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 **x**	**Is the Sampled Area within a Wetland?** **Yes** **No** **x**
Hydric Soil Present?	Yes	No **x**	
Wetland Hydrology Present?	Yes **x**	No	

Remarks: This data point is located approximately 5 feet higher in elevation that DP1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: 4'x4')			
1. *Vicia villosa*	50		UPL
2. *Avena fatua*	40		UPL
3. *Plantago lanceolatum*	25		FAC
4. *Epilobium brachycarpum*	1		FAC
5.			
6.			
7.			
8.			
	116 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		
% Bare Ground in Herb Stratum 5	% Cover of Biotic Crust 0		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **3** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**26**	x3 =	**78**
FACU species	**0**	x4 =	**0**
UPL species	**90**	x5 =	**450**
Column Totals:	**116** (A)		**528** (B)

Prevalence Index = B/A = **4.6**

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[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** **x**

Remarks:

SOIL

Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/3	98	10YR4/6	2	C	M, PL	clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 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 (minimum of one required; check all that apply)

- ___ 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)
- x Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** **x** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 7705 Hickory Avenue City/County: Sacramento Sampling Date: 10/20/20
Applicant/Owner: Aleksey Zhirkov State: CA Sampling Point: 1
Investigator(s): Matt Hirkala Section, Township, Range: Section 20, Township 10 North, Range 7 East, MDB&M
Landform (hillslope, terrace, etc.): topographic draw Local relief (concave, convex, none): concave Slope (%): 3
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.70737 Long: -121.239438 Datum: NAD83
Soil Map Unit Name: 148 - Fiddyment-Orangevale-Urban land complex, 2-8% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 **x**	**Is the Sampled Area within a Wetland?**	**Yes** _____ **No** _____
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No _____		

Remarks: This data point was taken at the lowest point in this topographic draw.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 4'x4')			
1. *Cynodon dactylon*	90	x	FACU
2. *Rumex crispus*	5		FAC
3. *Lolium perenne*	1		FAC
4. *Epilobium brachycarpum*	1		FAC
5.			
6.			
7.			
8.			
	97	=Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	=Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**7**	x3 =	**21**
FACU species	**90**	x4 =	**360**
UPL species	**0**	x5 =	**0**
Column Totals:	**97** (A)		**381** (B)

Prevalence Index = B/A = **3.9**

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Morphological Adaptationd[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** **x**

Remarks:

SOIL

Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	10YR3/3	100	10YR4/6				silty loam	
>4-12	10YR4/4	98%	10YR4/6	2	C	M	silty loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 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 (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** **x**

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

Remarks:

Attachment B

Aquatic Resources Delineation – 7705 Hickory Avenue

AQUATIC RESOURCE FEATURES		
OTHER WATERS		
Seasonal Pond		
Feature ID	**Acreage**	
SP1	0.219	
Total Other Waters:	**0.219**	
Aquatic Resources Total:	**0.219 acre**	

Notes:
Map Scale: 1 inch = 30 feet
Coordinate System: NAD 1983 State Plane California II
Datum: NAD83
Projection: Lambert Conformal Conic
Vertical Data: NAVD88
Aerial Base: Maxar
Aerial Base Flown: 10 November 2019
Topographic Contours: Sacramento County
Date Map Prepared: 23 October 2020
Map Prepared by: N. Bente
Delineation Performed by: M. Hirkala
Definitions:
NAD = North American Datum
NAVD = North American Vertical Datum

Prepared For:

Aleksey Zhirkov
7705 Hickory Avenue
Orangevale, California 95662

N
Feet
0 12.5 25 50

- Study Area Boundary (5 acres)
- Reference Point
- Data Points
- Culvert
- Ground Surface Elevation Contour (2 foot interval)

Aquatic Resources (0.219 acre)
Other Waters (0.219 acre)
- Seasonal Pond (0.219 acre)

Aquatic Resources Delineation
7705 Hickory Avenue
Sacramento County, California

MADRONE ECOLOGICAL CONSULTING
8421 Auburn Boulevard, Suite 248
Citrus Heights, California 95610
(916) 822.3220 | www.madroneeco.com

Attachment C

Plant Species Observed within the Study Area

Plant Species Observed within the 7705 Hickory Avenue Study Area 20 October 2020

Species Name	Common Name	Wetland Indicator Status
Abutilon theophrasti	Velvet-leaf	UPL
Acmispon americanus	American deerweed	UPL
Asclepias fascicularis	Narrow-leaf milkweed	FAC
Avena barbata	Narrow wild oats	UPL
Avena fatua	Wild oat	UPL
Bidens laevis	Smooth beggars-tick	OBL
Brassica nigra	Black mustard	UPL
Bromus diandrus	Ripgut grass	UPL
Bromus hordeaceus	Soft chess	FACU
Carduus pycnocephalus subsp. *pycnocephalus*	Italian thistle	UPL
Centaurea solstitialis	Yellow star-thistle	UPL
Chondrilla juncea	Skeleton weed	UPL
Cichorium intybus	Chicory	FACU
Cirsium vulgare	Bull thistle	FACU
Convolvulus arvensis	Bindweed	UPL
Croton setigerus	Doveweed	UPL
Cynodon dactylon	Bermuda grass	FACU
Cyperus eragrostis	Tall nutsedge	FACW
Crypsis schoenoides	Swamp prickle-grass	FACW
Digitaria sanguinalis	Hairy crabgrass	UPS
Echinochloa crus-galli	Large barnyard grass	FACW
Eleocharis acicularis	Needle spike-rush	OBL
Eleocharis palustris	Common spike-rush	OBL
Epilobium brachycarpum	Panicled willow-herb	FAC
Erigeron canadensis	Horseweed	FACU
Erodium cicutarium	Red-stem filaree	UPL
Erodium botrys	Stork's bill	UPL
Euphorbia maculata	Spotted sandmat	UPL
Ficus carica	Common fig	FACU
Fraxinus latifolia	Oregon ash	FACW
Galium aparine	Goose grass	FACU
Geranium dissectum	Cut leaf geranium	UPL
Helminthotheca echioides	Bristly ox-tongue	FAC
Holocarpha virgata	Narrow tarplant	UPL
Hordeum marinum	Seaside barley	FAC
Hordeum murinum	Wall barley	FAC

Species Name	Common Name	Wetland Indicator Status
Juncus bufonius	Toad rush	FACW
Lactuca serriola	Prickly lettuce	FACU
Leptochloa fusca subsp. *fascicularis*	Bearded sprangletop	FACW
Lolium perenne	Perennial rye	FAC
Marrubium vulgare	White Horehound	FACU
Morus alba	Fruitless mulberry	FACU
Paspalum dilatatum	Dallis grass	FAC
Persicaria maculosa	Lady's thumb	FACW
Phalaris aquatica	Harding grass	FACU
Plantago lanceolata	English plantain	FAC
Polygonum aviculare subsp. *depressum*	Prostrate knotweed	FAC
Polypogon monspeliensis	Annual rabbitfoot grass	FACW
Quercus lobata	Valley oak	FACU
Quercus douglasii	Blue oak	UPL
Quercus wislizeni	Live oak	UPL
Rubus armeniacus	Himalayan blackberry	FAC
Rumex conglomeratus	Sharp dock	FACW
Rumex crispus	Curly dock	FAC
Salix exigua var. *exigua*	Sandbar willow	FACW
Salix gooddingii	Goodding's black willow	FACW
Stellaria media	Common chickweed	FACU
Tribulus terrestris	Puncture vine	UPL
Trifolium repens	White clover	FACU
Vicia sativa subsp. *sativa*	Spring vetch	FACU
Vicia villosa subsp. *villosa*	Winter vetch	UPL

Attachment D

GIS Shapefiles and the Aquatic Resources Excel Spreadsheet (Electronic Files)