Mattley Meadow
Aquatic Resource Delineation

Prepared By:
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Prepared For:
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February 24, 2020

Mattley Meadow near the east gully, July 7, 2016.

Contents

Introduction

The purpose of this report is to identify and describe aquatic resources within the Mattley Meadow Restoration Project area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process;
2. Document aquatic resource boundary determinations for review by regulatory authorities; and
3. Provide background information.

The area surveyed for this report was the 51.89-acre Area of Potential Effect (APE) for the Mattley Meadow Restoration Project. The project area is in a montane meadow system at an elevation of 7,200 feet, in the upper Mattley Creek watershed, which is in the headwaters of the Middle Fork Mokelumne River. The project area includes the upper treatment area, Mattley Creek Meadow, and lower treatment area, Mattley Meadow (Attachment 1). Both meadows are in a xeric trend to due channel incisions that prevent streamflows from accessing the floodplain.

Contact information

Property Owner: Stanislaus National Forest, Calaveras Ranger District
Interdisciplinary Team Leader: Zachary Croyle
5519 Highway 4, PO Box 500
Hathaway Pines, CA 95233
209-813-6034

Stan Dell'Orto, private landowner
209-768-6381

Applicant: Plumas Corporation
Project Contact: Leslie Mink
PO Box 3880
Quincy, CA 95971

530-283-3739

Location

The Mattley Meadow Restoration Project is located in Calaveras County, California, within the Stanislaus National Forest, Township 7 North, Range 17 East, Sections 8 and 17 (Attachment 1). The project area is located approximately 40 miles east of Jackson, three miles southeast of the east end of Salt Springs Reservoir and four miles west of Bear Valley.

The meadows can be accessed via existing 4 wheel-drive only roads. At this time, there is a washout on State Highway 26, which is normally used to reach the project area from Jackson, CA. Alternate driving directions are provided for the purposes of this jurisdictional determination. From Angels Camp, CA, take State Highway 4 east toward Arnold, CA. Continue east past Arnold for approximately 18 miles. Turn left (north) on USFS road FS7N09 (Cabbage Patch Log Road). Proceed approximately 1.4 miles, then turn right on USFS road FS7N12. After approximately 0.9 miles, turn left at the "Y". Continue north for approximately 1.6 miles, and turn right at the "Y". Proceed 0.5 miles, and turn right at the "Y" (FS7N62Y). Proceed another 0.3 miles and turn right at the "Y". After 0.2 miles, veer left onto FS7N37Y. Proceed 1.2 miles, then make a hard right onto USFS road FS7N16. Proceed 0.8 miles, then make a slight right onto FS7N16c. This road will take you south for approximately 0.75 miles to the southwest end of the meadow.

The bulk of the meadow is located on publicly accessible lands administered by the USDA-Forest Service, and an access letter is not required for the US Army Corps of Engineers to collect samples to verify the jurisdictional determination on those lands. The western half of the Mattley Meadow portion of the project area is under private ownership. A letter of permission to access these private lands is provided in Attachment 2.

Methods

This wetland delineation was conducted in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (Environmental Laboratory 2008). Prior to the field survey, a soils report was generated from the US Department of Agriculture Natural Resource Conservation Service's online Web Soil Survey (USDA-NRCS 2016). The wetland delineation field survey was conducted on July 7, 2016 by Leslie Mink of Plumas Corporation.

Cross-section survey data, collected by Jim Wilcox of Plumas Corporation, were reviewed to quantify channel widths and depths. Channel widths are from bank to bank (as measured by field measurements of the ordinary high water mark), and are shown on the map as linear features. Sample points were recorded with a Trimble Geo7x GPS unit. Photos were taken with a Samsung Galaxy IV smartphone (Attachment 5).

Existing Conditions

Landscape Setting

The Mattley Meadow Restoration Project area consists of two distinct meadow areas, Mattley Meadow and Mattley Creek Meadow, within the Mattley Meadows complex in the headwaters of Mattley Creek. Mattley Creek is tributary to the North Fork Mokelumne River. The mainstem Mokelumne River is a

Traditionally Navigable Water from its mouth to Frandy Gage, 3.5 miles upstream of New Hope Road in Galt, CA (ACOE 2017). Mattley Meadow occupies the confluence area of multiple small drainages and hillslope flows supporting high and middle gradient riparian hydrogeomorphic meadow types as well as discharge slope meadows (Weixelman et al. 2011). Two unnamed tributaries to Mattley Creek flow through Mattley Meadow, referred to as "east gully" and "west gully" (the west gully is not included in the project area). A constructed channel exists at the center of the meadow, which is no longer functional but has contributed to the xeric trend in the meadow. Mattley Creek Meadow is principally a discharge slope hydrogeomorphic meadow type occupying a very small drainage area (see Vicinity Map, Attachment 1, for the relative location of Mattley Creek Meadow and Mattley Meadow).

At some point in the past, the channels flowing through Mattley Meadow began to incise, likely in response to disturbance (road construction, past intensive livestock use, and/or channel modification). The channels are now deeply incised and high flows are no longer able to overflow onto the floodplain. The groundwater elevation has lowered in response to the channel incision and snow melt runoff quickly flows out of the meadow instead of flooding it and recharging the local groundwater system. Dry season stream flows have diminished as a result of reduced groundwater recharge. The altered meadow hydrology has led to a drying of the meadow, significant conifer encroachment, and degradation of meadow wildlife habitat. A large aspen stand in the meadow has been weakened and is experiencing widespread mortality.

The field survey was carried out in July 2016. At the time of the survey, precipitation during water year 2016 was above average for the northern Sierra Nevada, although the northern portion of Calaveras County was still considered to be in a state of severe drought (US Drought Monitor 2016). Sample points were collected at dispersed locations throughout the entire survey area and used in the delineation of aquatic resources.

Soil Survey Results

The USDA Web Soil Survey custom soil report for the survey area is provided in Attachment 7. The soils in the Mattley Meadow portion of the survey area are described as Entic Cryumbrepts, deep, on 1 to 10 percent slopes. These loamy sand soils are derived from igneous rock alluvium, and are well drained, with a depth of more than 80 inches to a restrictive layer. They occur in alluvial fan features. In the Mattley Creek Meadow portion of the survey area, the soils are Gerle family, bouldery-Rock outcrop complex, 5 to 35 percent slopes. Gerle family soils are found in moraine landforms and are derived from granitic glacial till. These soils are stony to bouldery sandy loams and are well drained.

Aquatic Resources

The 51.89-acre Area of Potential Effects (APE) is comprised of 3,191 linear feet (0.32 acres) of intermittent riverine channel and 0.78 acres of wet meadow riparian floodplain (palustrine). Table 1 provides a summary of the aquatic resources identified within the survey area. The remainder of the project area is 50.79 acres of upland habitats. All aquatic resources are shown on the wetland delineation maps provided in Attachment 3, and are described in the sections that follow. The plant species observed in the field survey are provided in Attachment 4; Field Forms are provided in Attachment 6.

Intermittent Channel (Riverine, Intermittent, Streambed)

Three sections of intermittent channel were identified in the survey area (MC1, MC2, and MC3). The channels are tributary to Mattley Creek. The channels are deeply incised and support sparse hydrophytic vegetation only in the channel bottom. The flows in these intermittent stream channels occur during the late-spring and early summer snowmelt period. Acreage of these channels is based on the ordinary high water mark as follows: MC1=14'; MC2=2'; MC3=1'.

Wetland Floodplain

Two vegetated wetland areas were identified in the survey area. MWF1 (Riparian) is a small area of floodplain located at the downstream end of intermittent channel MC1. MWF2 (Persistent, Emergent, Palustrine) is a discharge slope meadow (Weixelman et. al 2011) located in the western portion of the survey area that is hydrologically independent of the abandoned constructed channel MC3.

Table 1. Aquatic Resources within the Survey Area

Aquatic Resources Name	Map Label	Cowardin Type	Location (Latitude, Longitude)	Acres	Linear Feet (Stream Channels)
Mattley Channel 1	MC1	R4SB3[1]	38.46952, -120.12458	0.22	700
Mattley Channel 2	MC2	R4SB3	38.46289, -120.12419	0.08	1,652
Mattley Channel 3	MC3	R4SB5[2]	38.46283, -120.12616	0.02	839
Mattley Wetland Floodplain 1	MWF1	PEM1[3]	38.46979, -120.12508	0.02	
Mattley Wetland Floodplain 2	MWF2	PEM1	38.46262, -120.12713	0.77	
			Subtotal Riverine	*0.32*	*3,191*
			Subtotal Palustrine	*0.78*	
			Total Aquatic Resources	**1.10**	**3,191**

[1]Riverine, Intermittent, Streambed, Cobble-Gravel

[2]Riverine, Intermittent, Streambed, Mud

[3]Persistent, Emergent, Palustrine

The conclusions of this wetland delineation are considered draft until verified by the US Army Corps of Engineers, Sacramento District.

Proposed Project Impacts

This wetland delineation was conducted in preparation for a meadow and channel restoration project. An impact map and table of impacts is provided in Attachment 8.

References

[ACOE] US Army Corps of Engineers. 2017. Navigable Waterways in the Sacramento District. Web application available at *http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/* Accessed March 15, 2017.

Environmental Laboratory. 1987. US Army Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1 (online edition). US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. January 1987.

Environmental Laboratory. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). US Army Engineer Research and Development Center, Vicksburg, MS. September 2008.

National Drought Mitigation Center. 2016. US Drought Monitor, California Status for July 19, 2016.

USDA-NRCS. 2016. Custom Soil Resource Report for Stanislaus National Forest, California, Parts, Mattley Meadow Preliminary Wetland Delineation. Web Soil Survey Application, generated July 5, 2016.

Weixleman, DA, B Hill, DJ Cooper, EL Berlow, JH Viers, SE Purdy, AG Merrill, and SE Gross. 2011. A Field Key to Meadow Hydrogeomorphic Types for the Sierra Nevada and Southern Cascade Ranges in California. Gen Tech. Report R5-TP-034. Vallejo, CA. USDA-Forest Service, Pacific Southwest Region, 34 pp.

Wilcox, J. 2015. Mattley Meadow Restoration Design Report. Prepared for the Calaveras Ranger District, Stanislaus National Forest, February 27, 2015.

Attachments List (Maps, Forms, Photos)

Attachment 1: Vicinity Map and Delineation Map Key

Attachment 2: Private Property Access Letter

Attachment 3: Wetland Delineation Maps

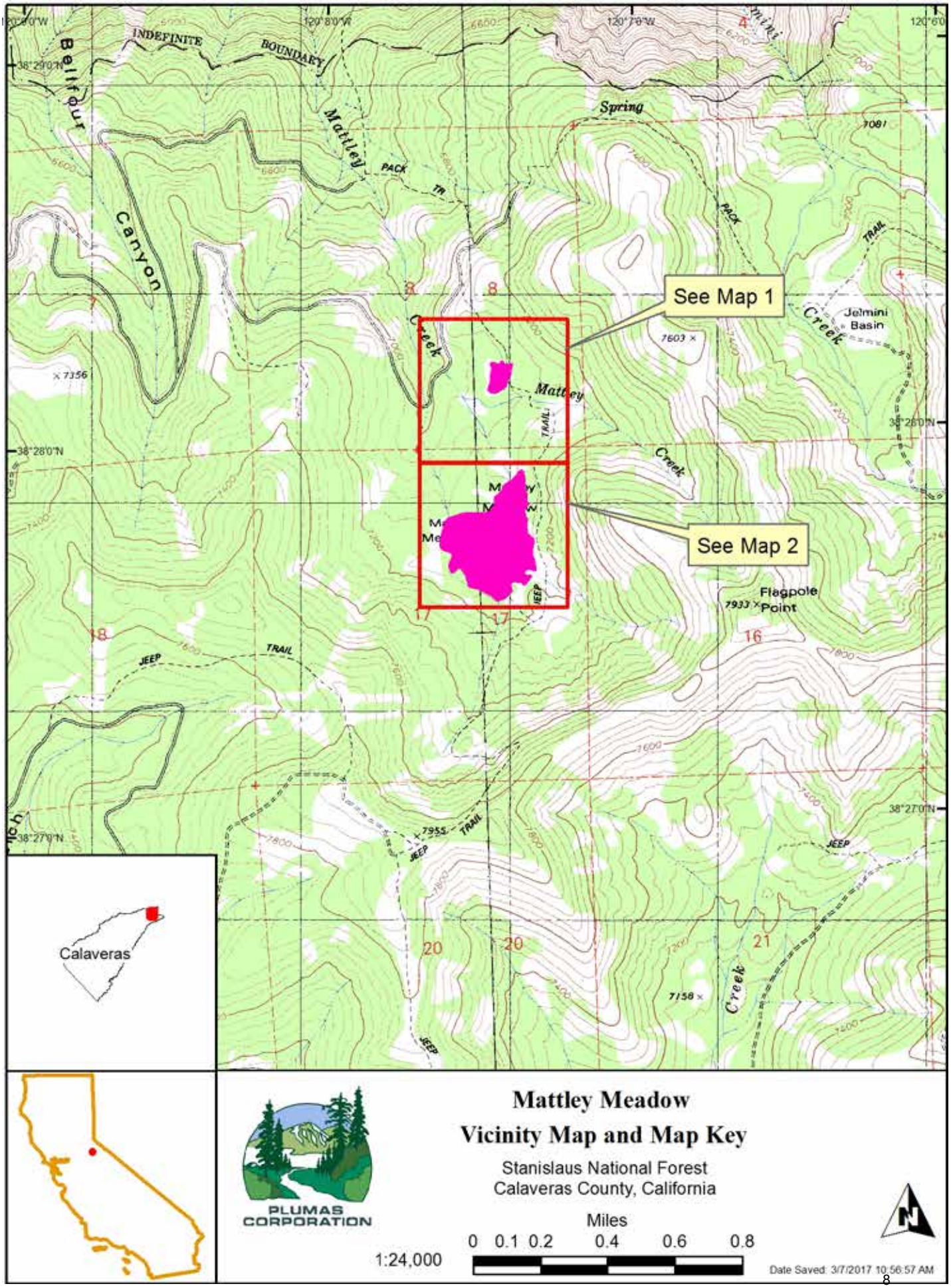
Attachment 4: List of Plant Species and Wetland Indicator Status

Attachment 5: Sample Point Photos

Attachment 6: Sample Field Forms

Attachment 7: Custom Soil Resource Report for the Mattley Meadow Restoration Project

Attachment 8: Impact Map with Table of Impacts


See Map 1
See Map 2
Calaveras
Mattley Meadow
Vicinity Map and Map Key
Stanislaus National Forest
Calaveras County, California
PLUMAS CORPORATION
Miles
0 0.1 0.2 0.4 0.6 0.8
1:24,000
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Attachment 2

Stan Dell'Orto
6512 Hwy 26
Mokelumne Hill, CA 95245

Jesse Stoval
US Army Corps of Engineers
California South Branch
Sacramento District HQ Office
1325 J Street, Room 1350
Sacramento, California 95814

March 16, 2017

Re: Mattley Meadow Restoration Project

Dear Mr. Stoval:

This letter serves as authorization for the US Army Corps of Engineers (ACOE) to enter my 160 acres of private land located within the Stanislaus National Forest at Mattley Meadow, for the purpose of collecting samples to verify the jurisdictional determination for the Mattley Meadow Restoration Project.

Authorization is given subject to the following conditions:

- The ACOE will indemnify and hold Stan Dell'Orto harmless from any actions, demands, costs, claims, liability, attorney's fees, and expenses for injury to or death of any and all persons and destruction of or damage to any and all property caused by or arising out of your use of the premises and/or use by your agents, employees, or independent contractors.
- Stan Dell'Orto is to receive a copy of any reports and/or data generated as a result of this project.
- No smoking or open fires of any kind will be allowed.
- Any litter resulting from your use of the premises will be removed upon completion of use.
- You will notify Stan Dell'Orto at 209-768-6381 at least **48-hours** prior to conducting any work on my property.

This authorization will terminate December 31, 2017, and can only be renewed by written consent of both parties. Please sign both originals of this letter as your acceptance of these conditions and return one copy to me. Should you have any questions please feel free to contact me at the phone number listed above.

Sincerely,

Stan DellOrto

STAN DELL'ORTO

Acceptance & Approval

US ARMY CORPS OF ENGINEERS

By: _____
Signature

_____
Printed name of authorized signatory

_____
Date

STAN DELL'ORTO

Stan Dell'Orto
Signature

3/16/2017
Date

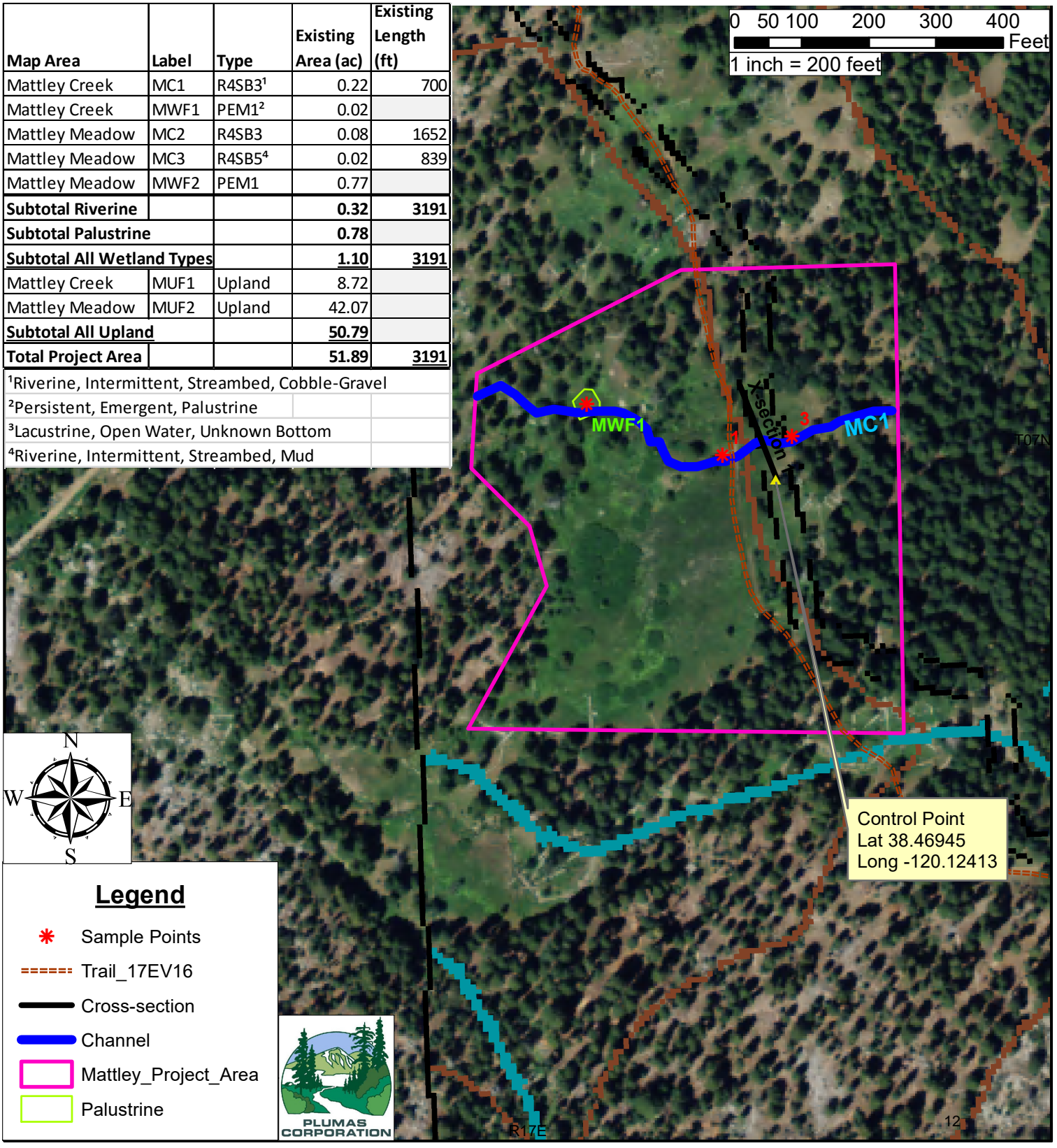
Attachment 3 – Wetland Delineation Maps

Mattley Meadow Restoration Project Aquatic Resource Delineation
51.89 acres in Calaveras County, CA on Stanislaus National Forest and private land
Calaveras Dome and Tamarack USGS Quads. Mattley Creek Map Area (1 of 2)

Delineation by Leslie Mink of Plumas Corporation. Field Survey conducted July 7, 2016; map prepared February 20, 2020. Area of Potential Effects is two separate Treatment Areas: northern treatment area is Mattley Creek; southern treatment area is Mattley Meadow; collectively referred to as the Mattley Meadow Restoration Project. Only one of the three channels through the project area MC2 corresponds with a USGS map blue line. Direction of streamflow is to the north and northwest. Project area is mesic meadow in a xeric trend due to incised channels.
Base imagery source: USDA-FSA Aerial Photography Field Office. 2012. National Agricultural Imagery Program. Published August 28, 2012, overlain over USGS quad maps.

Map Area	Label	Type	Existing Area (ac)	Existing Length (ft)
Mattley Creek	MC1	R4SB3[1]	0.22	700
Mattley Creek	MWF1	PEM1[2]	0.02	
Mattley Meadow	MC2	R4SB3	0.08	1652
Mattley Meadow	MC3	R4SB5[4]	0.02	839
Mattley Meadow	MWF2	PEM1	0.77	
Subtotal Riverine			**0.32**	**3191**
Subtotal Palustrine			**0.78**	
Subtotal All Wetland Types			**1.10**	**3191**
Mattley Creek	MUF1	Upland	8.72	
Mattley Meadow	MUF2	Upland	42.07	
Subtotal All Upland			**50.79**	
Total Project Area			**51.89**	**3191**

[1]Riverine, Intermittent, Streambed, Cobble-Gravel
[2]Persistent, Emergent, Palustrine
[3]Lacustrine, Open Water, Unknown Bottom
[4]Riverine, Intermittent, Streambed, Mud



Mattley Meadow Restoration Project Aquatic Resource Delineation
51.89 acres in Calaveras County, CA on Stanislaus National Forest and private land
Calaveras Dome and Tamarack USGS Quads Mattley Meadow Map Area (2 of 2)

Delineation by Leslie Mink of Plumas Corporation. Field Survey conducted July 7, 2016; map prepared February 20, 2020. Area of Potential Effects is two separate Treatment Areas: northern treatment area is Mattley Creek; southern treatment area is Mattley Meadow; collectively referred to as the Mattley Meadow Restoration Project. Only one of the three channels through the project area MC2 corresponds with a USGS map blue line. Direction of streamflow is to the north and northwest. Project area is mesic meadow in a xeric trend due to incised channels.
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Subtotal Riverine			**0.32**	**3191**
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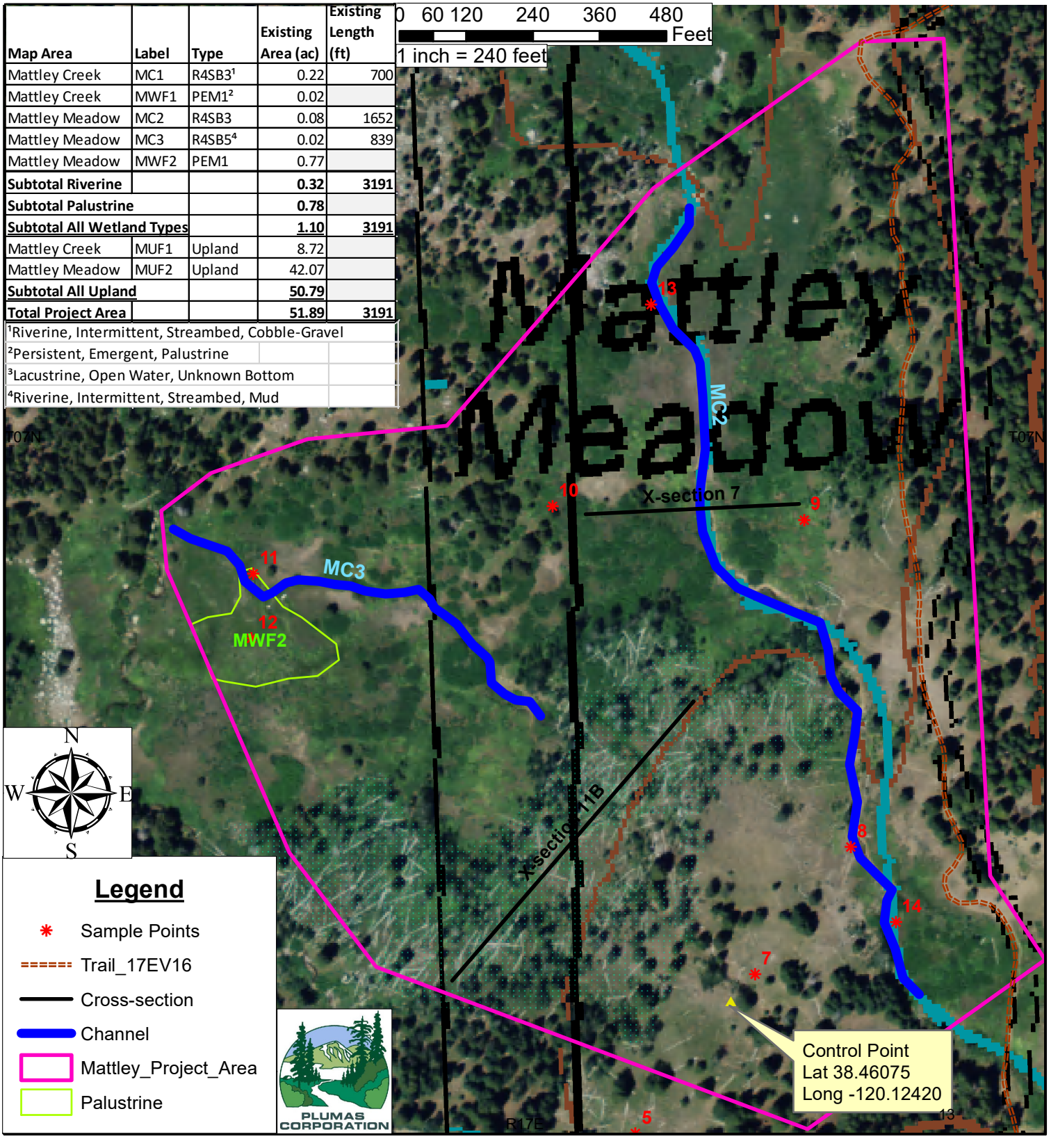


Scientific Name	Common Name	Arid West Wetland Indicator Status (Lichvar et al. 2016)[1]
Achnatherum sp.	Rice grass	---
Aconogonon phytolaccifolium	Alpine fleeceflower	FAC
Alopecurus sp.	Meadow foxtail	---
Boechera stricta	Canadian rockcress	FACU
Bromus diandrus	Ripgut brome	NL
Bromus inermis	Smooth brome	FACU
Carex nebrascensis	Nebraska sedge	OBL
Collinsia sparsiflora	Few flowered collinsia	NL
Darmera peltata	Indian rhubarb	OBL
Delphinium polycladon	Mountain-marsh larkspur	FACW
Eleocharis acicularis	Needle spike-rush	OBL
Eleocharis decumbens	Decumbent spikerush	FACW[2]
Eleocharis quinqueflora	Few-flower spike-rush	OBL
Gilia latiflora	Broad-flowered gilia	NL
Hackelia velutina	Velvet stickseed	NL
Heterocodon rariflorum	Western Pearlflower	FACW
Hydrophyllum occidentale	Squaw-Lettuce	FACW
Hypericum anagalloides	Tinker's-Penny	OBL
Lupinus polyphyllus	Blue-Pod Lupine	FAC
Mertensia oblongifolia	Oblongleaf bluebells	FAC
Mimulus guttatus	Seep monkey-flower	OBL
Perideridia parishii	Parish's yampah	FAC
Polygonum minimum	Zigzag Knotweed	FACU
Rorippa curvipes	Blunt-Leaf Yellowcress	FACW
Sidalcea asprella	Dwarf checkerbloom	FACW[3]
Solidago canadensis	Canada goldenrod	NL
Solidago elongata	Cascade Canada Goldenrod	FACU
Stellaria longipes	Long-Stalk Starwort	FACW
Taraxacum oficinale	Common Dandelion	FACU
Trifolium longipes	Long-Stalk Clover	FACW
Veratrum californicum	California False Hellebore	FACW

KEY: UPL = Upland; FACU = Facultative Upland; FAC = Facultative; FACW = Facultative Wetland; OBL = Obligate wetland; --- = insufficient taxonomic information to assign indicator status; NL = Not Listed (Upland for wetland delineation purposes)

[1]Lichvar, RW, DL Banks, WN Kirchner, and NC Melvin. 2016. US Army Corps of Engineers State of California 2016 Wetland Plant List. May 12, 2016. Available at: *http://wetland-plants.usace.army.mil* Accessed March 15, 2017.

[2]Alternative scientific name = *Eleocharis montevidensis* var *decumbens;* FACW indicator status for this species.

[3]Alternative scientific name = *Sidalcea malviflora*; FACW indicator status for this species.

Sample Point 1

Sample Point 2

Sample Point 3

Sample Point 4

Sample Point 5

Sample Point 6

Sample Point 7

Sample Point 8

Sample Point 9

Sample Point 10

Sample Point 11

Sample Point 12

Sample Point 13

Sample Point 14

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 1 2pm 7:04
Investigator(s): Leslie Mink Section, Township, Range: T7N R17E S. 8
Landform (hillslope, terrace, etc.): Channel / adj. f.p. Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): MLRA22A Lat: 38.46955 Long: -120.12439 Datum: NAD 83
Soil Map Unit Name: 114 Gerle Family, Bouldery-rock outcrop complex 5-35% slope NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Mimulus guttatus	20	Y	OBL
2. Veratrum californica	10		FACW
3. Juncus patens/bufonius	5		FAC
4. Eleocharis dehiscens	5		
5. Solidago elongata			FACU
6. Sidalcea malviflora			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column Totals:	35 (A)		55 (B)

Prevalence Index = B/A = 1.6

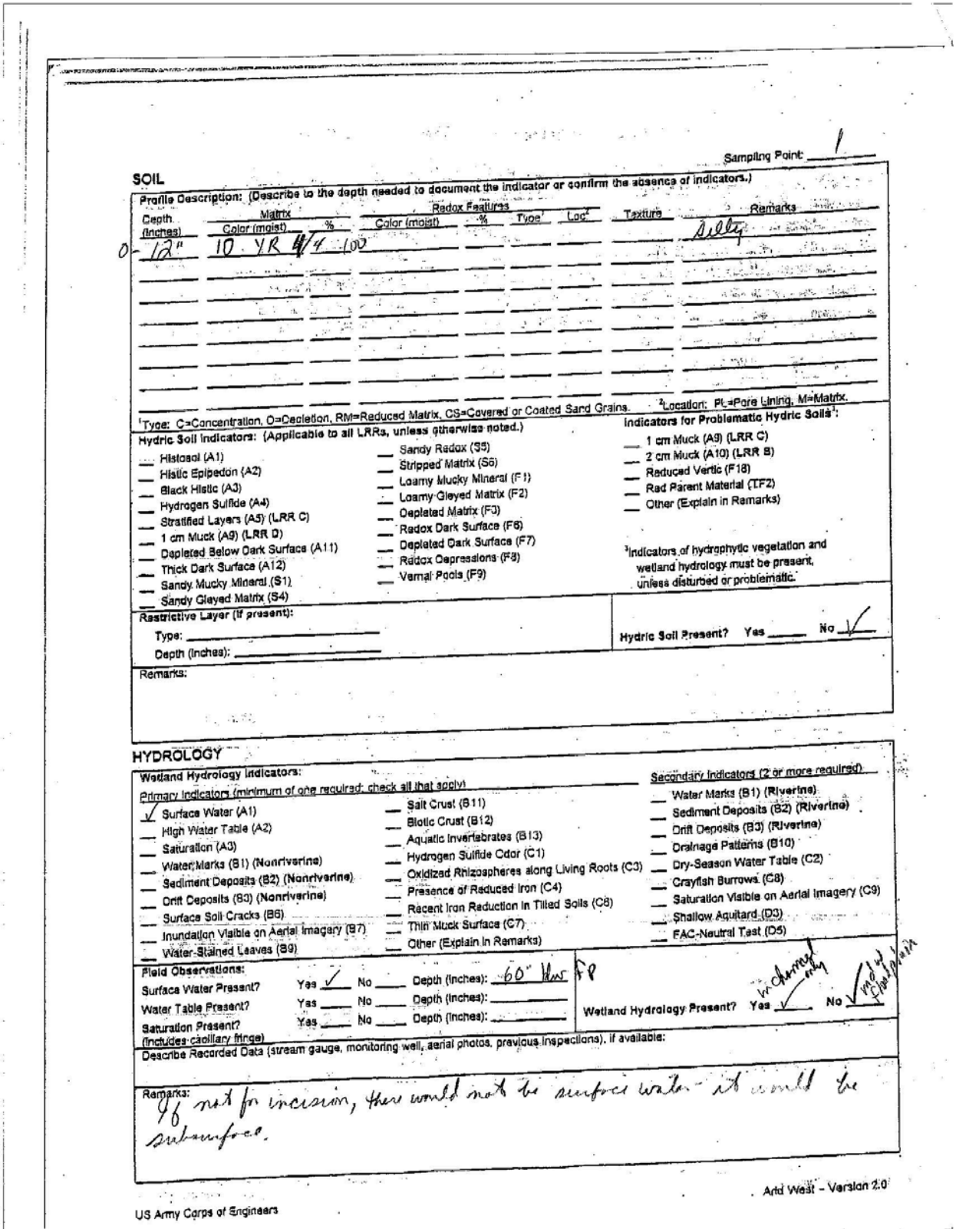
Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0



Sampling Point: 1

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10 YR 4/4	100					silty	

[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 ✓

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 ___ Depth (inches): 60" Max FP

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: If not for incision, there would not be surface water - it would be subsurface.

Arid West – Version 2.0

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 2
Investigator(s): Leslie Mink Section, Township, Range: T7N R17E S. 8
Landform (hillslope, terrace, etc.): riparian floodplain Local relief (concave, convex, none): convex Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46979 Long: -120.12509 Datum: NAD 83
Soil Map Unit Name: 114 Gerle Family, Bouldery-rock outcrop complex 5-35% slope NWI classification: PUSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 3m²)			
1. Lupinus polyphyllus	15		FAC
2. Solidago canadensis	30		FACU
3. Veratrum californica	30		FACW
4. Delphinium polycladon	5		FACW
5. Mimulus guttatus	10		OBL
6. Taraxacum officinale	5		FACU
7. Rhubarb	5		
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	35	x 2 =	70
FAC species	15	x 3 =	45
FACU species	35	x 4 =	140
UPL species	____	x 5 =	____
Column Totals:	95 (A)		265 (B)

Prevalence Index = B/A = 2.8

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

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

Sampling Point: 2 2 pres 9:31

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6"	10YR 2/1	100					mucky	

[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 ___

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 ___ Depth (inches): 20"

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

pre end of day

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016

Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 3

Investigator(s): Leslie Mink Section, Township, Range: T 7N R 17E S 8

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

Subregion (LRR): MLRA22A Lat: 38.46963 Long: -120.12403 Datum: NAD 83

Soil Map Unit Name: 114 NWI classification: UPL

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus sp.	5		
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Veratrum californica	25	Y	FACW
2. Lupinus polyphyllus	5		FAC
3. Delphinium polycladon	5		FACW
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species 30	x 2 = 60	
FAC species 5	x 3 = 15	
FACU species ____	x 4 = ____	
UPL species ____	x 5 = ____	
Column Totals: 35 (A)	75 (B)	

Prevalence Index = B/A = 2.1

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 ____

Remarks:

Sampling Point: 3

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36	10YR 4/4							silt
36-50	10YR 3/2							

[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 ✓

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 ✓ Depth (inches): 60" in the channel, not in FP

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:

US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 4 ~10:38 2pass
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): channel inset Local relief (concave, convex, none): convex Slope (%):
Subregion (LRR): MLRA22A Lat: 38.45960 Long: -120.12414 Datum: NAD 83
Soil Map Unit Name: 107 Eatic Cryumbrepts, deep, 1-10.% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Mimulus guttatus	3		OBL
2. Montensia oblongifolia	4		FAC
3. Bluebells			
4.			
5. Solidago canadensis?	3		FACU
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 2	x 1 =	2
FACW species 3	x 2 =	6
FAC species 4	x 3 =	12
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: 9 (A)		20 (B)

Prevalence Index = B/A = 2.2

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 ____

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

Sampling Point: 4

SOIL

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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 ✓

Remarks: Cobble - gravel on minerally clay

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)
- X Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- X 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:

US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 5
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): concave Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46013 Long: -120.12483 Datum: NAD83
Soil Map Unit Name: 107 Eatic Cryumbrepts, deep, 1-10% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: drought + downcut channels + an inactive incised channel that dries the meadow out

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 3m²)			
1. Veratrum californica	50	Y	FACW
2. Sidalcea asprella	10		FACW?
3. Carex nebrascensis	15		OBL
4. Achnatherum	10		
5. Rorippa curvipes	5		
6. Collinsia sparsiflora	5		FACW
7. Hydrophyllum occidentale	5		FACW
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	70	x 2 =	140
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	80 (A)		150 (B)

Prevalence Index = B/A = 1.9

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 ____

Remarks:

Sampling Point: 5 2pm 11:00

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8"	4/3	100					Sandy 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 ✓

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 X No ____ Depth (inches): >60"

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:

US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 6
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): terraced fe meadow Local relief (concave, convex, none): Concave Slope (%):
Subregion (LRR): MLRA22A Lat: 38.45988 Long: -120.12520 Datum: NAD83
Soil Map Unit Name: 107 Eatic Cryumbrepts, deep, 1-10% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Eleocharis acicularis	5		OBL
2. Carex nebrascensis	5		OBL
3. Lupinus polyphyllus	10		FAC
4. Sidalcea	5		
5. Achnatherum	15		
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust ____

Remarks:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species		x 2 =	
FAC species	10	x 3 =	30
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	20 (A)		40 (B)

Prevalence Index = B/A = 2

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 ____

Sampling Point: 6 11:21 2 pics

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR6/1						silt	

[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 ✓

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 ✓ Depth (inches): >60"

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:

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US Army Corps of Engineers

Arid West – Version 2.0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 7
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S. 17
Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46090 Long: -120.12404 Datum: NAD83
Soil Map Unit Name: 107 Eatic Cryumbrepts, deep, 1-10% slopes NWI classification: ( ) PL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Hackelia velutina	5		FACU?
2. Sidalcea	5		FAC W?
3. Achnatherum	15		
4. Carex nebrascensis	10		OBL
5. Collinsia grandiflora	20/0		
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust: ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	10	x 4 =	40
UPL species		x 5 =	
Column Totals:	20 (A)		50 (B)

Prevalence Index = B/A = 2.5

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 ____

Remarks:
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US Army Corps of Engineers — Arid West – Version 2.0

Sampling Point: 7

SOIL

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6-8"	7.5 YR 6/3	100					silty gravel	

[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 ✓

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 ✓ Depth (Inches): >60"

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 8
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): fp Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): MLRA22A Lat: 38.46152 Long: -120.12342 Datum: NAD83
Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1-10% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

11:473 pics hole chk'd 11:45 P

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m²)			
1. Mertensia dongistylia	15		FAC?
2. Sidalcea	5		
3. Hydrophyllum occidentale	5		FACW
4. Bromus diandrus	5		
5. Helenium variifolium	5		FACW
6. Stellaria longipes	5		FACW
7. Veratrum californica	10		FACW
8. Hackelia velutina	10		FAC?
Aconogonon phytolaccifolium	20		FAC
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 25	x 2 =	50
FAC species 45	x 3 =	135
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 70 (A)		185 (B)

Prevalence Index = B/A = 2.64

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

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

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Sampling Point: 8

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5 YR 6/3						silty gravel	

[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 ✓

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 ___ Depth (inches): ~84"

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: Channel is wet ~0.2 cfs channel is WOTUS fp is dried out due to incision

Arid West – Version 2.0

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 9 12345
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): MRA22A Lat: 38.46313 Long: -120.12364 Datum: NAD83
Soil Map Unit Name: 107 Eatic Cryumbrepts, deep, 1-10% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Aspen	30		
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 3m²)			
1. Veratrum californicum	35		FACW
2. Gilia capitata	25		
3. Delphinium polycladon	5		
4. Polygonum minimum	5		FACU
5. Mentha arvensis	10		FAC?
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	35	x 2 =	70
FAC species	10	x 3 =	30
FACU species	5	x 4 =	20
UPL species	_____	x 5 =	_____
Column Totals:	50 (A)		120 (B)

Prevalence Index = B/A = 2.4

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

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

Sampling Point: 9

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	7.5YR 6/3	100					silt	

[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 ✓ Depth (inches): >80"

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:

12:47 pic of nearby channel

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016

Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 16 12:54 +5 my

Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17

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

Subregion (LRR): MLRA22A Lat: 38.46324 Long: -120.12522 Datum: NAD83

Soil Map Unit Name: 107 Eatis Cryumbrepts, deep, 1-10% slopes NWI classification: UPL

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Salix lemmonii ?	25		
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Pendicularis pinetii	5		FAC
2. Veratrum calif.	25		FACW
3. Gilia tenuiflora	40		FAC?
4. Sidalcea	5		
5. Eleocharis acicularis	15		OBL
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 15	x 1 =	15
FACW species 25	x 2 =	50
FAC species 45	x 3 =	135
FACU species ____	x 4 =	
UPL species ____	x 5 =	
Column Totals: 85 (A)		200 (B)

Prevalence Index = B/A = 2.4

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 ____

Remarks:

Sampling Point: 10

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	7.5 YR 3/2							

[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 ✓

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 ___ Depth (inches): >78"

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:

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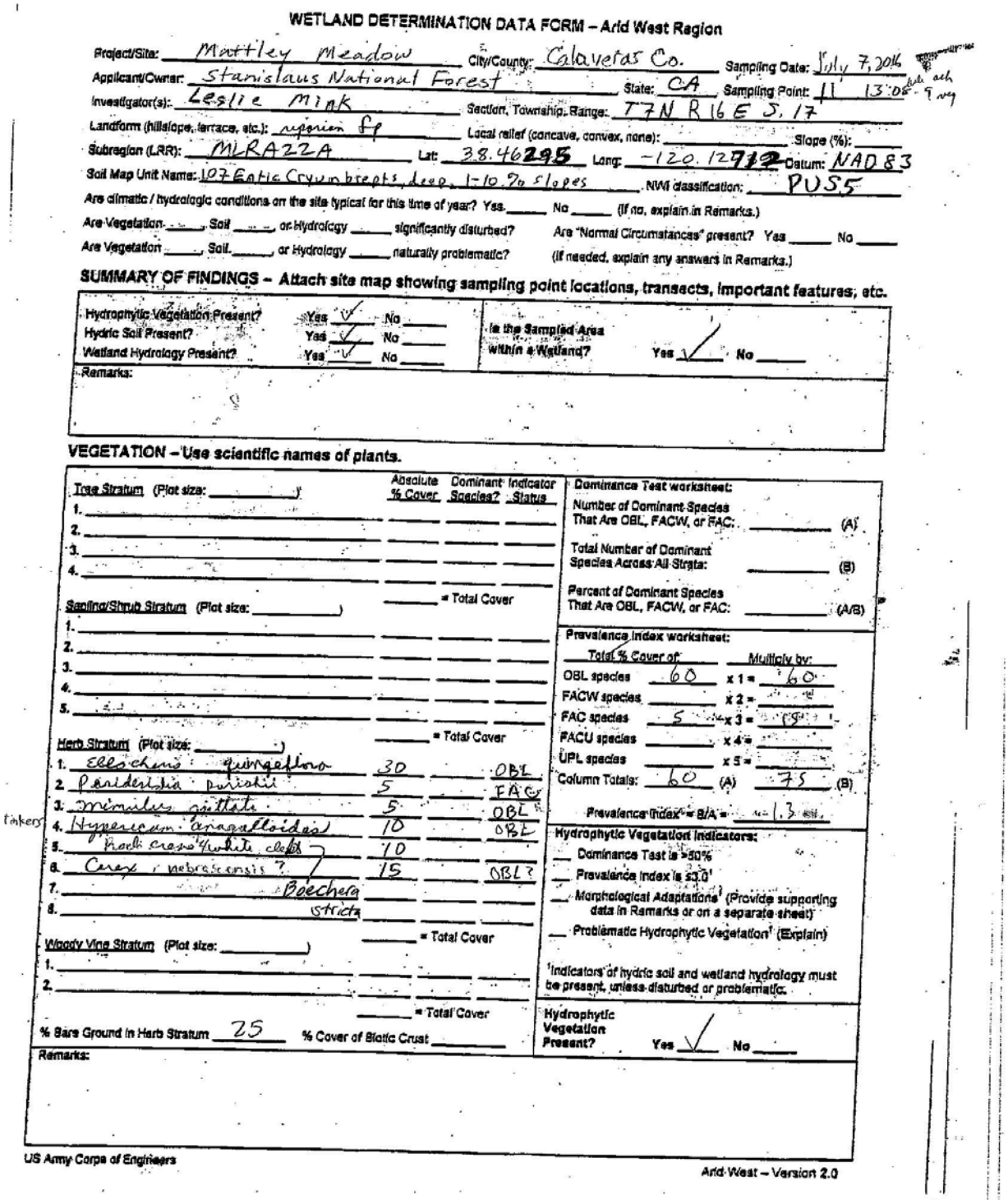

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 11 13:05 (late arch 9 veg)
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S. 17
Landform (hillslope, terrace, etc.): riparian fq Local relief (concave, convex, none): Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46295 Long: -120.12712 Datum: NAD83
Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1-10 % slopes NWI classification: PUSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____
Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Eleocharis quinqueflora	30		OBL
2. Packerella poriotii	5		FACW
3. Mimulus guttatus	5		OBL
4. Hypericum anagalloides	10		OBL
5. Rock cress/white clover	10		
6. Carex ? nebrascensis ?	15		OBL?
7. Boechera stricta			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	60 (A)		75 (B)

Prevalence Index = B/A = 1.3

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 ____

Remarks:

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Sampling Point: 11

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/2	40						
0-8	" 7/1	10						
	" 4/2	50						

[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 ___

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 ___ Depth (inches): 12"

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:

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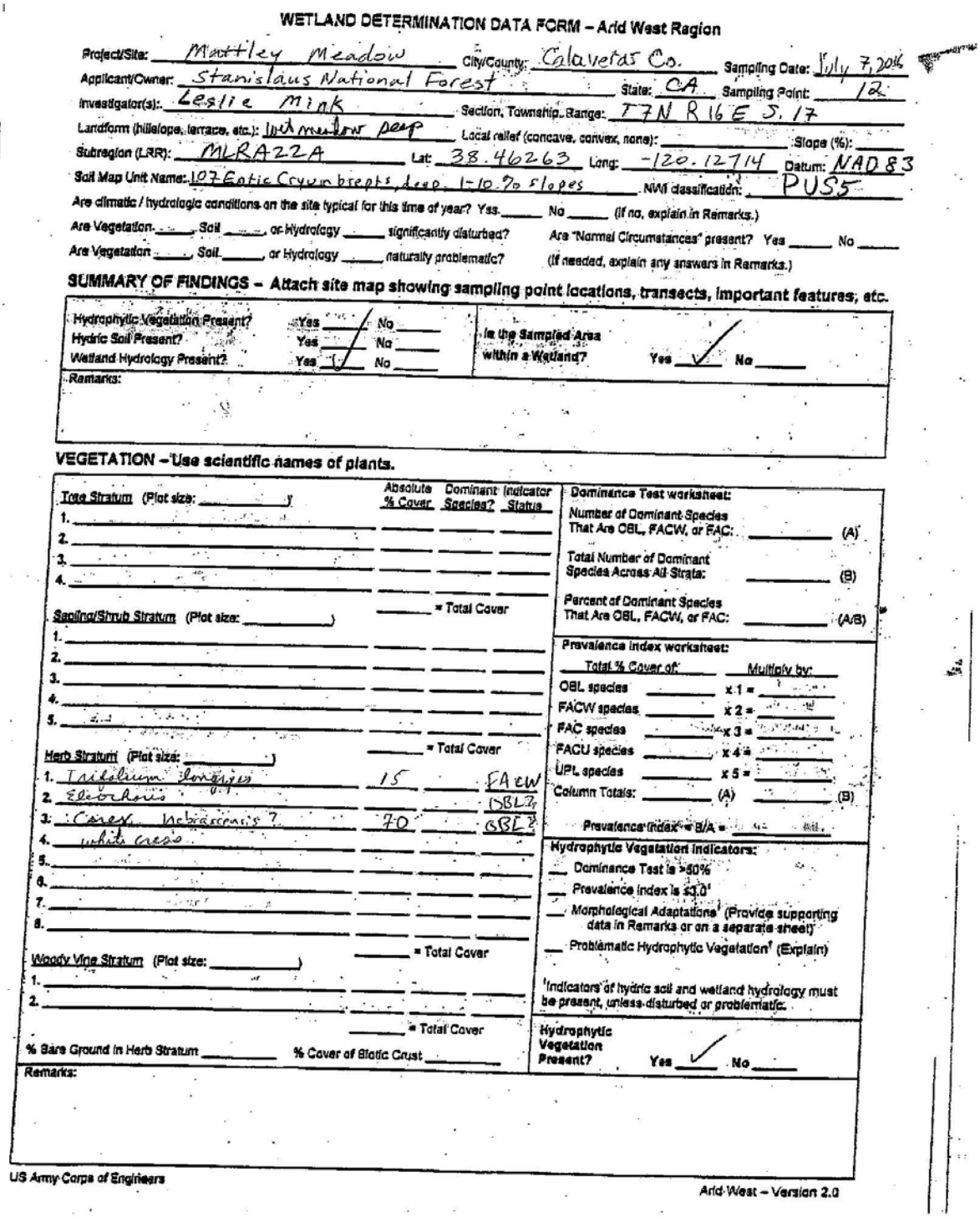

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 12
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S. 17
Landform (hillslope, terrace, etc.): wet meadow perp Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): MLRA22A Lat: 38.46263 Long: -120.12714 Datum: NAD83
Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1-10% slopes NWI classification: PUSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ✓ No _____
Hydric Soil Present? Yes ✓ No _____
Wetland Hydrology Present? Yes ✓ No _____
Is the Sampled Area within a Wetland? Yes ✓ No _____
Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Triteleia laxa	15		FACW
2. Eleocharis sp.			OBL?
3. Carex nebrascensis ?	70		OBL?
4. white cress			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 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 _____

Remarks:

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12

Sampling Point: 2pc 13:33

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100						
2-6	5YR 3/2		matrix					

[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 ___

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 ___ 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: feels like a fen

US Army Corps of Engineers

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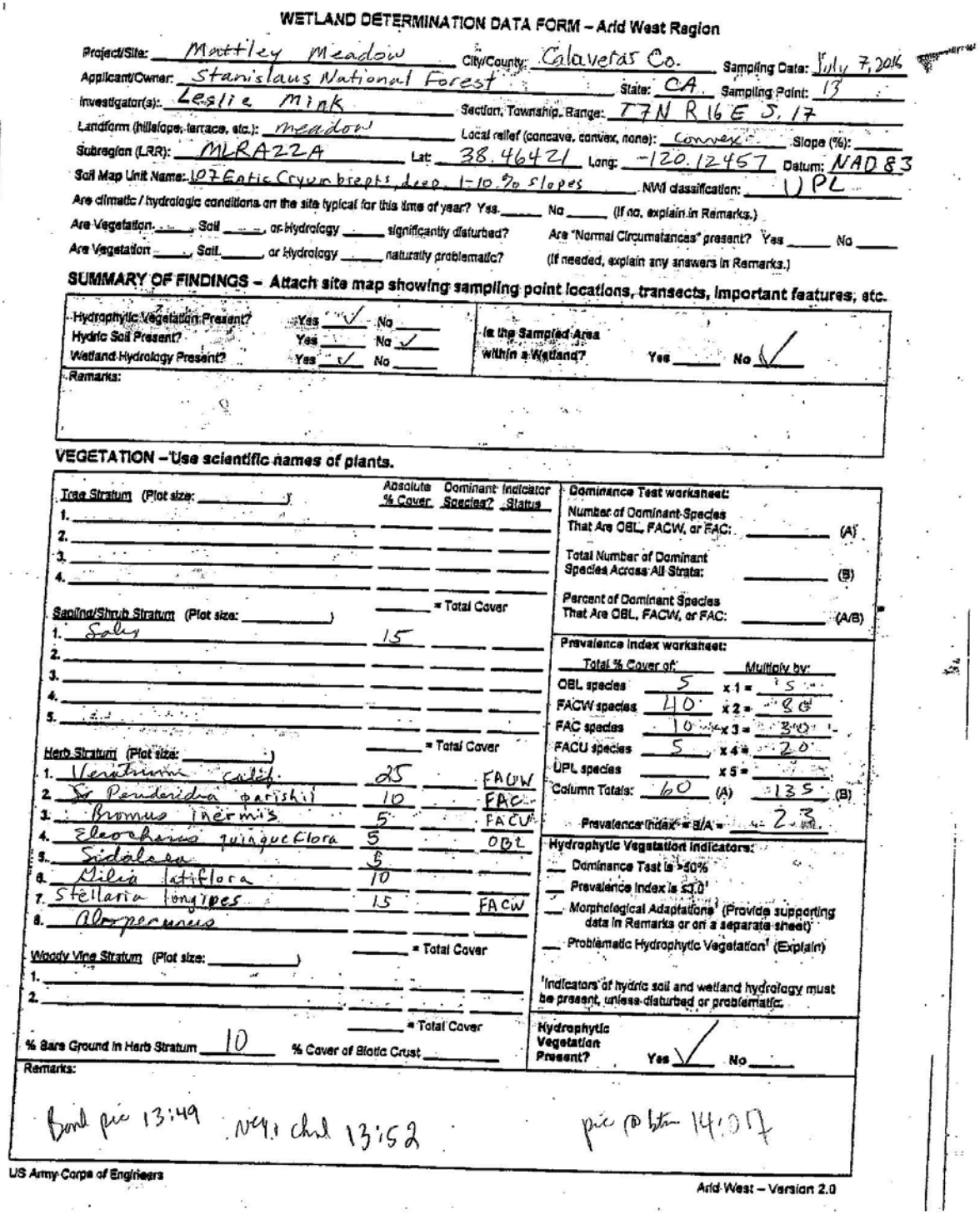

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 13
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S. 17
Landform (hillslope, terrace, etc.): meadow Local relief (concave, convex, none): Convex Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46421 Long: -120.12457 Datum: NAD83
Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1-10% slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Salix	15		
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Veratrum californicum	25		FACW
2. Sp Pendiculata parishii	10		FAC
3. Bromus inermis	5		FACU
4. Eleocharis quinqueflora	5		OBL
5. Sidalcea	5		
6. Gilia	10		
7. Stellaria longipes	15		FACW
8. Alopecurus			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 5	x 1 =	5
FACW species 40	x 2 =	80
FAC species 10	x 3 =	30
FACU species 5	x 4 =	20
UPL species ____	x 5 =	____
Column Totals: 60 (A)		135 (B)

Prevalence Index = B/A = 2.3

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

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Bond pic 13:49 Neg. chk 13:52 pic @ btm 14:07

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Sampling Point: 13

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-36"	7YR 5/3	50	7.5YR 6/3	50				
36-46	7.5YR 2.5/1							

[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 ✓

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 ___ Depth (inches): 5 6 11

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mattley Meadow City/County: Calaveras Co. Sampling Date: July 7, 2016 14:27
Applicant/Owner: Stanislaus National Forest State: CA Sampling Point: 14 top meadow
Investigator(s): Leslie Mink Section, Township, Range: T7N R16E S.17
Landform (hillslope, terrace, etc.): meadow/fp Local relief (concave, convex, none): concave Slope (%):
Subregion (LRR): MLRA22A Lat: 38.46113 Long: -120.12315 Datum: NAD83
Soil Map Unit Name: 107 Entic Cryumbrepts, deep, 1:10, 2o slopes NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Salix	15		
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Cress	25		
2. Perideridia Parishii	5		FAC-
3. Hackelia sp.	15		FACU?
4. Lupinus polyphyllus	20		FAC
5. Sidalcea	5		
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust ____

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	____	x 2 =	____
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species	____	x 5 =	____
Column Totals:	40 (A)		135 (B)

Prevalence Index = B/A = 3.4

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 ✓

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

Sampling Point: 14

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5 YR 4/2						silt	

[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 ✓

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 ___ Depth (inches): 96" flr SP

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:

United States Department of Agriculture

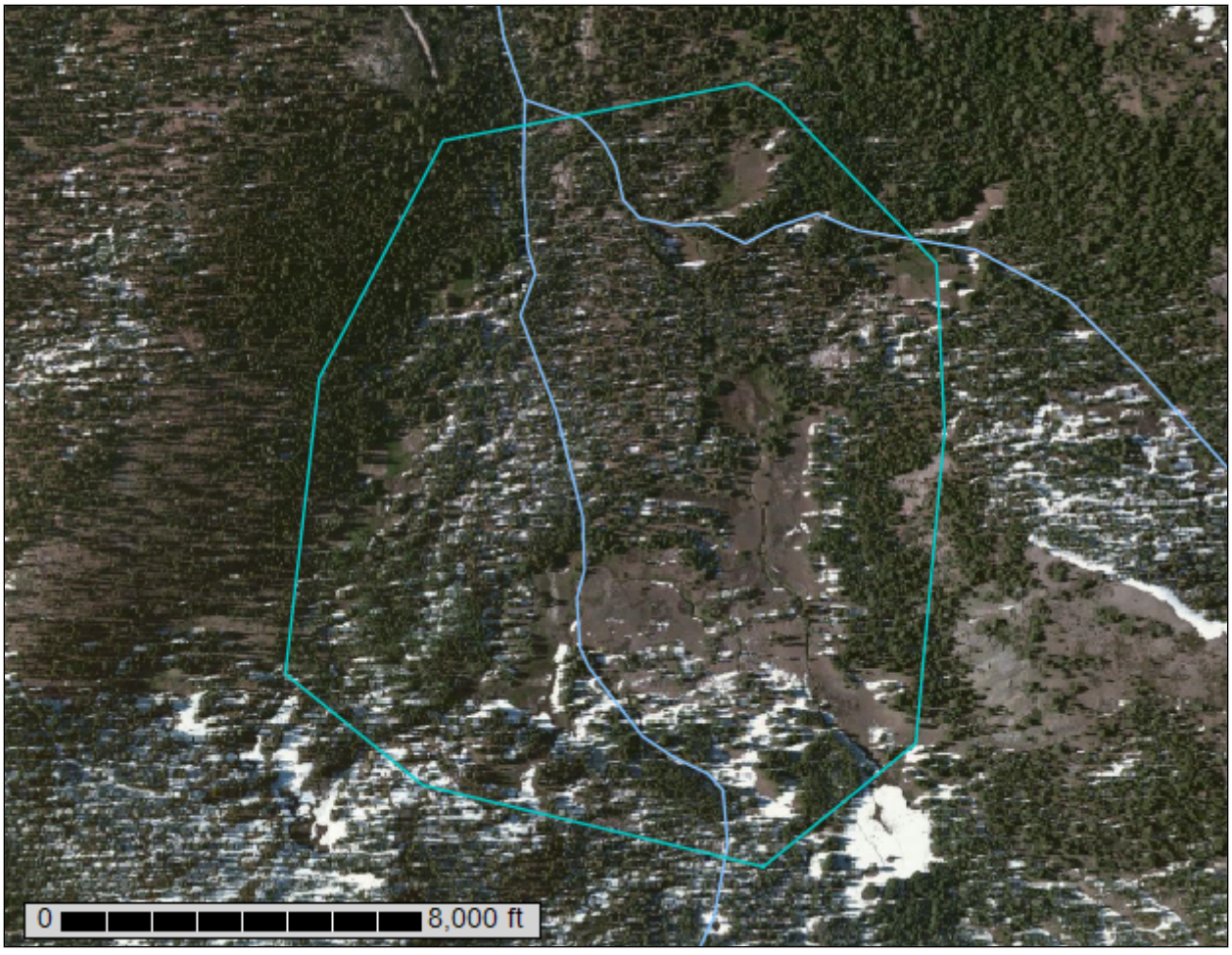
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Stanislaus National Forest, California, Parts

Mattley Meadow Preliminary Wetland Delineation



Stanislaus National Forest, California, Parts

107—Entic Cryumbrepts, deep, 1 to 10 percent slopes

Map Unit Setting

National map unit symbol: hlvg
Elevation: 6,000 to 9,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 30 to 60 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Entic Cryumbrepts, Deep

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Flat
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile

H1 - 0 to 8 inches: loamy sand
H2 - 8 to 60 inches: loamy sand

Properties and qualities

Slope: 1 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

Minor Components

Unnamed, light colored surface

Percent of map unit: 10 percent

Unnamed

Percent of map unit: 5 percent

114—Gerle family, bouldery-Rock outcrop complex, 5 to 35 pe rcent slopes

Map Unit Setting

National map unit symbol: hlvp
Elevation: 6,000 to 8,000 feet
Mean annual precipitation: 45 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Gerle family, bouldery, and similar soils: 50 percent
Rock outcrop: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gerle Family, Bouldery

Setting

Landform: Moraines
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Till derived from granite

Typical profile

H1 - 0 to 10 inches: bouldery sandy loam
H2 - 10 to 50 inches: stony sandy loam
H3 - 50 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Percent of area covered with surface fragments: 0.1 percent
Depth to restrictive feature: 50 to 54 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Rock Outcrop

Setting

Landform: Mountains, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Granite

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 0 to 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Gerle family, moderately deep

Percent of map unit: 10 percent

Gerle family, deep

Percent of map unit: 10 percent

Wintoner family

Percent of map unit: 5 percent

115—Gerle family, bouldery-Rock outcrop complex, 35 to 50 p ercent slopes

Map Unit Setting

National map unit symbol: hlvq
Elevation: 6,000 to 8,000 feet
Mean annual precipitation: 45 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Gerle family, bouldery, and similar soils: 50 percent
Rock outcrop: 30 percent
Minor components: 20 percent

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

Description of Gerle Family, Bouldery

Setting

Landform: Moraines
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Till derived from granite

Typical profile

H1 - 0 to 10 inches: bouldery sandy loam
H2 - 10 to 50 inches: stony sandy loam
H3 - 50 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Percent of area covered with surface fragments: 0.1 percent
Depth to restrictive feature: 50 to 54 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Rock Outcrop

Setting

Landform: Mountains, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Granite

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 0 to 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Minor Components

Lithic xerumbrepts
Percent of map unit: 5 percent

Gerle family, deep
Percent of map unit: 5 percent

Gerle family, moderately deep
Percent of map unit: 5 percent

Wintoner family
Percent of map unit: 5 percent

166—Lithic Cryumbrepts-Rock outcrop-Windy family, moderatel y deep complex, 5 to 35 percent slopes

Map Unit Setting
National map unit symbol: hlxb
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition
Lithic cryumbrepts and similar soils: 40 percent
Rock outcrop: 30 percent
Windy family, moderately deep, and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lithic Cryumbrepts

Setting
Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile
H1 - 0 to 5 inches: loam
H2 - 5 to 15 inches: unweathered bedrock

Properties and qualities
Slope: 5 to 35 percent
Depth to restrictive feature: 5 to 9 inches to lithic bedrock
Natural drainage class: Excessively drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting
Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Tuff breccia

Typical profile
H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities
Slope: 5 to 35 percent
Depth to restrictive feature: 0 to 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Windy Family, Moderately Deep

Setting
Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile
H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities
Slope: 5 to 35 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Minor Components

Unnamed

Percent of map unit: 5 percent

Lithic xerumbrepts

Percent of map unit: 5 percent

167—Lithic Cryumbrepts-Rock outcrop-Windy family, moderatel y deep complex, 35 to 70 percent slopes

Map Unit Setting

National map unit symbol: hlxc
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 36 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Lithic cryumbrepts and similar soils: 40 percent
Rock outcrop: 25 percent
Windy family, moderately deep, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lithic Cryumbrepts

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 15 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 5 to 9 inches to lithic bedrock
Natural drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Tuff breccia

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 0 to 0 inches to lithic bedrock
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam

H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 70 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Minor Components

Windy family, deep

Percent of map unit: 10 percent

Lithic xerumbrepts

Percent of map unit: 5 percent

193—Windy family, deep-Moderately deep complex, 5 to 35 per cent slopes

Map Unit Setting

National map unit symbol: hly5
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Windy family, deep, and similar soils: 50 percent
Windy family, moderately deep, and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam
H2 - 7 to 52 inches: very gravelly sandy loam
H3 - 52 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 52 to 56 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Minor Components

Rock outcrop
Percent of map unit: 10 percent

Lithic xerumbrepts
Percent of map unit: 10 percent

Holland family, deep, dark surface
Percent of map unit: 5 percent

194—Windy family, deep-Moderately deep complex, 35 to 50 pe rcent slopes

Map Unit Setting
National map unit symbol: hly6
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition
Windy family, deep, and similar soils: 45 percent
Windy family, moderately deep, and similar soils: 25 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Deep

Setting
Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile
H1 - 0 to 7 inches: gravelly sandy loam
H2 - 7 to 52 inches: very gravelly sandy loam
H3 - 52 to 60 inches: weathered bedrock

Properties and qualities
Slope: 35 to 50 percent
Depth to restrictive feature: 52 to 56 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Minor Components

Unnamed, clay loam subsoil

Percent of map unit: 10 percent

Holland family, deep, dark surface

Percent of map unit: 10 percent

Unnamed, light colored surface

Percent of map unit: 10 percent

196—Windy family, moderately deep-Deep complex, 35 to 60 pe rcent slopes

Map Unit Setting

National map unit symbol: hly8
Elevation: 4,190 to 8,000 feet
Mean annual precipitation: 50 to 65 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 75 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Windy family, moderately deep, and similar soils: 50 percent
Windy family, deep, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windy Family, Moderately Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 5 inches: gravelly coarse sandy loam
H2 - 5 to 30 inches: very gravelly sandy loam
H3 - 30 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 30 to 34 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Description of Windy Family, Deep

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from tuff breccia

Typical profile

H1 - 0 to 7 inches: gravelly sandy loam
H2 - 7 to 52 inches: very gravelly sandy loam
H3 - 52 to 60 inches: weathered bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 52 to 56 inches to paralithic bedrock
Natural drainage class: Well drained
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Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

Minor Components

Lithic xerumbrepts

Percent of map unit: 10 percent

Rock outcrop

Percent of map unit: 10 percent

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Mattley Meadow Restoration Project
Impacts to Aquatic Resources
Calaveras County, CA
51.89 acres Attachment 8
Calaveras Dome and Tamarack USGS Quads

Please refer to delineation maps for more detail of aquatic resources. Direction of streamflow is to the north and northwest. Without intervention, xeric-trending meadow is likely to continue conversion to coniferous forest. Intervention entails filling gullied channels and returning system to sheetflow drainage.

Base imagery source: USDA-FSA Aerial Photography Field Office. 2012. National Agricultural Imagery Program. Published August 28, 2012. Map prepared by Leslie Mink, February 20, 2020

Map Area	Label	Type	Existing Area (ac)	Proposed Area (ac)	Existing Length (ft)	Proposed Length (ft)	Impact (ac)	Impact (ft)	Impact Type (cubic yards)
Mattley Creek	MC1	R4SB3[1]	0.22	0.20	700	633	0.11	345	fill: 358 soil, 5 rock (6")
Mattley Creek	MWF1	PEM1[2]	0.02	1.56			0	0	0
Mattley Creek	MP1	L1OW[3]	0.00	0.01					
Mattley Meadow	MC2	R4SB3	0.08	0.06	1652	1293	0.53	1504	fill: 4,418 soil
Mattley Meadow	MC3	R4SB5[4]	0.02	0	839	0	0.15	839	fill: 11,215 soil
Mattley Meadow	MWF2	PEM1	0.77	29.3			0	0	0
Mattley Meadow	MP2-9	L1OW	0.00	1.6					
Subtotal Riverine			**0.32**	**0.26**	**3191**	**1926**	**0.79**	**2688**	**fill: 15,996**
Subtotal Palustrine			**0.78**	**30.86**			**0**		
Subtotal Open water			**0.00**	**1.61**			**0**		
Subtotal All Wetland Types			**1.10**	**32.73**	**3191**	**1926**	**0.79**	**2688**	**fill: 15,996**
Mattley Creek	MUF1	Upland	8.72	7.19			0.2		cut: 358 soil
Mattley Meadow	MUF2	Upland	42.07	11.97			3.2		cut: 15,633 soil
Subtotal All Upland			**50.79**	**19.16**			**3.4**		**cut: 15,991**
Total Project Area			**51.89**	**51.89**	**3191**	**1926**	**4.19**	**2688**	

[1]Riverine, Intermittent, Streambed, Cobble-Gravel
[2]Persistent, Emergent, Palustrine
[3]Lacustrine, Open Water, Unknown Bottom
[4]Riverine, Intermittent, Streambed, Mud

0 120 240 480 720 960 Feet

1 inch = 240 feet

N W E S

MWF1 MP1 MC1 X-section 1

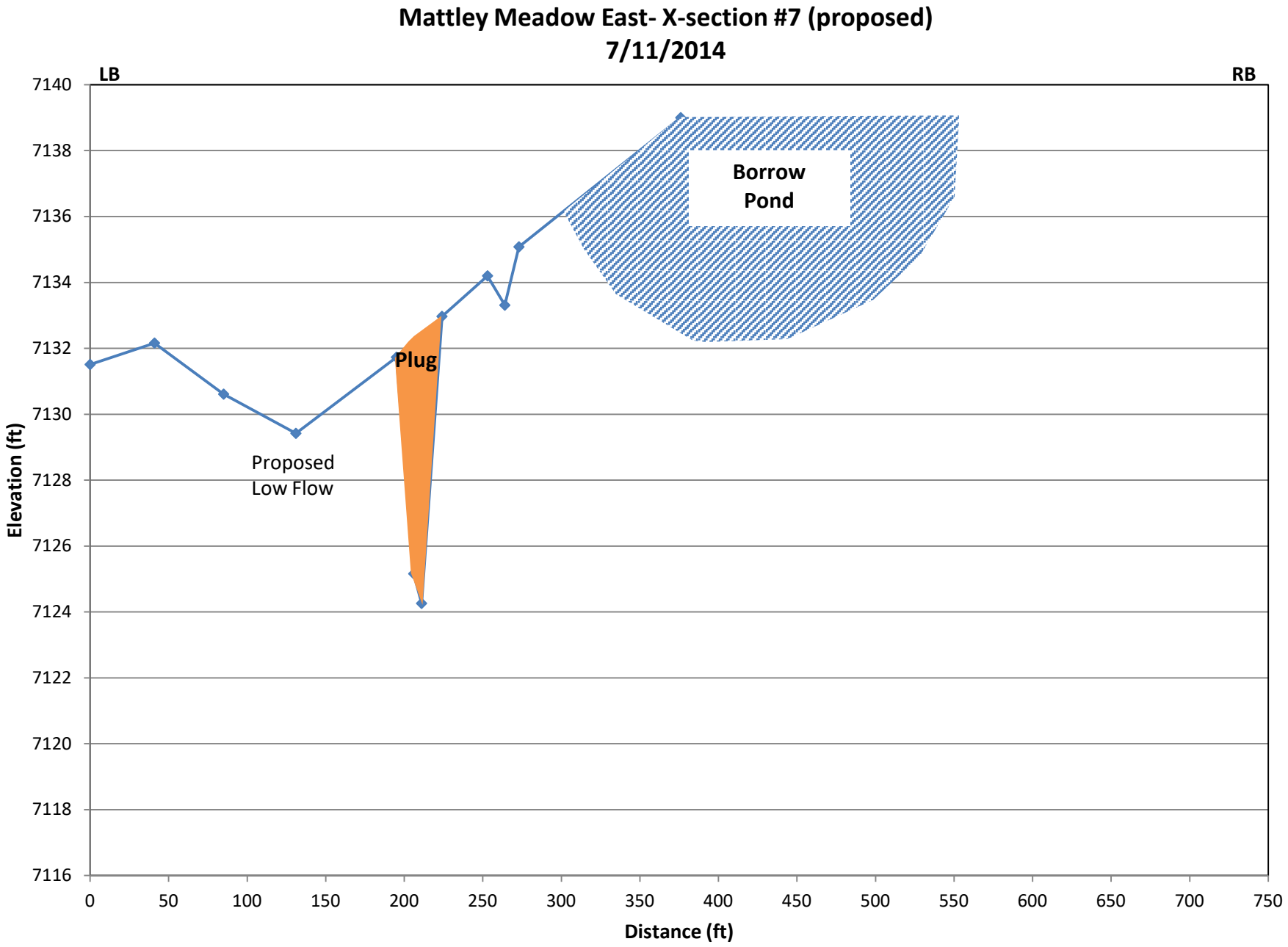
MP6 MP7 MC3 MWF2 MP5 MP4 X-section 11B MP2 X-section 7 MP4 MC2 MP3

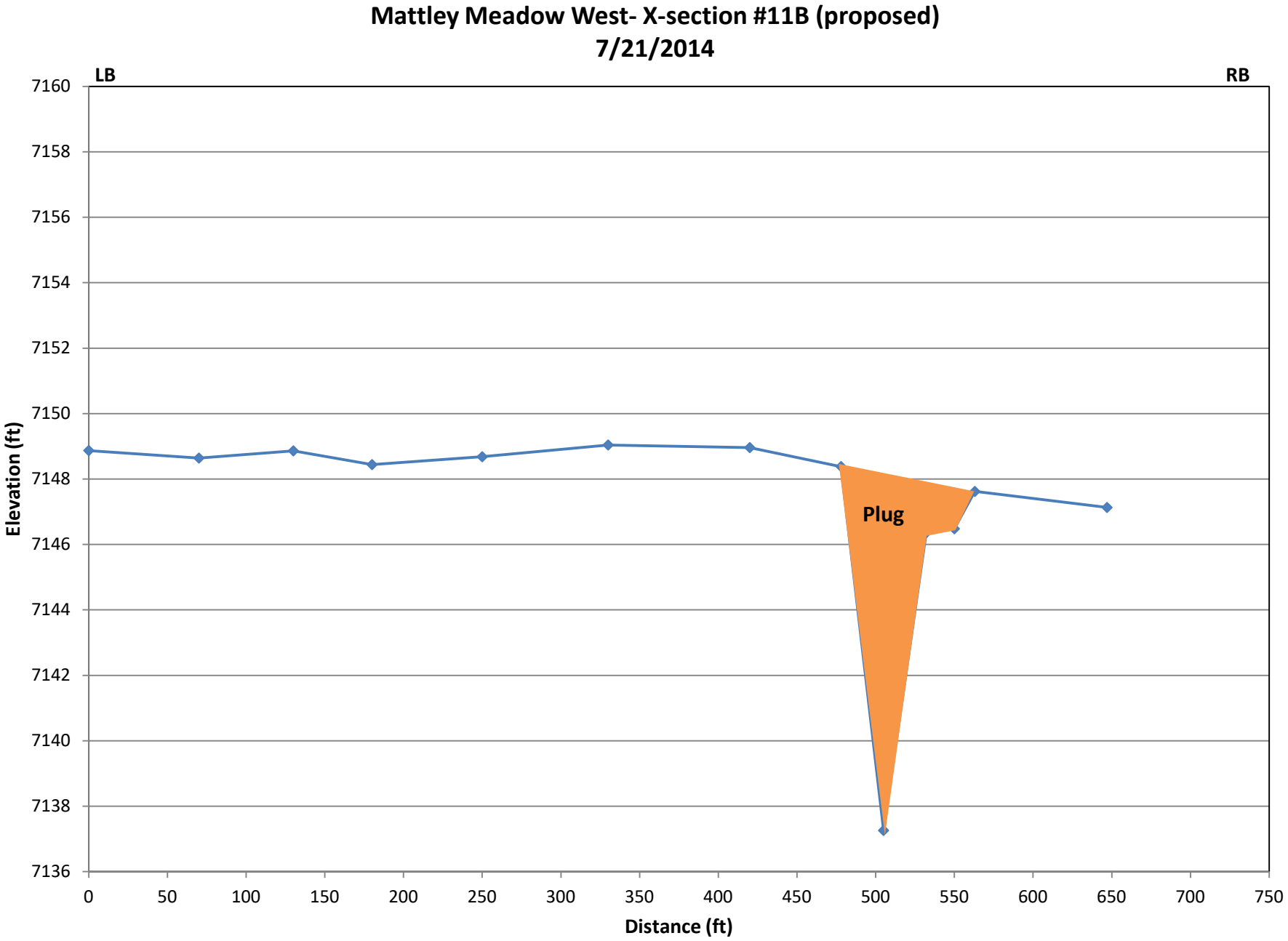
T07N

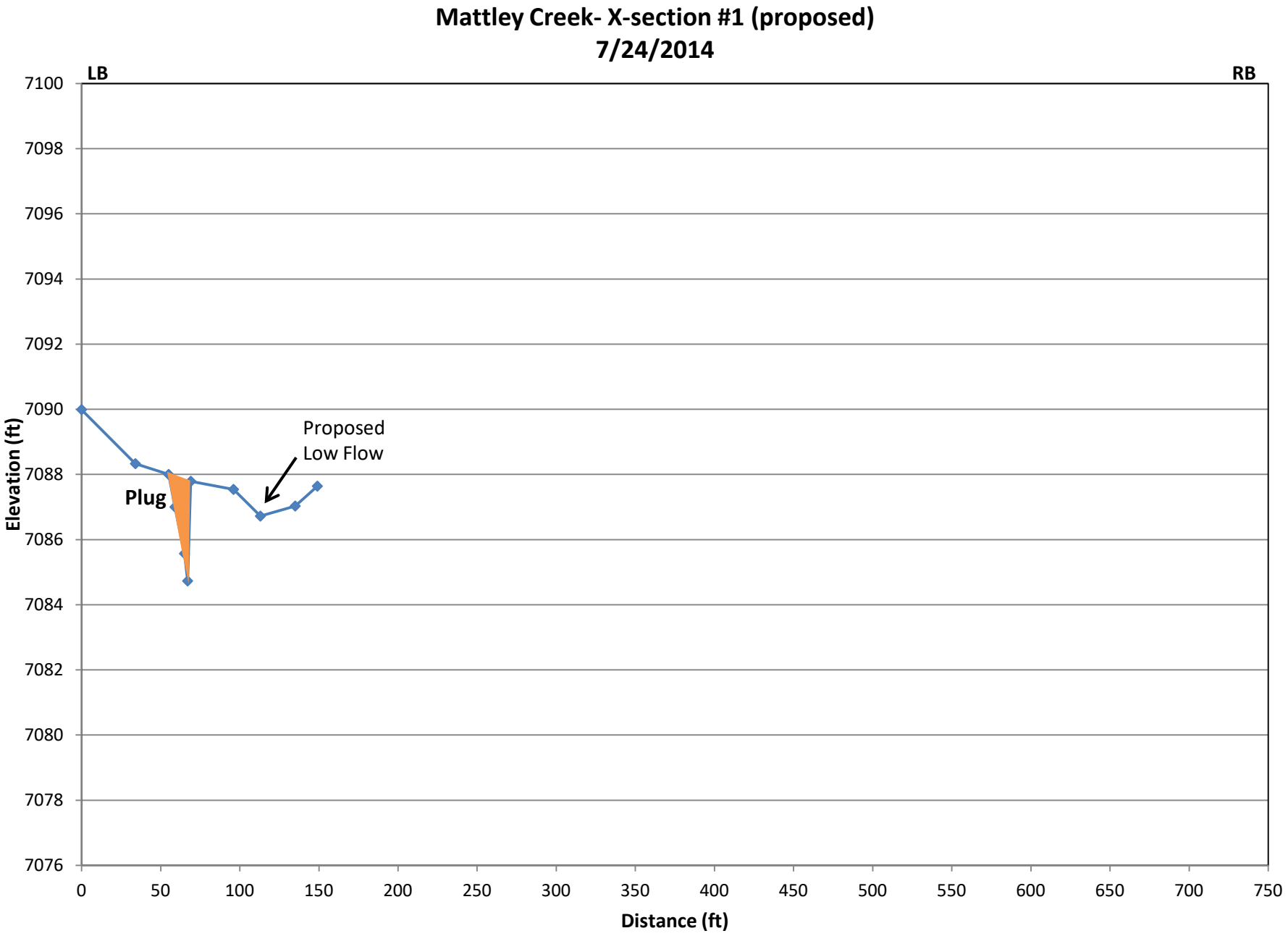
Legend

- Cross-section
- Existing Swale (Proposed Low Flow)
- Existing Trail
- Proposed Trail Reroute
- Existing Channel
- Proposed Palustrine Expansion
- Proposed Borrow Ponds
- Project Area Boundary
- Plugs
- Existing Palustrine
- Control Point

PLUMAS CORPORATION


Mattley Meadow East- X-section #7 (proposed)
7/11/2014
LB
RB
Borrow
Pond
Plug
Proposed
Low Flow
Elevation (ft)
Distance (ft)
7140
7138
7136
7134
7132
7130
7128
7126
7124
7122
7120
7118
7116
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750


Mattley Meadow West- X-section #11B (proposed)
7/21/2014
LB
RB
Plug
Elevation (ft)
Distance (ft)
7160
7158
7156
7154
7152
7150
7148
7146
7144
7142
7140
7138
7136
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750


Mattley Creek- X-section #1 (proposed)
7/24/2014
LB
RB
7100
7098
7096
7094
7092
7090
7088
7086
7084
7082
7080
7078
7076
Elevation (ft)
Proposed
Low Flow
Plug
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
Distance (ft)