Chuckwalla Valley Road Bridge over Aztec Ditch (State Br. No. 56C0102)

Photograph: 1-1

Photo Date: 02-19-2019

Location: Feature 1-6

Direction: Southwest

Comment: Looking upstream at Feature 1-6.

Photograph: 1-2

Photo Date: 02-19-2019

Location: Feature 1-6

Direction: North

Comment: Looking downstream at Feature 1-6 where flows are conveyed from Chuckwalla Valley Road, but recent presumably routine grading had bermed the side of the road at the feature's origin.

Photograph: 1-3

Photo Date: 02-19-2019

Location: Feature 1-1

Direction: Southwest

Comment: Looking downstream at Feature 1-1.

Photograph: 1-4

Photo Date: 02-19-2019

Location: Feature 1-2 (Aztec Ditch)

Direction: Southwest

Comment: Looking upstream at Feature 1-2 (Aztec Ditch from the bridge on Chuckwalla Valley Road.

Photograph: 1-5

Photo Date: 02-19-2019

Location: Feature 1-2 (Aztec Ditch)

Direction: Northeast

Comment: Looking downstream at Feature 1-2 (Aztec Ditch) from the bridge on Chuckwalla Valley Road.

Photograph: 1-6

Photo Date: 02-19-2019

Location: Feature 1-3

Direction: South

Comment: Area where flow from Feature 1-3 terminates, taken from the diversion dike.

Photograph: 1-7

Photo Date: 02-19-2019

Location: Feature 1-3

Direction: Southwest

Comment: Looking upstream at Feature 1-3.

Photograph: 1-8

Photo Date: 02-19-2019

Location: Feature 1-4

Direction: South

Comment: Looking upstream at Feature 1-4 from its confluence with Feature 1-3 near Chuckwalla Valley Road.

Photograph: 1-9

Photo Date: 02-19-2019

Location: Feature 1-5

Direction: southeast

Comment: Looking downstream at the origin of Feature 1-5 along the south side of Chuckwalla Valley Road.

Photograph: 1-10

Photo Date: 02-19-2019

Location: Feature 1-2 (Aztec Ditch)

Direction: Northeast

Comment: Looking downstream at one of the low flow channels within Feature 1-2 (Aztec Ditch).

Photograph: 1-25

Photo Date: 02-27-2019

Location: Feature 1-2 (Aztec Ditch)

Direction: Northwest

Comment: Looking at SP 5. Non-wetland.

Chuckwalla Valley Road Bridge over Tarantula Ditch (State Br. No. 56C0103)

Photograph: 1-11

Photo Date: 02-19-2019

Location: Feature 2-1

Direction: Southeast

Comment: Looking upstream at Feature 2-1.

Photograph: 1-13

Photo Date: 02-19-2019

Location: Feature 2-2

Direction: Northwest

Comment: Looking at low point along the Chuckwalla Valley Road where Feature 2-2 terminates.

Photograph: 1-14

Photo Date: 02-19-2019

Location: Feature 2-2

Direction: Southwest

Comment: Looking upstream at Feature 2-2 from the diversion dike that splits Feature 2-2 from Feature 2-3.

Photograph: 1-15

Photo Date: 02-19-2019

Location: Feature 2-3

Direction: Northeast

Comment: Looking downstream at one of the low flow channels within Feature 2-3.

Photograph: 1-16

Photo Date: 02-19-2019

Location: Feature 2-3

Direction: Northwest

Comment: Looking upstream at Feature 2-3.

Photograph: 1-17

Photo Date: 02-19-2019

Location: Feature 2-3

Direction: West

Comment: View of the man-made diversion dike, taken from the top of the diversion dike along the west side of Feature 2-3.

Photograph: 1-18

Photo Date: 02-19-2019

Location: Feature 2-7

Direction: Southeast

Comment: Looking downstream at Feature 2-7 along the south side of Chuckwalla Valley Road.

Photograph: 1-19

Photo Date: 02-19-2019

Location: Feature 2-4

Direction: South

Comment: Looking upstream at Feature 2-4 from where the feature flows into Feature 2-7.

Photograph: 1-20

Photo Date: 02-19-2019

Location: Feature 2-5

Direction: Southwest

Comment: Looking upstream at Feature 2-5 from where the feature flows into Feature 2-7.

Photograph: 1-21

Photo Date: 02-19-2019

Location: Feature 2-6

Direction: South

Comment: Looking upstream at Feature 2-6.

Photograph: 1-22

Photo Date: 02-19-2019

Location: Feature 2-2

Direction: Northeast

Comment: Looking downstream at Feature 2-2 from the bridge on Chuckwalla Valley Road.

Photograph: 1-23

Photo Date: 02-19-2019

Location: Feature 2-2

Direction: South

Comment: Looking upstream at Feature 2-2 from the bridge on Chuckwalla Valley Road.

Photograph: 1-24

Photo Date: 02-19-2019

Location: Feature 2-2

Direction: Southwest

Comment: Looking upstream at Feature 2-2 towards bridge on Chuckwalla Valley Road.

Photograph: 1-26

Photo Date: 02-27-2019

Location: Feature 2-3

Direction: Southeast

Comment: Looking at SP 6. Non-wetland.

Chuckwalla Valley Road Bridge over Sutro Ditch (State Br. No 56C0104)

Photograph: 2-1

Photo Date: 02-27-2019

Location: Feature 3-1 and Feature 3-2

Direction: Southwest

Comment: Looking upstream at Feature 3-1 and Feature 3-2 from their confluence along Chuckwalla Valley Road.

Photograph: 2-2

Photo Date: 02-27-2019

Location: Feature 3-2

Direction: Northeast

Comment: Looking downstream at Feature 3-2.

Photograph: 2-3

Photo Date: 02-27-2019

Location: Feature 3-3

Direction: North

Comment: Looking downstream at Feature 3-3.

Photograph: 2-5

Photo Date: 02-27-2019

Location: Feature 3-4

Direction: South

Comment: Looking upstream at Feature 3-4 from its confluence with Feature 3-5.

Photograph: 2-6

Photo Date: 02-27-2019

Location: Feature 3-5

Direction: North

Comment: Looking downstream at Feature 3-5.

Photograph: 2-7

Photo Date: 02-27-2019

Location: Feature 3-5

Direction: South

Comment: Looking upstream at Feature 3-5 from its terminus at a low point along Chuckwalla Valley Road.

Photograph: 2-8

Photo Date: 02-27-2019

Location: Feature 3-6

Direction: Northeast

Comment: Looking downstream at Feature 3-6.

Photograph: 2-9

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: Northeast

Comment: Looking downstream at Feature 3-8 from the center of the channel.

Photograph: 2-10

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: Northeast

Comment: Looking downstream at Feature 3-8 from the top of the diversion dike on the east side of the channel.

Photograph: 2-11

Photo Date: 02-27-2019

Location: Feature 3-7

Direction: Southeast

Comment: Looking downstream at Feature 3-7 flowing towards Feature 3-8 near the bridge.

Photograph: 2-12

Photo Date: 02-27-2019

Location: Feature 3-7

Direction: Northwest

Comment: Looking upstream at Feature 3-7 where it flows along the south side of Chuckwalla Valley Road.

Photograph: 2-13

Photo Date: 02-27-2019

Location: Feature 3-7

Direction: Southeast

Comment: Looking downstream at Feature 3-7 from its origin where flow is conveyed off of Chuckwalla Valley Road.

Photograph: 2-15

Photo Date: 02-27-2019

Location: Feature 3-9

Direction: Northeast

Comment: Looking downstream at Feature 3-9 from where is runs over old asphalt the runs parallel to Chuckwalla Valley Road.

Photograph: 2-16

Photo Date: 02-27-2019

Location: Feature 3-9

Direction: Southwest

Comment: Looking upstream at Feature 3-9.

Photograph: 2-18

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: Southwest

Comment: Looking upstream at Feature 3-8 from where the diversion dike meets Chuckwalla Valley Road.

Photograph: 2-19

Photo Date: 02-27-2019

Location: Feature 3-10

Direction: Southwest

Comment: Looking upstream at Feature 3-10 from the edge of the study area.

Photograph: 2-20

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: North

Comment: Looking downstream at Feature 3-8 from the diversion dike along the east side of Chuckwalla Valley Road.

Photograph: 2-21

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: Southwest

Comment: Looking upstream at Feature 3-8 from the diversion dike along the east side of the channel.

Photograph: 2-47

Photo Date: 02-27-2019

Location: Feature 3-5

Direction: South

Comment: Looking at SP 1 within the low point displaying soil cracks at the terminus of Feature 3-5.

Photograph: 2-48

Photo Date: 02-27-2019

Location: Feature 3-8

Direction: Northwest

Comment: Looking at SP 2 within Feature 3-8.

Chuckwalla Valley Road Bridge over Acari Ditch (State Br. No. 56C0108)

Photograph: 2-22

Photo Date: 02-27-2019

Location: Feature 4-1

Direction: Northeast

Comment: Looking downstream at Feature 4-1.

Photograph: 2-23

Photo Date: 02-27-2019

Location: Feature 4-2

Direction: North

Comment: Looking downstream at Feature 4-2 where the OHWM narrows.

Photograph: 2-24

Photo Date: 02-27-2019

Location: Feature 4-2

Direction: Southwest

Comment: Looking upstream at Feature 4-2.

Photograph: 2-26

Photo Date: 02-27-2019

Location: Feature 4-3

Direction: Northeast

Comment: Looking at low point where Feature 4-3 terminates in between the diversion dike and Chuckwalla Valley Road.

Photograph: 2-27

Photo Date: 02-27-2019

Location: Feature 4-3

Direction: North

Comment: Looking downstream at Feature 4-3 towards the diversion dike.

Photograph: 2-28

Photo Date: 02-27-2019

Location: Feature 4-4

Direction: North

Comment: Looking downstream at Feature 4-4 from the diversion dike along the east side of the channel.

Photograph: 2-29

Photo Date: 02-27-2019

Location: Feature 4-4

Direction: Southeast

Comment: Looking upstream at Feature 4-4 from the diversion dike along the west side of the channel.

Photograph: 2-30

Photo Date: 02-27-2019

Location: Feature 4-5

Direction: Northwest

Comment: Looking upstream at Feature 4-5 from the area containing soil cracks where the feature terminates.

Photograph: 2-31

Photo Date: 02-27-2019

Location: Feature 4-5

Direction: South

Comment: Area containing soils cracks where Feature 4-5 terminates.

Photograph: 2-32

Photo Date: 02-27-2019

Location: Feature 4-5

Direction: Southeast

Comment: Looking downstream at Feature 4-5.

Photograph: 2-33

Photo Date: 02-27-2019

Location: Feature 4-6

Direction: Northeast

Comment: Looking downstream at Feature 4-6 towards its confluence with Feature 4-7.

Photograph: 2-34

Photo Date: 02-27-2019

Location: Feature 4-4

Direction: Southeast

Comment: Looking upstream at Feature 4-4 from the diversion dike along the west side of the channel.

Photograph: 2-36

Photo Date: 02-27-2019

Location: Feature 4-4

Direction: Northwest

Comment: Low point where water sits, but does not exhibit flow or hydrophytic vegetation, looking towards Feature 4-4.

Photograph: 2-38

Photo Date: 02-27-2019

Location: Feature 4-4

Direction: Northwest

Comment: Looking downstream at Feature 4-4.

Photograph: 2-41

Photo Date: 02-27-2019

Location: Feature 4-7

Direction: Southwest

Comment: Looking upstream at Feature 4-7.

Photograph: 2-42

Photo Date: 02-27-2019

Location: Feature 4-9

Direction: east

Comment: Looking downstream at Feature 4-9 from where it runs along the side of Chuckwalla Valley Road.

Photograph: 2-43

Photo Date: 02-27-2019

Location: Feature 4-9

Direction: East

Comment: **L**ooking downstream at Feature 4-9 where the Feature sheet flows over old asphalt that runs parallel to Chuckwalla Valley Road.

Photograph: 2-44

Photo Date: 02-27-2019

Location: Feature 4-9

Direction: North

Comment: Looking downstream at Feature 4-9.

Photograph: 2-45

Photo Date: 02-27-2019

Location: Feature 4-10 and 4-11

Direction: Northeast

Comment: Looking downstream at the split between Feature 4-10 and Feature 4-11 from Feature 4-9.

Photograph: 2-46

Photo Date: 02-27-2019

Location: Feature 4-10 and 4-11

Direction: Southeast

Comment: Looking downstream at Feature 4-9 where it conveys flows along the north side of Chuckwalla Valley Road.

	**Photograph:** 2-49 **Photo Date:** 02-27-2019 **Location:** SP 3 **Direction:** Northwest **Comment:** Looking at SP 3 within area containing soil cracks to the west of the western diversion dike, south of Chuckwalla Valley Road.
	**Photograph:** 2-50 **Photo Date:** 02-27-2019 **Location:** Feature 4-4 **Direction:** Northwest **Comment:** Looking at SP 4 at the base the Feature 4-4 near the bridge.

Appendix C

Ordinary High Water Mark Forms

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Form # 1

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridge over Aztec Ditch **Date:** 2/19/2019 **Time:** 11:00 AM
Project Number: 37.19, Task 1 **Town:** Near Desert Center **State:** CA
Stream: Aztec Ditch, south of Road **Photo begin file#:** **Photo end file#:**
Investigator(s): K. Klinefelter, P. Schwartz

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Aztec Ditch, south of Chuckwalla Valley Rd.

Projection: **Datum:** WGS 84
Coordinates: 33.402665, -115.135787

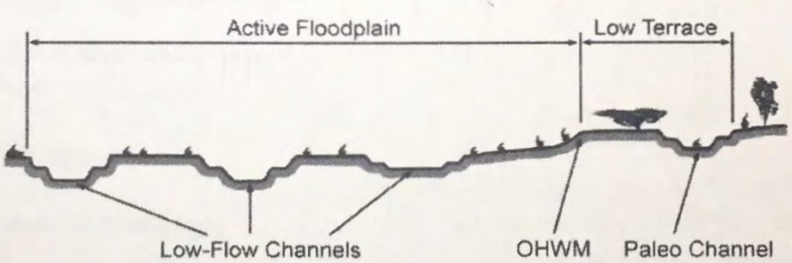
Potential anthropogenic influences on the channel system:
Flows under two-lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt pushed to the side of road, possibly after being washed over road in recent rain events

Brief site description: All features flow S→N
Four total features (1-1, 1-2, 1-3, 1-4); desert wash. 1-1 is small side channel that flows over road. 1-2 main channel, flows under bridge, funnels in. 1-3 odd feature w/no outlet only on S. side of road. 1-4 only on S side of road. 1-5 flows parallel to road into 1-2, main channel.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

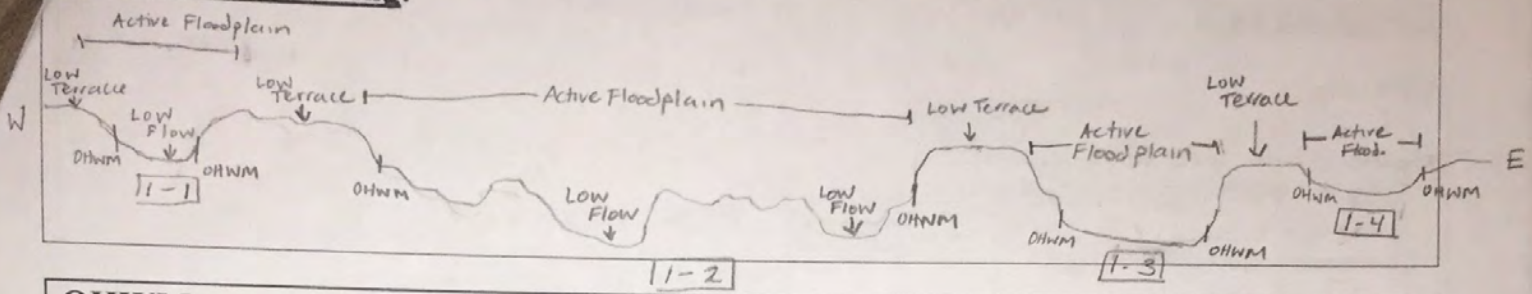


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** Aztec Ditch, S. of Road **Date:** 2/19/2019 **Time:** 11:00 AM

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain units for the main channel, Feature 1-2

GPS point: _____

Indicators:

- ☑ Change in average sediment texture
- ☐ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: Change in sediment size
- ☐ Other: _____

Comments:

- Scattered shrubs, trees (Mesquite, Tamarisk, creosote) within channels, concentrated along banks leading up to terrace
- Sandy low flow channels with larger sediment in areas of active floodplain w/ less flow

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: change in particle size distribution
- ☑ Other: Gravel sheets
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** Aztec Ditch, S. of Road **Date:** 2/19/2019 **Time:** 11:00 AM

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 40 % Tree: 5 % Shrub: 25 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: exposed roots
- ☑ Other: change in particle size distribution
- ☑ Other: Gravel sheets
- ✓ Levees and narrow berms

Comments:

• Palo Verde, Mesquite, creosote, phacelia distans, yellow evening primrose, Mentzelia sp., Camissonia brevipes

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 5 % Tree: 1 % Shrub: 3 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☐ Other: _____
- ☐ Other: _____

Comments:

Form #2

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridge over Aztec Ditch
Project Number: 37.19, Task 1
Stream: Aztec Ditch, North of Road
Investigator(s): K. Klinefelter, P. Schwartz

Date: 2/19/2019 **Time:** 12:00 pm
Town: Near Desert Center **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Aztec Ditch, North of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.402782, -115.135601

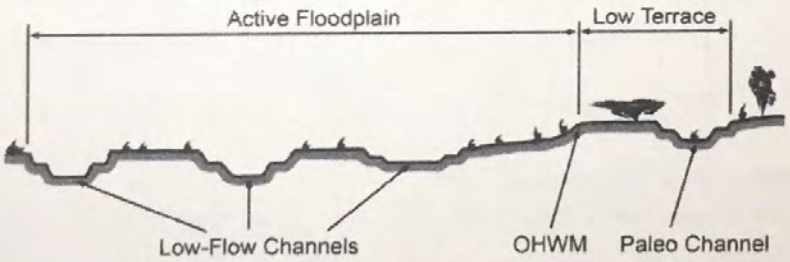
Potential anthropogenic influences on the channel system:
Flows under two-lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt has been pushed to sides of road, possibly after being washed over road from recent rain events

Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

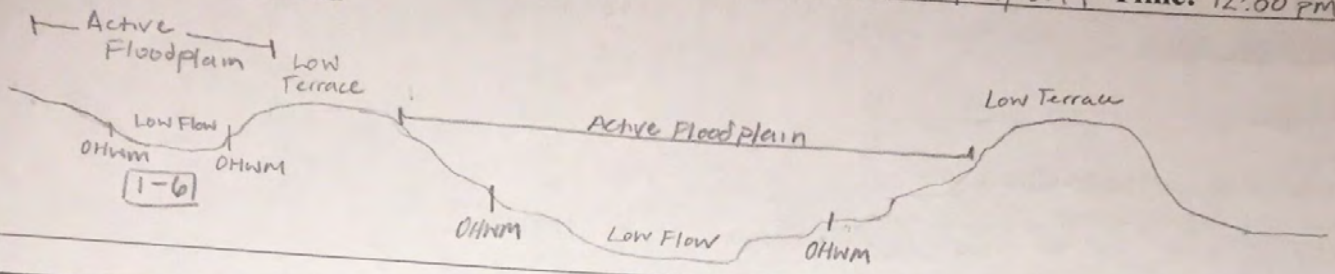


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: **Cross section ID:** Aztec Ditch, N. of Road **Date:** 2/19/2019 **Time:** 12:00 pm

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and floodplain units for the main channel, Feature 1-2

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: change in sediment particle size
- [ ] Other: _____

Comments:

- Flow condensed from south side/upstream side of bridge

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 5 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: gravel sheets
- [ ] Other: _____
- [ ] Other: _____

Comments:

- Sparsely vegetated w/ annuals

Project ID: **Cross section ID:** Aztec Ditch, N. of road **Date:** 2/19/2019 **Time:** 12:00pm

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very coarse sand

Total veg cover: 30 % Tree: 15 % Shrub: 10 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: Levees and narrow berms
- ☑ Other: change in particle size distribution

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 20 % Tree: 5 % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☐ Other: _____
- ☐ Other: _____

Comments:

Form # 3

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd Bridge Over Tarantula Ditch
Project Number: 41.19, Task 1
Stream: Tarantula Ditch, South of Road
Investigator(s): K. Klinefelter, P. Schwartz

Date: 2/19/2019 **Time:** 13:30
Town: Near Desert Center **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Tarantula Ditch, South of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.394879, -115.125296

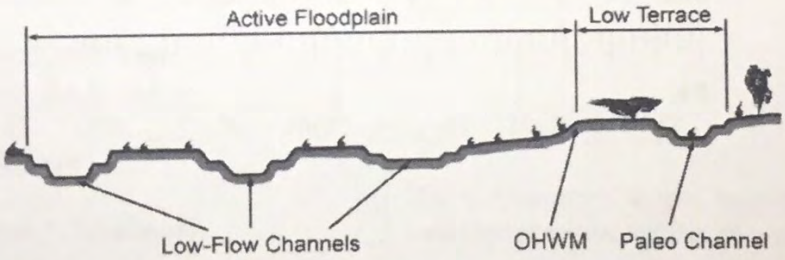
Potential anthropogenic influences on the channel system:
Flows under two-lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt has been pushed to sides of road, possibly after being washed over road from recent rain events

Brief site description:
some paleo channels that exist because of potentially man-made berms. OHWM indicators have been wind eroded there.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

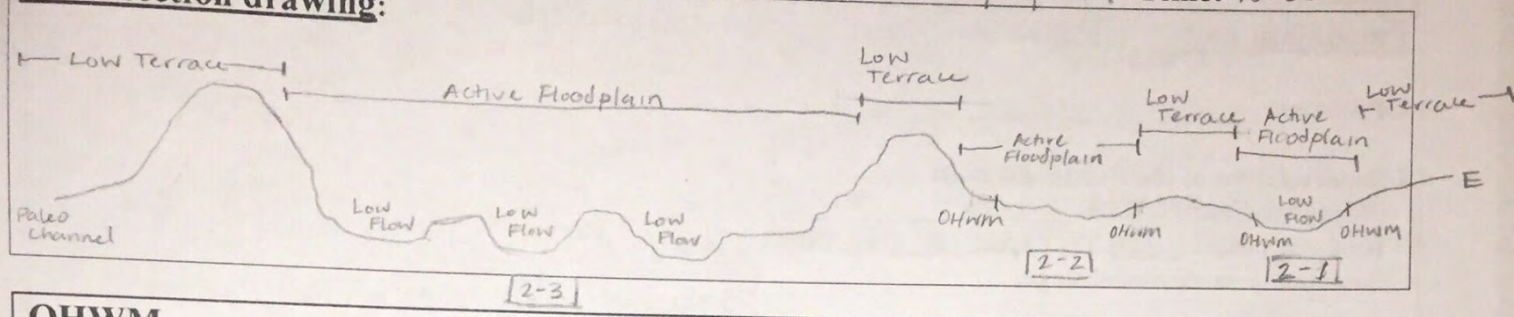


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** Tarantula Ditch, S. of Road **Date:** 2/19/2019 **Time:** 13:30

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain units for the main channel, Feature 2-3

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: change in sediment size
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Med. sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Gravel sheets
- [x] Other: long gravel bars
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** Tarantula Ditch, S. of Road **Date:** 2/19/2019 **Time:** 13:30

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 30 % Tree: 10 % Shrub: 12 % Herb: 8 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: Levees and narrow berms
- ☑ Other: change in particle size distribution

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule / Pebble

Total veg cover: 50 % Tree: 5 % Shrub: 10 % Herb: 35 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☑ Other: Surface rounding
- ☐ Other: _____

Comments:

- Surface rounding from wind erosion over paleo channels made by large berm
- Herb cover high

Form # 4

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridge over Tarantula Ditch **Date:** 2/19/2019 **Time:** 1500
Project Number: 41.19, Task 1 **Town:** Near Desert Center **State:** CA
Stream: Tarantula Ditch, North of Road **Photo begin file#:** **Photo end file#:**
Investigator(s): K. Klinefelter, P. Schwartz

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Tarantula Ditch North of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.395025, -115.125110

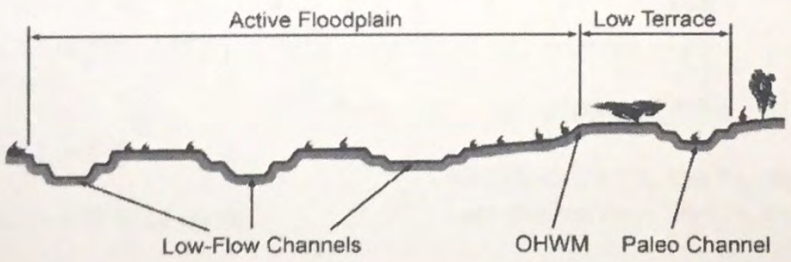
Potential anthropogenic influences on the channel system:
Flows under two-lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt has been pushed to sides of road, possibly after being washed over road from recent rain events

Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  - Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

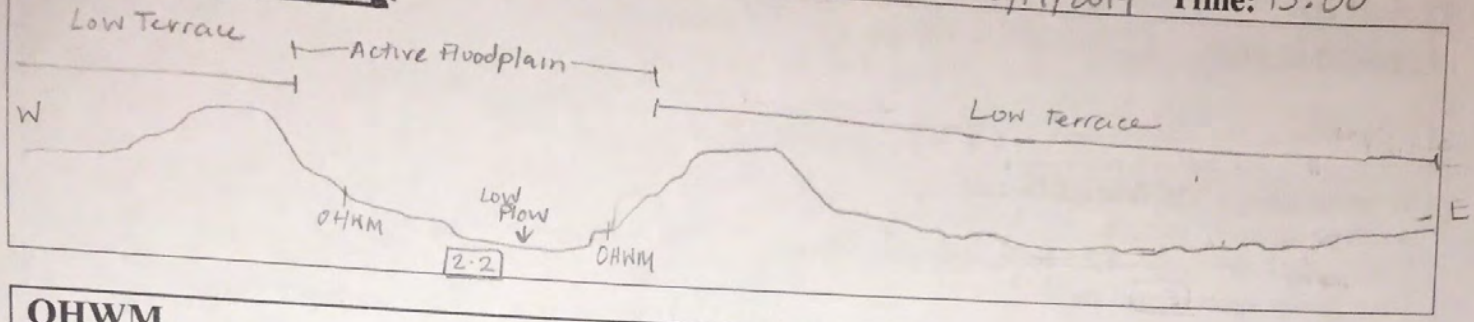


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: **Cross section ID:** Tarantula Ditch, N. of Road **Date:** 2/19/2019 **Time:** 15:00

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain Units for the main channel, Feature 2-2

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: change in sediment size
- [x] Other: change in sed. disposition

Comments:

- Wind eroded paleo features in low terrace
- Has separate road runoff feature to east; very shallow with slight veg/sediment changes

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [x] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Gravel sheets
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: Tarantula Ditch **Cross section ID:** N. of Road **Date:** 2/19/2019 **Time:** 15:00

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Med. Sand

Total veg cover: 5 % Tree: 0 % Shrub: 4 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: Levees and narrow berms
- ☑ Other: change in particle size dist.

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 50 % Tree: 5 % Shrub: 10 % Herb: 45 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☑ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☑ Other: Surface rounding
- ☐ Other: _____

Comments:

Form # 5

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd Bridge over Sutro Ditch
Project Number: 40.19, Task 1
Stream: Sutro Ditch, South of road
Investigator(s): K. Klinefelter, P. Schwartz

Date: 2/27/2019 **Time:** 11:30 AM
Town: Near Desert Center **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Area south of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.390620, -115.113955

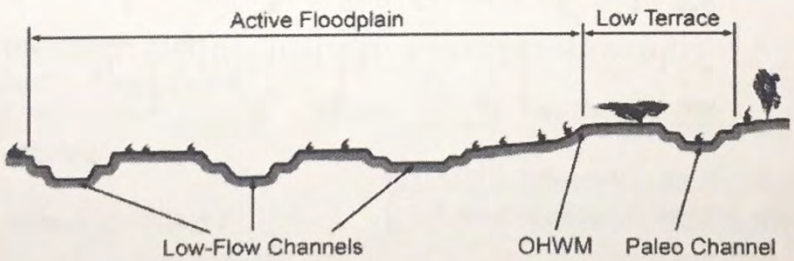
Potential anthropogenic influences on the channel system:
Flows under two lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt has been pushed to sides of road, possibly after being washed over road from recent rain events

Brief site description:
Side channels that run parallel to main channel flow towards low point along road and do not connect with main channel because of large berm

Checklist of resources (if available):

- ☑ Aerial photography
  - Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

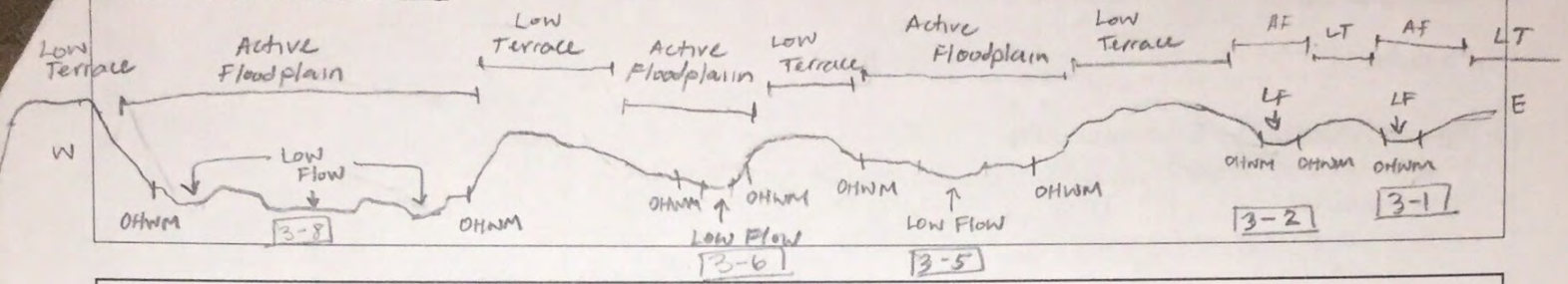


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** Sutro Ditch, S. of Road **Date:** 2/27/2019 **Time:** 11:30

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain units of the main channel, Feature 3-8

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: change in avg. sed. size
- [ ] Other: _____

Comments:

Smaller side channels that run parallel to main channel and flow into basin on side of road.
Main channel has multiple low flow channels.
Sandy bottom, larger sediment, shrubs along banks.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Gravel sheets
- [ ] Other: _____
- [ ] Other: _____

Comments:

Mudcracks in side channels where they connect to basin; also in basin

Project ID: **Cross section ID:** Sutro Ditch, S. of Road **Date:** 2/27/2019 **Time:** 11:30 AM

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand

Total veg cover: 30 % Tree: 5 % Shrub: 20 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Meander bars
- ☑ Other: Narrow berms and levees
- ☑ Other: Gravel sheets
- ✓ change in particle size distribution

Comments:

Annual herbs

Shrubs lining berms and banks

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 10 % Tree: 3 % Shrub: 4 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☐ Other: _____
- ☐ Other: _____

Comments:

Form #6

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridge over Sutro Ditch
Project Number: 40.19, task 1
Stream: Sutro Ditch, N. of Road
Investigator(s): K. Klinefelter, P. Schwartz
Date: 2/27/2019 **Time:** 12:00 pm
Town: Near Desert Center **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Area of SA North of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.390775, -115.113748

Potential anthropogenic influences on the channel system:
Flows under two-lane Chuckwalla Valley Road
Potentially man-made berms on either side of main channel feature
Dirt has been pushed to sides of road, possibly after being washed over road from recent rain events

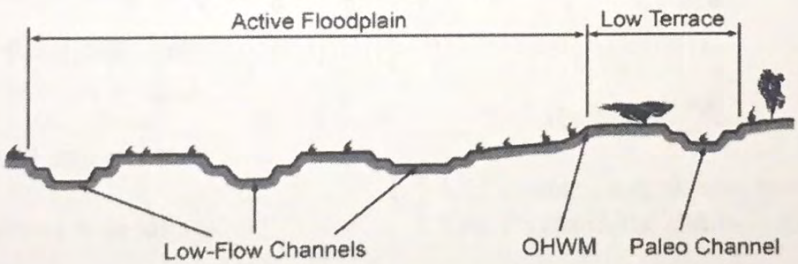
Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

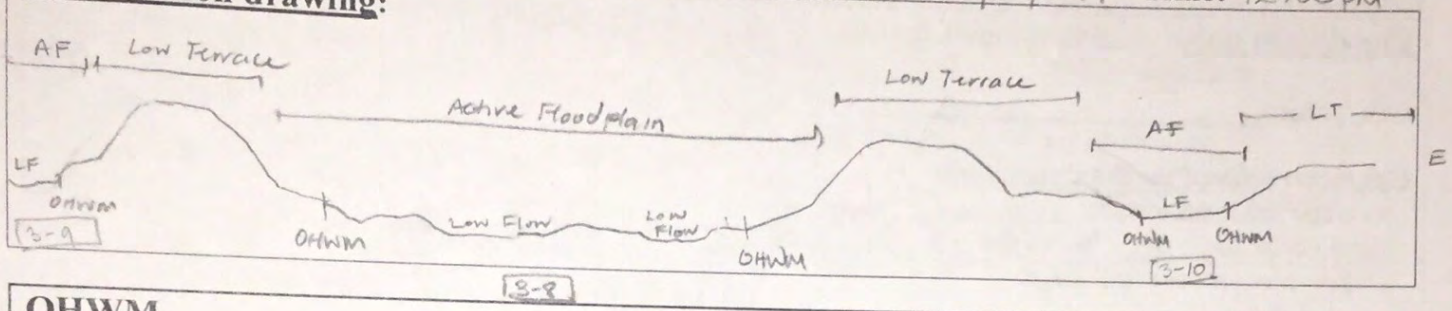


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** Sutro Ditch, N. of Road **Date:** 2/27/2019 **Time:** 12:00 PM

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain Units of the main channel, Feature 3-8

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Less vegetated below OHWM, not at all in Low flow channels

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Gravel sheets
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** Sutro Ditch N of Road **Date:** 2/27/2019 **Time:** 12:00 pm

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very coarse sand

Total veg cover: 15 % Tree: 5 % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: Change in particle size distribution
- ☐ Other: _____

Comments:

Tamarisk growing near bridge
Annuals growing on berms and banks

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 10 % Tree: ____ % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☐ Other: _____
- ☐ Other: _____

Comments:

Form # 7

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridges over Acari Ditch **Date:** 2/27/2019 **Time:** 1600
Project Number: 36.19, Task 1 **Town:** Near Desert Center **State:** CA
Stream: Acari Ditch, S. of Road **Photo begin file#:** **Photo end file#:**
Investigator(s): K. Klinefelter, P. Schwartz

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Area south of Chuckwalla Valley Road

Projection: **Datum:** WGS84
Coordinates: 33.372909, -115.085049

Potential anthropogenic influences on the channel system:

Berms on either side of main channel, have old junk cars built into them for support (?)
Dirt has been pushed to sides of road, possibly after flowing over road during recent rain events
Flows under two-lane Chuckwalla Valley Road

Brief site description:

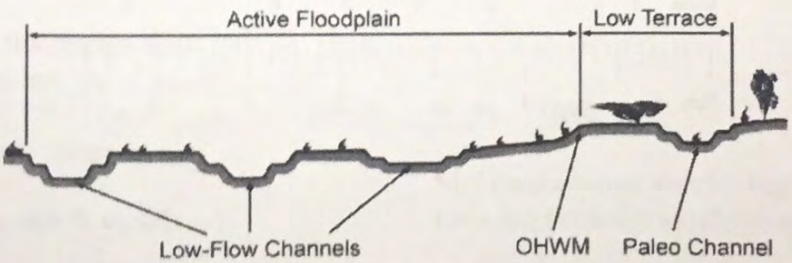
Sandy bottom channels. Multiple channels to east of main channel that flow to low point next to road, held in by berm and end there.
Low point with mudcracks to west of main channel on other side of berm

Checklist of resources (if available):

Dom Plants:
Creosote
Mesquite
Ambrosia

- ☑ Aerial photography
  - Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

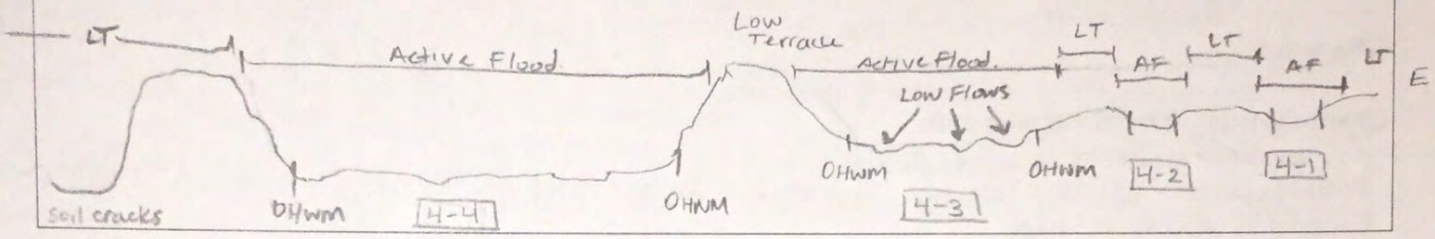


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☑ GPS
   - ☐ Other:

Project ID: **Cross section ID:** Acari Ditch S. of Road **Date:** 2/27/2019 **Time:** 1600

Cross section drawing:



OHWM

* The following sections will focus on the OHWM and Floodplain Units of the main channel, Feature 4-4

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 5 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Gravel Shuts
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** Acari Ditch S. of Road **Date:** 2/27/2019 **Time:** 16:00

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand

Total veg cover: 15 % Tree: 3 % Shrub: 8 % Herb: 4 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: Meander bars
- ☑ Other: Narrow berms and levees
- ✓ change in partical size distribution

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 15 % Tree: 2 % Shrub: 3 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Desert pavement
- ☐ Other: _____
- ☐ Other: _____

Comments:

Form # 8

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Chuckwalla Valley Rd. Bridge over Acari Ditch **Date:** 2/27/2019 **Time:** 1620
Project Number: 36.19, Task 1 **Town:** Near Desert Center **State:** CA
Stream: Acari Ditch, N. of Road **Photo begin file#:** **Photo end file#:**
Investigator(s): K. Klinefelter, P. Schwartz

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Area North of Chuckwalla Valley Road

Projection: **Datum:** WGS 84
Coordinates: 33.373067, -115.084873

Potential anthropogenic influences on the channel system:
Berms on either side of main channel; have old cars built in for support (?)
Flows under two-lane Chuckwalla Valley Road

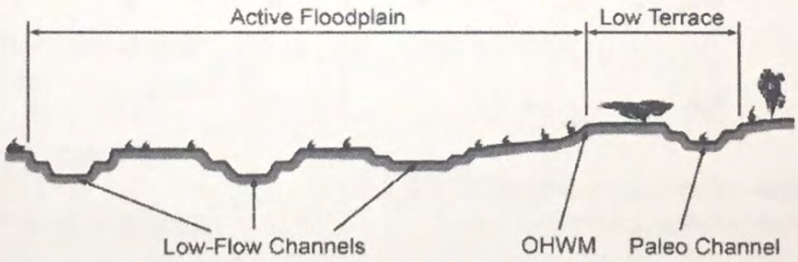
Brief site description:
Sandy bottom channels. Main low flow channel with trib. (4-9) originating from road. Multiple small channels flowing from 4-9. Old berm on either side of main channel appers to have been broken/eroded away, thus allowing for 4-9 to flow in

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Dom. Plants:
Creosote
Mesquite
Ambrosia

Hydrogeomorphic Floodplain Units

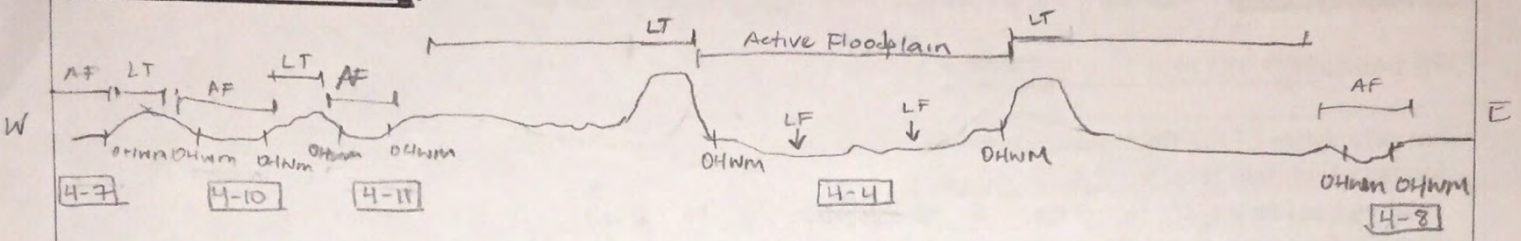


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: **Cross section ID:** Acari Ditch, N. of Road **Date:** 2/27/2019 **Time:** 1620

Cross section drawing:



OHWM

* This section will focus on the OHWM and Floodplain Units for the main channel, Feature 4-4

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Gravel sheets
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** Acari Ditch N. of Road **Date:** 2/27/2019 **Time:** 1620

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 20 % Tree: 3 % Shrub: 10 % Herb: 7 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☑ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Gravel sheets
- ☑ Other: change in particle size Dist.
- ☐ Other: _____

Comments:

Appendix D
Wetland Determination Data Forms

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Cherokee Valley Road – Sutro Ditch City/County: Unincorporated / Riverside County Sampling Date: 2/27/19

Applicant/Owner: RCTD State: CA Sampling Point: SP1 – Sutro

Investigator(s): Paul Schwartz Section, Township, Range: S15 T6S R17E

Landform (hillslope, terrace, etc.): Roadside Local relief (concave, convex, none): Concave Slope (%): ~1

Subregion (LRR): C-Med Lat: 33.390584 Long: -115.113695 Datum: WGS 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No (If needed, explain any answers in Remarks.)

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

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

Remarks: Pit dug in small "basin" feature where water from 2 small features collect adjacent to the road. Has cracked soils + fresh sediment + more herbaceous veg than deep sand under bridge.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Parkinsonia aculeata	30	Y	FAC
2. Hymenoclea salsola	35	Y	UPL
3. Larrea tridentata	20	Y	UPL
4.			
5.			
	85 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Vulpia myuros	25	Y	FACU
2. Sisymbrium irio	2	N	UPL
3. Pectocarya sp.	2	N	UPL
4. Schismus barbatus	5	N	UPL
5.			
6.			
7.			
8.			
	34 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1. N/A			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust N/A

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (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% No

___ 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: Area adjacent to young Palo verde and areas of herbaceous vegetation.

Sutne.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17"	7.5YR4/4	100	—	—	—	—	silty loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: No hydric soil indicators observed.

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: Area where 2 small ephemeral drainages converge adjacent to road. The "berm" along road is creating a small "basin" area where water collects. Has some debris wracking + silty sediment deposition w/ some soil cracking

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Chuckwalla Valley Road - Sutro Ditch City/County: Unincorporated/ Riverside County Sampling Date: 2-27-19

Applicant/Owner: RCTD State: CA Sampling Point: SP2 - Sutro

Investigator(s): Paul Schwartz Section, Township, Range: S15 T6S R17E

Landform (hillslope, terrace, etc.): Sandy Wash Local relief (concave, convex, none): none Slope (%): ~1

Subregion (LRR): C-Med Lat: 33.390682 Long: -115.113852 Datum: WGS 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

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

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

Remarks: Pit adjacent to large Tamarix near US edge of bridge. Deep sand w/ sparse herbaceous cover

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Tamarix aphylla	55	Y	FAC
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5)			
1. Peritylle emoryi	6	Y	UPL
2. Pectocarya sp.	2	Y	UPL
3. Cammisonia boothii	2	Y	UPL
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. N/A			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust N/A

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (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% No

__ 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: Area adjacent to large Tamarix.

SOIL

Sampling Point: Sutre 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	7.5YR 4/4	100	–	–	–	–	silty loam	
6-17	7.5YR 5/3	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: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: No hydric soil indicators observed.

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: Wash area adjacent to bridge. w/n low flow area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Chuckwalla Valley Road - Acari Ditch City/County: Unincorporated / Riverside County Sampling Date: 2/27/19

Applicant/Owner: RCTD State: CA Sampling Point: SP3 - Acari

Investigator(s): Paul Schwartz Section, Township, Range: S30 T6S R18E

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

Subregion (LRR): C-Med Lat: 33.373032 Long: -115.085170 Datum: NAD 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No Are "Normal Circumstances" present? Yes ✓ No _____

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

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

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

Remarks: Area DS of large berm w/ cracked soils. Appears that water collects here from small watershed b/w berm and road. A few swale-ish features lead to cracked soils area. Pit in low spot of cracked soils area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prosopis glandulosa	40	Y	FACU
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Hymenoclea salsola	10	Y	UPL
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5)			
1. Pectocarya sp.	5	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
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: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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: Large mesquite tree in plot.

Acari

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	7.5YR 4/4	100	–	–	–	–	silty loam	
12-17	7.5YR 5/3	100	–	–	–	–	sand	

[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: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No hydric soil indicators observed.

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: Pit w/n low spot of cracked soil area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Chuckwalla Valley Road - Acari Ditch City/County: Unincorporated / Riverside County Sampling Date: 2-27-19

Applicant/Owner: RCTD State: CA Sampling Point: SP4 - Acari

Investigator(s): Paul Schwartz Section, Township, Range: 530 T6S R18E

Landform (hillslope, terrace, etc.): Sandy wash Local relief (concave, convex, none): Flat Slope (%): —

Subregion (LRR): C-med Lat: 33.372952 Long: -115.085007 Datum: WGS 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

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

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

Remarks: Pit conducted at base of large Palo verde tree just us from bridge. Area has deep sandy soils. Meets vegetation due to FAC Paloverde. + Meets hydrology but determined to not be problematic due to lack of additional FAC+ vegetation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Parkensonia aculeata	45	Y	FAC
2.			
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. N/A			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. N/A			
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: 1 (A)

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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:

Acari

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-17	7.5YR 4/3	100					Sand	

[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: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: layer of asphalt/cobble @ ~12" depth. No hydric soil indicators observed.

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: Drift deposits + sediment deposition in area. Pit conducted in low flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Chuckwalla Valley Road – Aztec Ditch City/County: Unincorporated / Riverside County Sampling Date: 2-27-19

Applicant/Owner: RCTD State: CA Sampling Point: SP5 – Aztec

Investigator(s): Paul Schwartz Section, Township, Range: 35 T6S R17E

Landform (hillslope, terrace, etc.): sandy wash Local relief (concave, convex, none): flat Slope (%): —

Subregion (LRR): C-Med Lat: 33.4026667 Long: -115.35744 Datum: WGS 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No Are "Normal Circumstances" present? Yes ✓ No _____

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

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

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

Remarks: Pit conducted in sandy wash us of bridge adj to large Palo verde (FAC).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Parkinsonia aculeata	45	Y	FAC
2.			
3.			
4.			
	45 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. N/A			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. Perityle emoryii	10	Y	UPL
2. Pectocarya sp.	2	N	UPL
3. Phacelia distans	5	Y	UPL
4.			
5.			
6.			
7.			
8.			
	17 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. N/A			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust N/A

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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: Pit adjacent to large palo verde + some herbaceous veg. Majority of wash has sporadic herb cover.

SOIL

Sampling Point: 5

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
0-15	7.5YR 5/3	100	—	—	—	—	Sand	

[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: Cobble

Depth (inches): 15"

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed.

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: Large Sand wash upstream of bridge.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Chuckwalla Valley Road – Tarantula Ditch City/County: Unincorporated/ Riverside County Sampling Date: 2-27-19

Applicant/Owner: RCTD State: CA Sampling Point: SP6 - Tarantu

Investigator(s): Paul Schwartz Section, Township, Range: S9 T6S R17E

Landform (hillslope, terrace, etc.): Sandy wash Local relief (concave, convex, none): Flat Slope (%): —

Subregion (LRR): C-Med Lat: 33.394831 Long: -115.125265 Datum: WGS 84

Soil Map Unit Name: No soil data available NWI classification: R6

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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

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

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

Remarks: Pit conducted w/in sandy wash adjacent to large Palo verde tree (PAC).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parkinsonia aculeata	45	Y	FAC
2.			
3.			
4.			
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10)			
1. N/A			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5)			
1. Phacelia distans	2	Y	UPL
2.			
3.			
4.			
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: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species 45	x 3 =	135
FACU species ____	x 4 =	____
UPL species 2	x 5 =	10
Column Totals: 47 (A)		145 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50% No

___ Prevalence Index is ≤3.0[1] No

___ 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: <5% in herb layer.

Tarantula

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-15	7.5 YR 5/3	100	—	—	—	—	Sand	

[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: Cobble

Depth (inches): 15"

Hydric Soil Present? Yes ___ No ✓

Remarks: No hydric soil indicators observed

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: Sandy wash, adjacent to low flow channel.

Appendix E
Study Area Plant List

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Species	Common Name
Agavaceae	
Hesperocallis undulata	Desert lily
Aizoaceae	
Sesuvium verrucosum	Verrucose seapurslane
Apocynaceae	
Asclepias albicans	White stemmed milkweed
Funastrum hirtellum	Annual burrweed
Asteraceae	
Ambrosia acanthicarpa	Annual burrweed
Ambrosia dumosa	White bursage
Ambrosia salsola	Burrobrush
Atrichoseris platyphylla	Gravel ghost
Chaenactis carphoclinia var. carphoclinia	Pebble pincushion
Erigeron canadensis	horseweed
Geraea canescens	Desert sunflower
Malacothrix glabrata	Desert dandelion
Palafoxia arida var. arida	Desert needle
Pectis papposa	Many bristle pinchweed
Perityle emoryi	Emory's rock daisy
Boraginaceae	
Amsinckia tessellata	Bristly fiddleneck
Cryptantha angustifolia	Narrow leaved cryptantha
Cryptantha intermedia	Common cryptantha
Pectocarya sp.	Combseed
Phacelia crenulata var. minutiflora	Little flowered heliotrope phacelia
Brassicaceae	
Brassica tournefortii	Saharan mustard*
Hirschfeldia incana	Mediterranean hoary mustard*
Lepidium lasiocarpum	Shaggyfruit pepperweed*
Sisymbrium altissimum	Tumble mustard*
Sisymbrium irio	London rocket*
Caryophyllaceae	
Achyronychia cooperi	Frost mat
Loeflingia squarrosa	Spreading loeflingia
Chenopodiaceae	
Atriplex canescens	Fourwing saltbush
Chenopodium album	Lamb's quarters*
Salsola tragus	Russian thistle*
Cucurbitaceae	
Brandegea bigelovii	Desert star vine
Euphorbiaceae	
Euphorbia micromera	Sonoran sand mat
Euphorbia polycarpa	Smallseed sandmat
Euphorbia serpillifolia ssp. *hirtula*	Thyme-leafed spurge
Stillingia linearifolia	Linear leaved stillingia

Species	Common Name
Euphorbiaceae (continued)	
Stillingia spinulosa	Annual stillingia
Ditaxis neomexicana	Common ditaxis
Fabaceae	
Dalea mollis	Hairy prairie clover
Marina parryi	Parry delea
Olneya tesota	Desert ironwood
Parkinsonia florida	Blue palo verde
Psorothamnus spinosus	Smoke tree
Lamiaceae	
Condea emoryi	Desert lavender
Salvia columbariae	Chia
Loasaceae	
Mentzelia affinis	Yellow blazing star
Mentzelia involucrata	Bracted blazing star
Malvaceae	
Eremalche rotundifolia	Desert five spot
Nyctaginaceae	
Abronia villosa	Desert sand verbena
Allionia incarnata	Trailing allionia
Mirabilis laevis	Desert wishbone bush
Onagraceae	
Eremothera boothii	Booth's sun cup
Eremothera refracta	Narrow leaved primrose
Eulobus californicus	California primrose
Papaveraceae	
Eschscholzia minutiflora	Pygmy poppy
Plantaginaceae	
Plantago ovata	Desert indianwheat
Poaceae	
Bouteloua aristidoides var. aristidoides	Needle gama
Hilaria rigida	Big galleta
Schismus barbatus	Common Mediterranean grass*
Polemoniaceae	
Aliciella latifolia	Broad leaf gilia
Loeseliastrum schottii	Schott's calico
Polygonaceae	
Chorizanthe brevicornu	Brittle spineflower
Chorizanthe rigida	Devil's spineflower
Eriogonum reniforme	Kidney leaf buckwheat
Eriogonum thomasii	Thomas eriogonum
Resedaceae	
Oligomeris linifolia	Leaved cambess
Simmondsiaceae	
Simmondsia chinensis	jojoba

Species	Common Name
Solanaceae	
Nicotiana obtusifolia	Desert tobacco
Tamaricaceae	
Tamarix ramosissima	Saltcedar*
Zygophyllaceae	
Fagonia pachyacantha	Sticky fagonia
Larrea tridentata	Creosote

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Appendix F

Preliminary Jurisdictional Determination Form

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PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: | PJD Date: Feb 19, 2019

State: CA | City/County: Riverside

Nearest Waterbody: Palen Lake

Location: TRS, LatLong or UTM: 33.385074, -115.111127

Name/ Address of Person Requesting PJD:
Frances Segovia
Senior Transportation Planner
3525 14th Street
Riverside, CA 92501

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 6,725 linear ft | 225 width | 6.222 acres | Stream Flow: Ephemeral

Wetlands: 0 acre(s) | Cowardin Class: Riverine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: | Non-Tidal:

☐ Office (Desk) Determination
☑ Field Determination: Date of Field Trip: Feb 19, 2019

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☑ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☑ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Sidewinder Well and Aztec Mines
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey Geographic (SSURGO) Database for R
- ☑ National wetlands inventory map(s). Cite name: USFWS NWI Wetlands 2017
- ☐ State/Local wetland inventory map(s):
- ☑ FEMA/FIRM maps: FEMA Floodplain 2017
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): ESRI imagery 2016; Google Earth 2019
  - ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office	Los Angeles District	File/ORM #		PJD Date:	Feb 19, 2019
State	CA	City/County	Unincorporated area of Riverside County	Person Requestinq PJD	Frances Segovia

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
Aztec Di	33.402698	-115.135704	Riverine	1.859 acres	Non-Section 10 non-wetlanc
Tarantul	33.394941	-115.125201	Riverine	2.006 acres	Non-Section 10 non-wetlanc
Sutro Dit	33.39670	-115.113823	Riverine	1.026 acres	Non-Section 10 non-wetlanc
Acari Dit	33.372979	-115.84950	Riverine	1.331 acres	Non-Section 10 non-wetlanc

Notes:

APPENDIX G: SURVEY DATES AND PERSONNEL

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Table G-1. Survey Personnel and Qualifications

Personnel	Company	Years of Experience	Survey Performed
Marisa Flores	ICF	14 years of experience performing general biological assessments in Southern California. Experienced in conducting jurisdictional delineations and habitat evaluations for burrowing owl and least Bell's vireo.	Bat Habitat Assessment
Shannon Crossen	ICF	10 years of experience performing general biological assessments in Southern California. Experienced in habitat evaluations for burrowing owl, bats, and wildlife movement.	Bat Habitat Assessment
James Hickman	ICF	15 years of experience performing general biological assessments in Southern California for sensitive species. Performs surveys for burrowing owl, least Bell's vireo, bats, desert tortoise, rare plants, and jurisdictional delineations.	Bat Emergence Survey, Jurisdictional Delineation, Desert Tortoise Survey
Camilla Estes	ICF	5 years of experience performing general biological assessments and general biological surveys. Performs surveys for small mammals, nesting birds, burrowing owl, and desert tortoise.	Burrowing Owl Habitat Assessment, Burrowing owl Focused survey, Desert Tortoise Survey
Shawn Johnston	ICF	8 years of experience performing botanical surveys.	Rare Plant Survey
Kolby Olson	BRC*	8 years of experienced conducting general biological surveys, construction monitoring, burrowing owl focused surveys, and nesting bird surveys.	Burrowing Owl Habitat Assessment.
Francis Lin	ICF	6 years of experience conducting general biological surveys. Performs surveys for rare plants, burrowing owl, desert tortoise, and jurisdictional delineations.	Desert Tortoise Survey
Dennis Miller	URS	15 years of experience performing general biological assessments in Southern California for sensitive species. Performs surveys for burrowing owl, least Bell's vireo, bats, desert tortoise, and conducts jurisdictional delineations.	Bat Emergence Survey
Will Kohn	ICF	20 years of experience performing general biological surveys, habitat assessments, and biological monitoring. Performs focused surveys for burrowing owl, Swainson's hawk, California red-legged frog, and bats.	Bat Emergence Survey, Burrowing Owl Survey
Marissa Maggio	ICF	6 years of experience performing general biological surveys, wildlife/construction monitoring, nesting bird surveys, jurisdictional delineations, and rare plant surveys	Bat Emergence Survey
Danny Cuellar	SWCA*	5 years of experience conducting general biological surveys.	Desert Tortoise Survey
Lance Wooley	ICF	15 years of experience performing biological and botanical surveys.	Rare Plant Survey

Personnel	Company	Years of Experience	Survey Performed
Ryan Layden	ICF	8 years of experience performing general biological assessments in Southern California for sensitive species, including burrowing owl, riparian birds, and desert tortoise.	Desert Tortoise Survey
Shelly Dayman	ICF	10 plus years of experience general biological surveys	Desert Tortoise
Paul Schwartz	ICF	15 years of experience performing biological surveys, jurisdictional delineations, rare plant surveys, and restoration projects.	Jurisdictional Delineation
Kristen Klinefelter	ICF	6 years conducting general biological surveys, jurisdictional delineation, restoration monitoring, and rare plant surveys	Jurisdictional Delineation

*BRC- BioResource Consultants, SWCA – Steven W. Carothers & Associates

Table G-2. Survey Dates, Types, Weather, and Personnel Aztec Ditch Bridge (#56C0102)

Dates	Survey Type	Weather Conditions	Personnel
2017			
4/10/2017	Burrowing Owl Habitat Assessment and Focused Survey #1	Time 0830–1000, Temperature 67ºF, Wind 6 mph, Cloud Cover 1%	Kolby Olson and Camilla Estes
5/08/2017	Desert Tortoise Focused Survey	Time 0923-1256, Temperature 70-80 ºF, Wind 1-6 mph, Cloud Cover 5-30%	Shelly Dayman, Danny Cuellar, and Camilla Estes
5/11/2017	Burrowing Owl Focused Survey #2	Time 1850–1950, Temperature 88–91ºF, Wind, 1–3 mph, Cloud Cover 10%	Will Kohn and Ryan Layden
5/12/2017	Rare Plant Survey (Spring)	N/A	Shawn Johnston and Lance Wooley
6/15/2017	Burrowing Owl Focused Survey #3	Time 1750–1850, Temperature 110ºF, Wind 5–10 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
6/27/2017	Bat Habitat Assessment	N/A	Marisa Flores and Shannon Crossen
7/13/2017	Burrowing Owl Focused Survey #4	Time 0845–0940, Temperature 87°F, Wind 5–10 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
7/19/2017	Bat Emergence Survey		Will Shtanke and Dennis Miller
7/21/2017	Rare Plant Survey #2 (Summer)	N/A	Shawn Johnston and Lance Wooley
10/20/2017	Rare Plant Survey #3 (Fall)	N/A	Shawn Johnston and Lance Wooley
2019			
2/19/2019	Jurisdictional Delineation	N/A	Paul Schwartz and Kristen Klinefelter
2/27/2019	Jurisdictional Delineation	N/A	Paul Schwartz and Kristen Klinefelter
4/16/2019	Desert Tortoise Focused Survey	Time 0815-1345, Temperature 68-75°F, Wind 0-3 mph, Cloud Cover 90%	James Hickman and Frances Lin

Dates	Survey Type	Weather Conditions	Personnel
4/29/2019	Habitat Assessment & Rare Plant Survey (Spring)	N/A	Shawn Johnston

Table G-3. Survey Dates, Types, Weather, and Personnel Tarantula Ditch Bridge (#56C0103)

Dates	Survey Type	Weather Conditions	Personnel
2017			
4/10/2017	Burrowing Owl Habitat Assessment and Focused Survey #1	Time 0730–0830, Temperature 63ºF, Wind 6 mph, Cloud Cover 2%	Kolby Olson and Camilla Estes
5/08/2017	Desert Tortoise Focused Survey	Time 1305-1600, Temperature 80-88°F, Wind 1-6 mph, Cloud Cover 30-45%	Shelly Dayman, Danny Cuellar, and Camilla Estes
5/11/2017	Burrowing Owl Focused Survey #2	Time 1730–1835, Temperature 91ºF, Wind, 1–7 mph, Cloud Cover 10%	Will Kohn and Ryan Layden
5/12/2017	Rare Plant Survey (Spring)	N/A	Shawn Johnston and Lance Wooley
6/15/2017	Burrowing Owl Focused Survey #3	Time 1855–1950, Temperature 108ºF, Wind 5–10 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
6/27/2017	Bat Habitat Assessment	N/A	Marisa Flores and Shannon Crossen
7/13/2017	Burrowing Owl Focused Survey #4	Time 0745–0835, Temperature 85°F, Wind 0–5 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
7/19/2017	Bat Emergence Survey	N/A	Will Kohn and Kolby Olson
7/21/2017	Rare Plant Survey #2 (Summer)	N/A	Shawn Johnston and Lance Wooley
10/20/2017	Rare Plant Survey #3 (Fall)	N/A	Shawn Johnston and Lance Wooley
2019			
2/19/2019	Jurisdictional Delineation	N/A	Paul Schwartz and Kristen Klinefelter
2/27/2019	Jurisdictional Delineation	N/A	Paul Schwartz and Kristen Klinefelter
4/16/2019	Desert Tortoise Focused Survey	Time 0815-1345, Temperature 68-75°F, Wind 0-3 mph, Cloud Cover 90%	James Hickman and Frances Lin
4/29/2019	Habitat Assessment & Rare Plant Survey (Spring)	N/A	Shawn Johnston

Table G-4. Survey Dates, Types, Weather, and Personnel Sutro Ditch Bridge (#56C0104)

Dates	Survey Type	Weather Conditions	Personnel
2017			
4/10/2017	Burrowing Owl Habitat Assessment and Focused Survey #1	Time 0700–0730, Temperature 50ºF, Wind 5 mph, Cloud Cover 3%	Kolby Olson and Camilla Estes
5/08/2017	Desert Tortoise Focused Survey	Time 1605-1655, Temperature 88-83°F, Wind 1-2mph, Cloud Cover 45-40%	Shelly Dayman, Danny Cuellar, and Camilla Estes

Dates	Survey Type	Weather Conditions	Personnel
5/10/2017	Burrowing Owl Focused Survey #2	Time 1830–1852, Temperature 81–79ºF, Wind 3–6 mph, Cloud Cover 0%	Will Kohn and Ryan Layden
5/12/2017	Rare Plant Survey (Spring)	N/A	Shawn Johnston and Lance Wooley
6/01/2017	Burrowing Owl Focused Survey #3	Time 1746–1852, Temperature 94°F, Wind 5–8 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
6/27/2017	Bat Habitat Assessment	n/a	Marisa Flores and Shannon Crossen
6/28/2017	Burrowing Owl Focused Survey #4	Time 0855–0950, Temperature 90°F, Wind 5–10 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
7/18/2017	Bat Emergence Survey	n/a	Dennis Miller and Cara Snellen
7/21/2017	Rare Plant Survey #2 (Summer)	n/a	Shawn Johnston and Lance Wooley
10/20/2017	Rare Plant Survey #3 (Fall)	n/a	Shawn Johnston and Lance Wooley
2019			
2/27/2019	Jurisdictional Delineation	n/a	Paul Schwartz and Kristen Klinefelter
4/16/2019	Desert Tortoise Focused Survey	Time 0815-1345, Temperature 68-75°F, Wind 0-3 mph, Cloud Cover 90%	James Hickman and Frances Lin
4/29/2019	Habitat Assessment & Rare Plant Survey (Spring)	n/a	Shawn Johnston

Table G-5. Survey Dates, Types, Weather, and Personnel Acari Ditch Bridge (#56C0108)

Dates	Survey Type	Weather Conditions	Personnel
2017			
4/10/2017	Burrowing Owl Habitat Assessment and Focused Survey #1	Time 0615–0700, Temperature 49°F, Wind 5 mph, Cloud Cover 1%	Kolby Olson and Camilla Estes
5/03/2017	Desert Tortoise Focused Survey	Time 0800-1510, Temperature 79-86°F, Wind 1-15 mph, Cloud Cover 0%	Ryan Layden and Camilla Estes
5/11/2017	Burrowing Owl Focused Survey #2	Time 1730–1830, Temperature 81–84º, Wind 3–6 mph, Cloud Cover 10%	Will Kohn and Ryan Layden
5/12/2017	Rare Plant Survey (Spring)	N/A	Shawn Johnston and Lance Wooley
6/01/2017	Burrowing Owl Focused Survey #3	Time 1902–1958, Temperature 90ºF, Wind 3–7 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
6/27/2017	Bat Habitat Assessment	N/A	Marisa Flores and Shannon Crossen
6/28/2017	Burrowing Owl Focused Survey #4	Time 0745–0845, Temperature 89°F, Wind 0–5 mph, Cloud Cover 0%	Ryan Layden and Danny Cuellar
7/18/2017	Bat Emergence Survey	N/A	Will Kohn and Will Shtanke
7/21/2017	Rare Plant Survey #2 (Summer)	N/A	Shawn Johnston and Lance Wooley
10/20/2017	Rare Plant Survey #3 (Fall)	N/A	Shawn Johnston and Lance Wooley
2019			

2/27/2019	Jurisdictional Delineation	N/A	Paul Schwartz and Kristen Klinefelter
4/16/2019	Desert Tortoise Focused Survey	Time 0815-1345, Temperature 68-75°F, Wind 0-3 mph, Cloud Cover 90%	James Hickman and Frances Lin
4/29/2019	Habitat Assessment & Rare Plant Survey (Spring)	N/A	Shawn Johnston

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APPENDIX H: SITE PHOTOS FOR THE CHUCKWALLA VALLEY ROAD BRIDGES (#56C0102, #56C0103, #56C0104, AND #56C0108)

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Appendix H. Site Photographs for the Chuckwalla Valley Road Bridges (#56C0102, #56C0103, #56C0104, and #56C0108)

Photo 1. View southwest of Aztec Ditch Bridge (#56C0102) and the desert wash.

Photo 2. View of the timber bridge at Aztec Ditch.

Photo 3. View of Chuckwalla Valley Road at Aztec Ditch Bridge (#56C0102).

Photo 4. View north from Aztec Ditch Bridge (#56C0102) and the desert wash.

Photo 5. View southwest of Tarantula Ditch Bridge #56C0103) and the desert wash under the existing timber bridge.

Photo 6. View of existing bridge footings at Tarantula Ditch Bridge (#56C0103).

Photo 7. View of Sutro Ditch Bridge (#56C0104).

Photo 8. View of Chuckwalla Valley Road adjacent to Sutro Ditch Bridge (#56C0104).

Photo 9. View downstream of the Acari Ditch Bridge (#56C0108).

Photo 10. View of creosote bush scrub habitat, Acari Ditch Bridge (#56C0108) facing northeast.

Photo 11. View of vegetated portions of the desert wash from Acari Ditch Bridge (#56C0108). Diversion dikes are present in along the banks of the wash. Facing west.

Photo 12. View north from Sutro Ditch Bridge (#56C0104) of the creosote bush scrub habitat.