

Site visit summary of the former Mitigations Land Trust (MLT) property along Reach 2B of the San Joaquin River.

From: Joel Sturm, Geologist; Matthew Merson, Geologist (MP-230)

Date of visit: July 05, 2019

Purpose of visit: To document the recent repairs completed June 2019, and the condition of the MLT property in response to the repairs.

Summary: Previous site visits to the MLT property have occurred on September 14, 2018, November 07, 2018, and April 22, 2019 with the conditions during each visit documented by photographs and summary reports (Reference 1 and 2). Photos 1-8 (attached) display the condition of the field during previous site visits as compared to the most recent conditions.

As previously documented, the main issue effecting the MLT property was flooding. Flooding of the property occurred when water—previously contained within an earthen lined ditch that enveloped the southern and western portion of the property—breached an inner berm that separated the ditch from the field. The water breached the inner berm due to the water level within the ditch rising to an elevation higher than the top of the inner berm. Water from the Mendota Pool was entering the ditch through an identified breach in the outer berm which was designed to contain the river right portion of the Mendota Pool. This breach, initially described as Seep #2, was never observed visually due to its inaccessibility yet was interpreted to be the main source of water that entered the ditch.

To stop the flooding of the property, a repair design was developed by personnel within the San Joaquin River Restoration Program Office, the Mid-Pacific Geology Branch, and the Mid-Pacific Construction Office. Repairs were initiated on May 4 and 5 and discontinued a week later due to non-performance by the contractor who was then terminated. Conditions observed on May 4 and 5 (Reference 3) were very similar to those observed on April 22 (Photos 1-8). A second contractor was brought in and successfully completed all desired repairs to the former MLT property during June 2019. Henry Garcia from the Mid-Pacific Construction Office oversaw all the work for these repairs and directed the contractor in all construction efforts.

The recent repairs that were completed included the following:

1. Rebuilding and resurfacing Columbia Road (Photo 10)
2. Rebuilding and resurfacing the inner berm (Photo 10)
3. Installing an earthen filled plug to the outer berm breach (Photo 9)
4. Installing a 45° angle to the HDPE pipe that drains the ditch (Photo 4 in additional photos)

Two factors were key to the successful repair:

1. A competent contractor
2. The lowering of the Mendota Pool water surface which eliminated flow into the perimeter ditch and into the former MLT field

The repairs that were made completely and effectively resolved all previously identified issues associated with the MLT property (Photos 1-11; 1-18 in additional photos).

On July 05, 2019, the Mendota Pool staff gauge measured the pool at 13.60 feet (elevation 153.236 feet) . The conditions of the MLT property on this day were as follows:

1. The former MLT field was dry with evidence of recent agricultural disking.
2. The ditch was approximately 80% drained with localized areas of standing water with unknown depth.
3. On July 5, a small amount of seepage entered the southside ditch near its midpoint and flowed downstream (west) (Photo 13 in additional photos). The southside ditch was dry upstream (east) of the midpoint.
4. The outer berm plug had completely shut off any surface communication with the Mendota Pool.
5. The inner berm was passable with a large vehicle or equipment and was a few feet higher in elevation than its original height above the MLT field.
6. Columbia Road was also a few feet higher in elevation and has a fine gravel surface.
7. The area around the previously installed well, designed for future pump out tests, was dry and accessible by vehicles and equipment.

Future Recommendations:

It is now known that the condition of the outer berm is poor to very poor due to dense overgrowth of vegetation and the presence of rodent burrows. It is recommended that this site be monitored regularly to identify if any new breaches occur within the outer berm. A breach of the outer berm will be evidenced by water flowing into and through the ditch, and the location of the breach should be identified visually or audibly. **If a future breach of the outer berm occurs, it is recommended to repair the breach with an earthen plug as immediately as possible.**

References (Available upon request):

1. Bureau of Reclamation, *Investigation of the formerly named Mitigation Lands Trust (MLT) field along Reach 2B of the San Joaquin River*, Travel Report by Matthew Merson, October 1, 2018.
2. Bureau of Reclamation, *Site visit summary of the former Mitigations Land Trust (MLT) property along Reach 2B of the San Joaquin River*, Travel Report by Matthew Merson, November 07, 2018.
3. Bureau of Reclamation, *MLT REPAIR*, Daily construction report by Joel Sturm, May 04-05, 2019.

Attachments:

Photos 1-11, taken by M. Merson.

Additional photos, 1-18, taken by J. Sturm.



Photo 1

Looking to the south of the former MLT property, inner berm, and western most ditch.

M. Merson

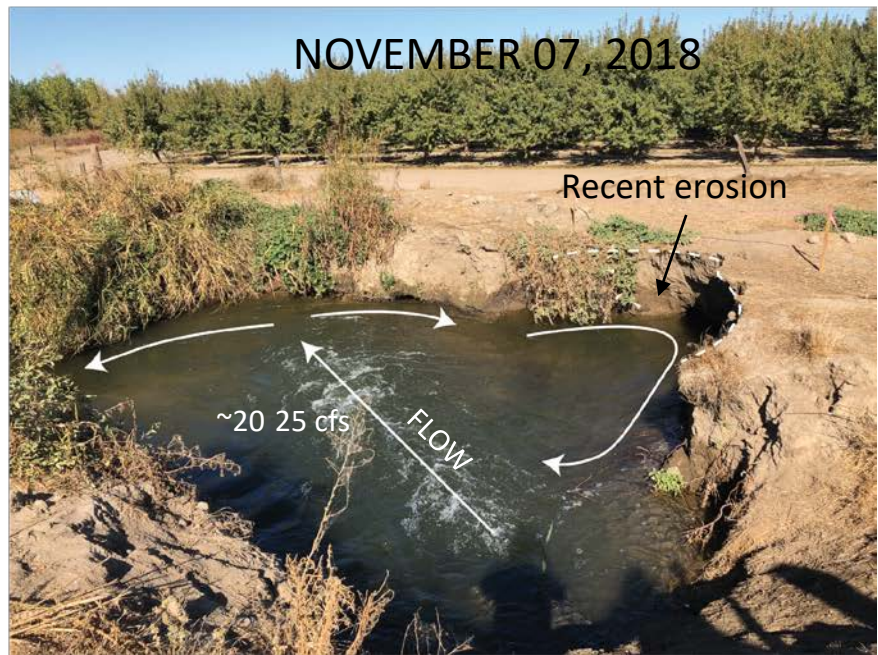


Photo 2 Looking north at the discharge area of the drainage ditch. The HDPE pipe crosses beneath Columbia Road in the northwest corner of the property and was recently modified with a 45° bend to direct any future flow away from the armor lined embankment.

M. Merson

APRIL 22, 2019



JULY 05, 2019

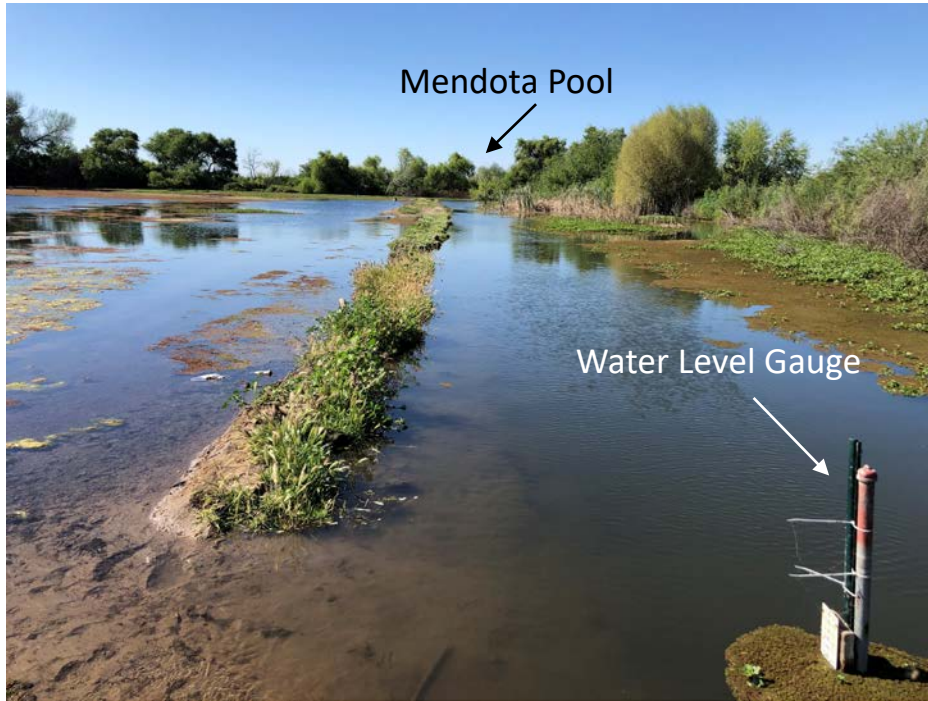


Photo 3

Looking east towards Columbia Road and the former MLT property.

M. Merson

APRIL 22, 2019



JULY 05, 2019



Photo 4

Looking south along the western most drainage ditch.

M. Merson

APRIL 22, 2019



JULY 05, 2019

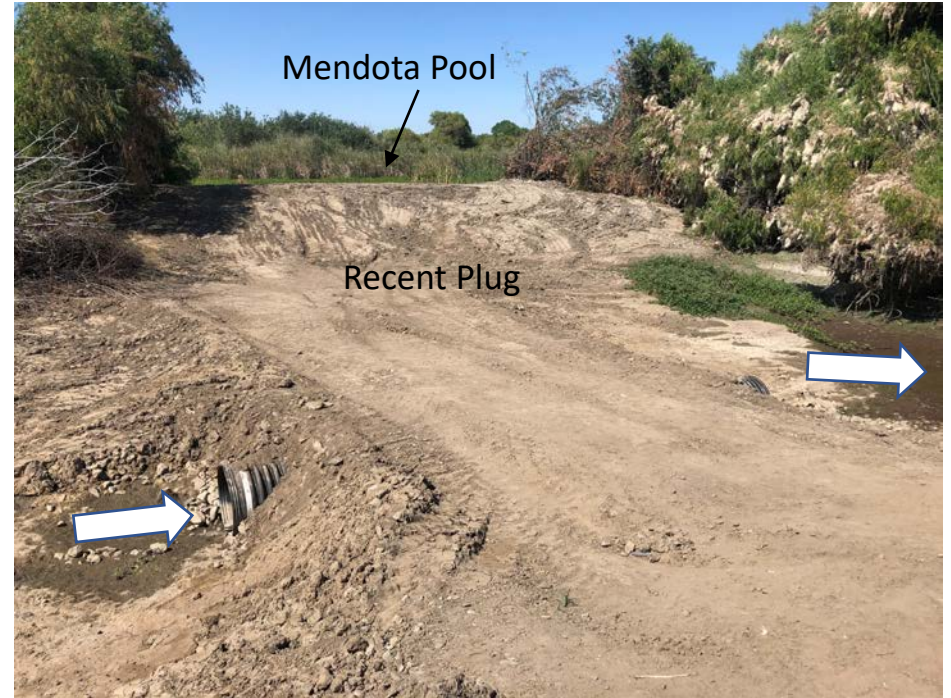
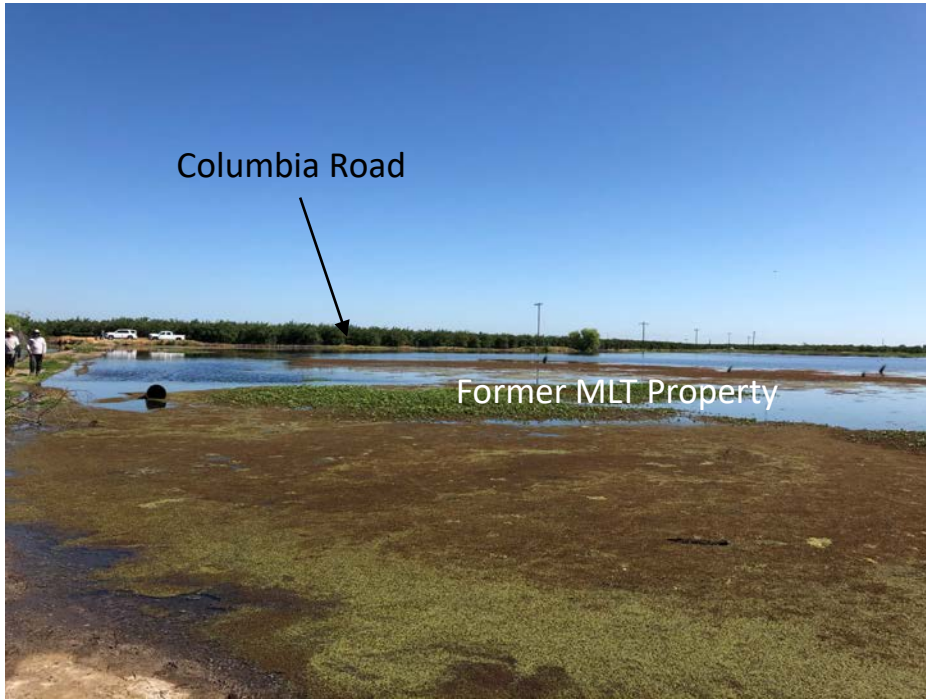


Photo 5

Looking south from the southwest corner of the property. This area was originally described as "Seep #2" as this was the location where the outer berm was breached and allowed water from the Mendota Pool to flow into the ditch. The recent plug repaired the outer berm in this location and the HDPE allows for the ditch to remain functional.

M. Merson

APRIL 22, 2019



JULY 05, 2019



Photo 6

Looking north from the southwest corner of the property.

M. Merson

APRIL 22, 2019



JULY 05, 2019



Photo 7

Looking east from the southwest corner of the property. The vehicle in the right photograph is parked on the inner berm which separates the ditch from the former MLT field. This inner berm was breached when the ditch was filled beyond capacity – allowing for water to flow freely into the former MLT field.

M. Merson

APRIL 22, 2019



JULY 05, 2019



Photo 8

Looking northeast from the southwest corner of the property.

M. Merson



Photo 9

Photographs of the recent plug constructed to repair the outer berm and stop Seep #2.

M. Merson
July 5, 2019

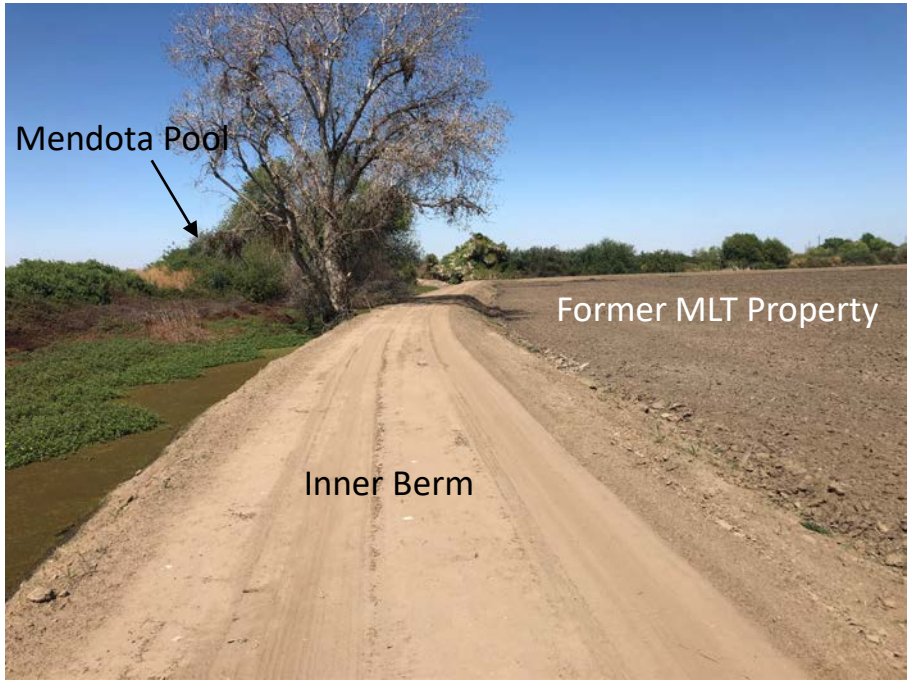
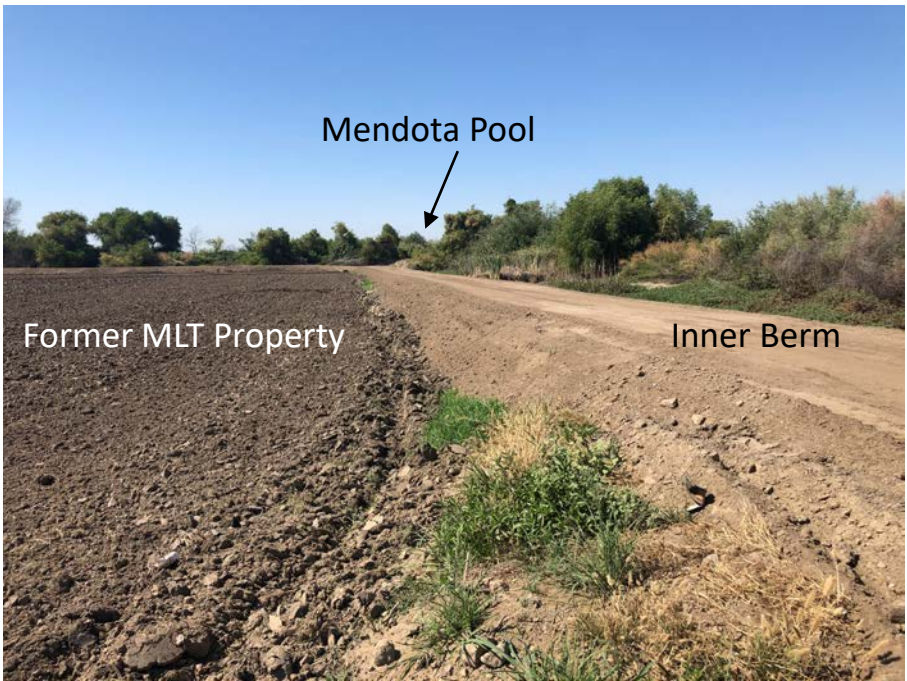


Photo 10

Photographs of the recent repairs to Columbia Road and the inner berm.

M. Merson
July 5, 2019

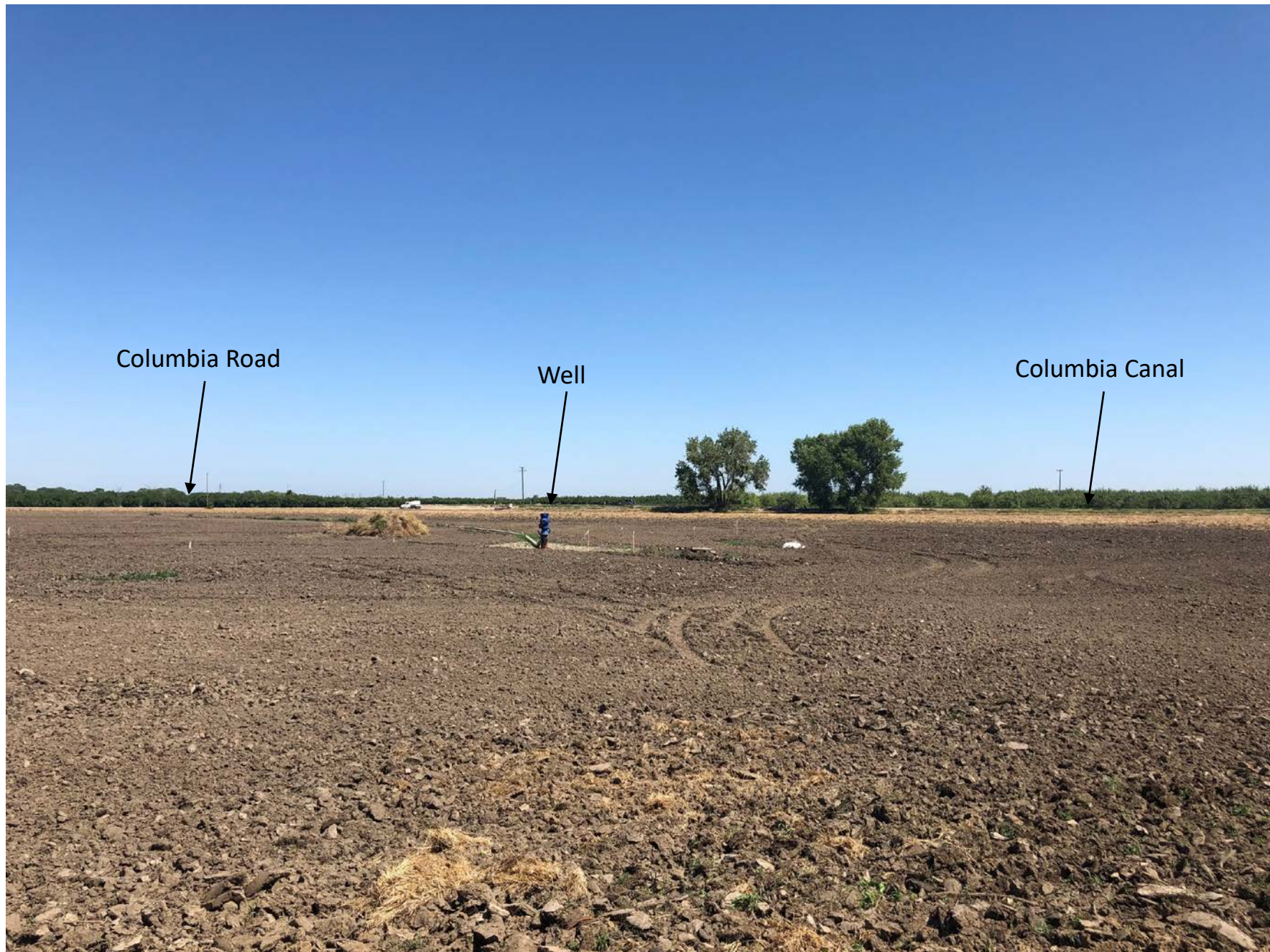


Photo 11

Well that was installed during the fall of 2018 for future pump out tests. As of July 05, 2019, the area around the well was dry and accessible by vehicles.

M. Merson
July 5, 2019

ADDITIONAL PHOTOS

MLT REPAIRS

July 5, 2019



Photo 1

J. Sturm

DISCHARGE CULVERT NW CORNER

MLT Repairs

July 5, 2019



Photo 2

INLET DISCHARGE CULVERT

J. Sturm

**MLT Repairs
NW CORNER**

July 5, 2019



Photo 3

J. Sturm

WESTERN DITCH

MLT Repairs

July 5, 2019



Photo 4

MLT Repairs

**OUTLET DISCHARGE CULVERT AND DISCHARGE CHANNEL
NW CORNER**

J. Sturm

July 5, 2019



Photo 5

J. Sturm

MLT FROM NW CORNER

MLT Repairs

July 5, 2019



Photo 6

J. Sturm

MLT FROM NW CORNER

MLT Repairs

July 5, 2019

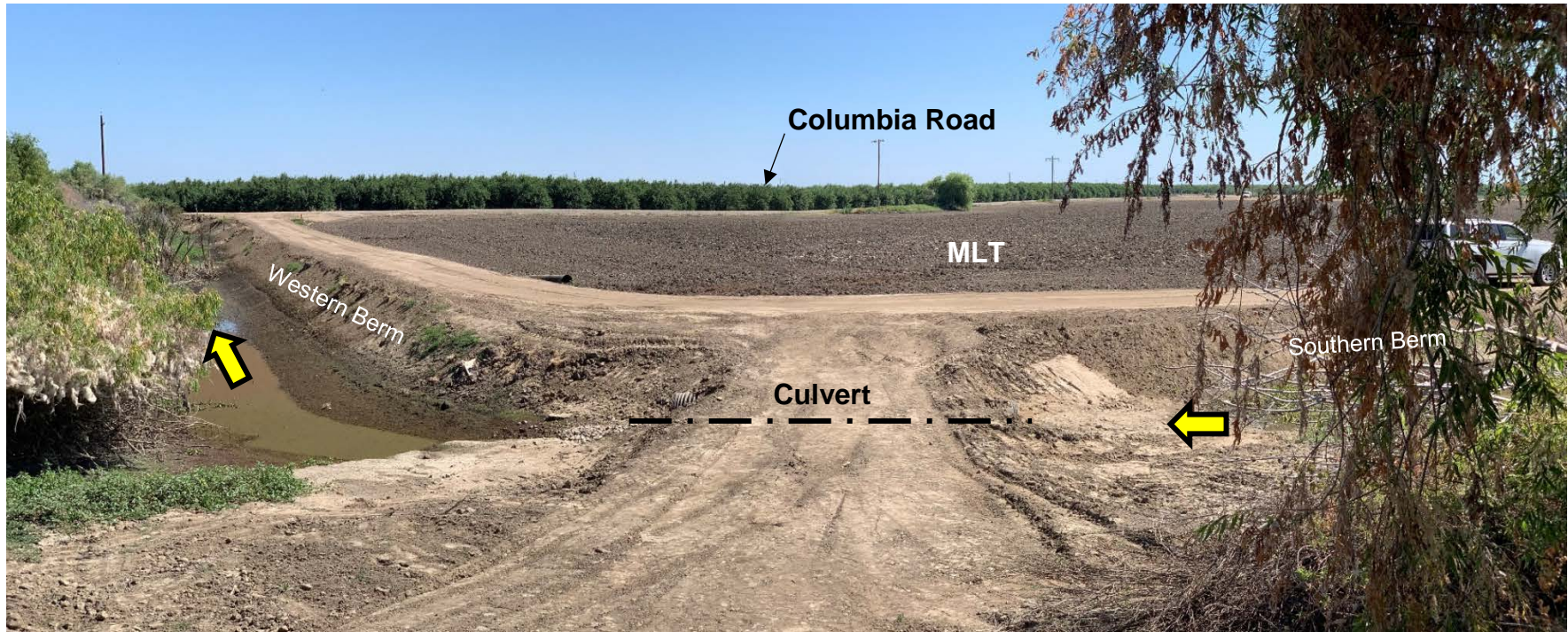


Photo 7

J. Sturm

CULVERT

SW CORNER

MLT Repairs

July 5, 2019



Photo 8

J. Sturm

CULVERT

SW CORNER

MLT Repairs

July 5, 2019



Photo 9

J. Sturm

SEEP #2 REPAIR

SW CORNER

MLT Repairs

July 5, 2019



Photo 10

MLT AND SOUTHERN BERM FROM SW CORNER

MLT Repairs

J. Sturm

July 5, 2019



Photo 11

J. Sturm

SOUTHERN BERM AND DITCH FROM SW CORNER

MLT Repairs

July 5, 2019



Photo 12

J. Sturm

SOUTHERN BERM AND SW CORNER

MLT Repairs

July 5, 2019



Photo 13

J. Sturm

SOUTHERN DITCH

MLT Repairs

July 5, 2019

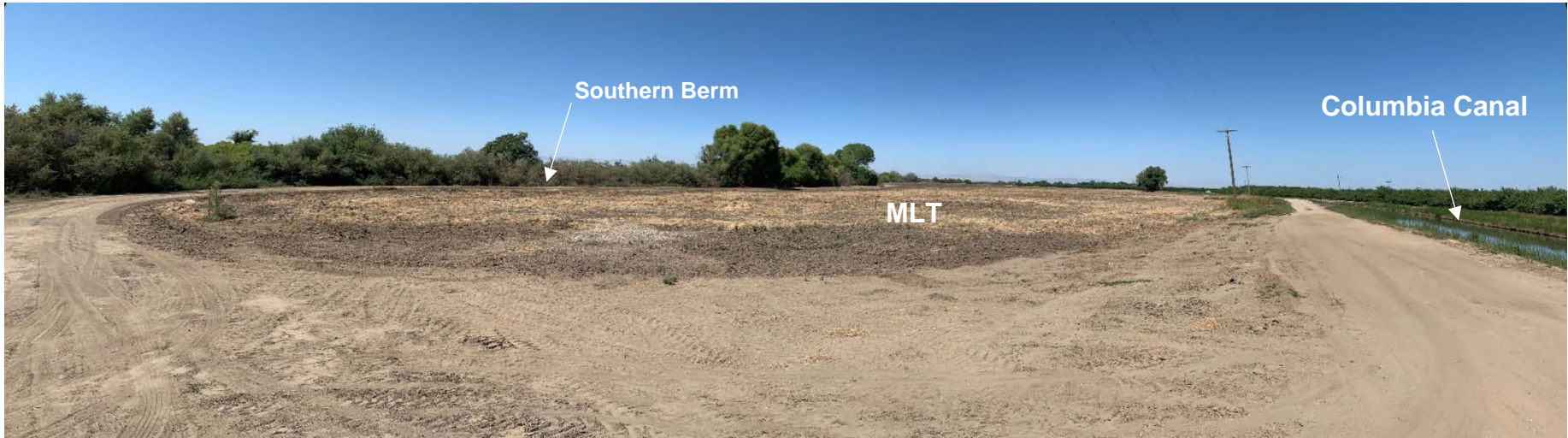


Photo 14

J. Sturm

EASTERN END MLT

MLT Repairs

July 5, 2019



Photo 15

J. Sturm

RESTORED BORROW AREA

MLT Repairs

July 5, 2019



Photo 16

J. Sturm

RESTORED BORROW AREA

MLT Repairs

July 5, 2019



Photo 17

J. Sturm

MENDOTA DAM AND POOL

MLT Repairs

July 5, 2019



Photo 18

MENDOTA POOL FROM DAM

MLT Repairs

J. Sturm

July 5, 2019