



OESTE GROUNDWATER RECHARGE UPDATE

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Wednesday, Aug 23, 2023



Why?

Long-term groundwater declines led to the 1996 Mojave Basin Area Judgment with an obligation to import supplemental water supplies to the Oeste Subarea



OVERVIEW

- **Project Location**
- **Preliminary Investigations**
- **Geophysical Surveys**
- **Percolation Testing**
- **Monitoring Well Installation**
- **Preliminary Design**
- **Request for Proposals (RFP)**
- **Facility Construction**



OESTE

ALTO TZ

Mojave River Pipeline

Adelanto

Apple Valley

ALTO
Victorville

ESTE

Oeste
Proposed
Site

18

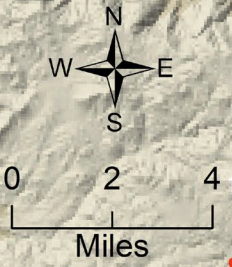
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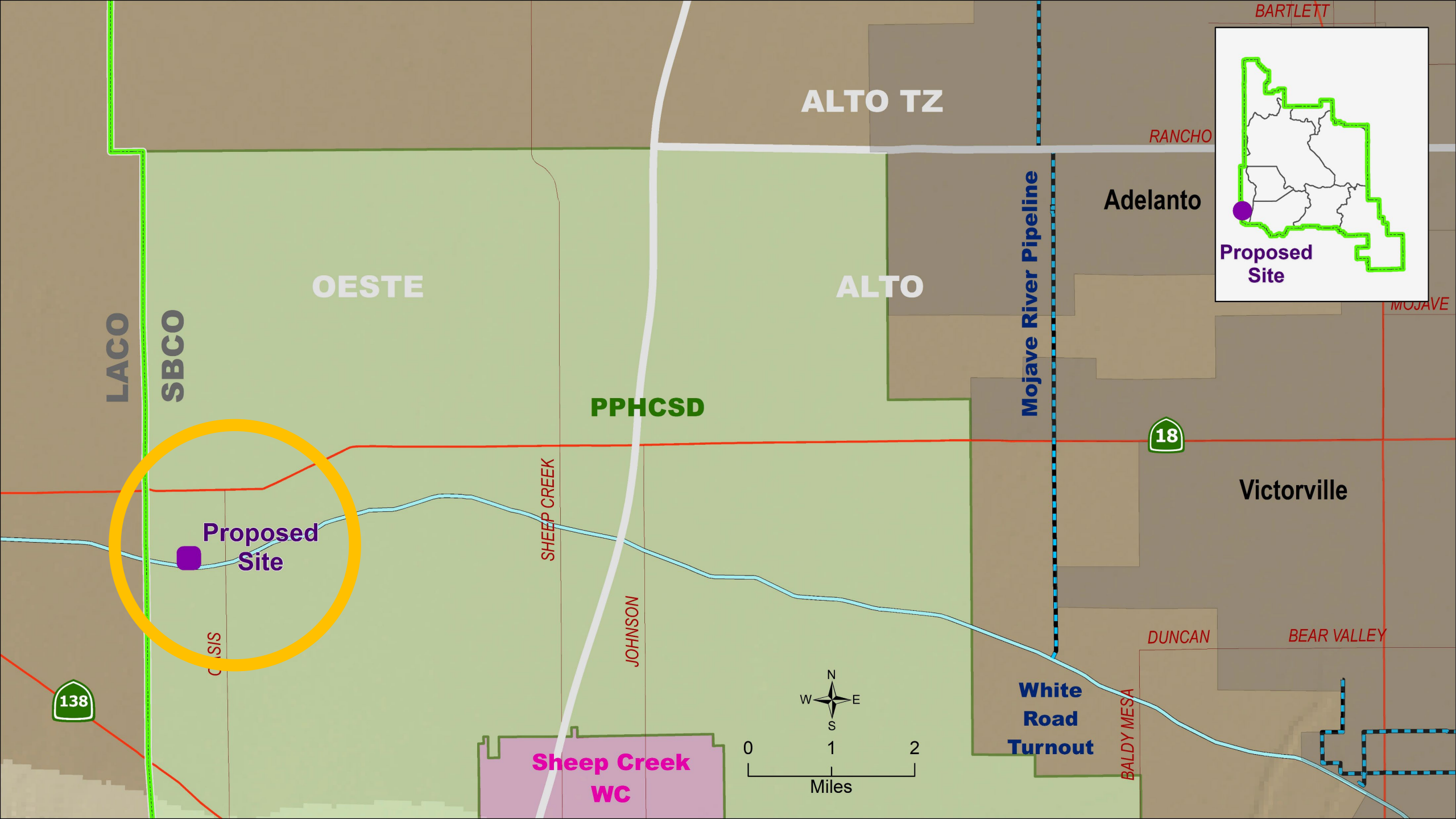
18

247

Morongo Basin Pipeline

Hesperia





PPHCSD Production Wells

Wells 10,11,12

18

~4,400 ft

Wells 14

~2,700 ft

OASIS

~4,700 ft

Wells 6A, 6B

ALTA VISTA

LUNA

MOUNTAIN

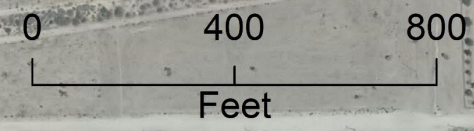
OLIVERA

OASIS

CAYUCOS

CA AQUEDUCT

LA MESA



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Wells 6A, 6B

OLIVERA

OASIS

EDUCT

00 800
feet



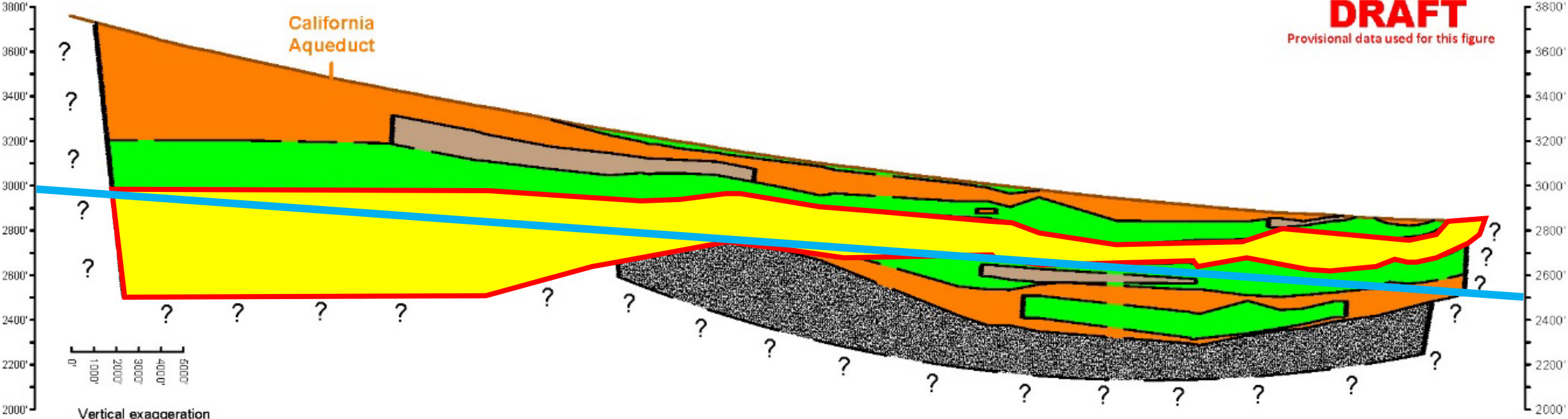
South

North

DRAFT

Provisional data used for this figure

California
Aqueduct



0 1000' 2000' 3000' 4000' 5000'

Vertical exaggeration =10:1

Mixed



Sand

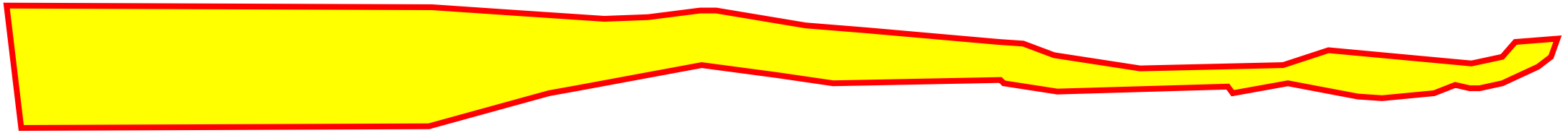


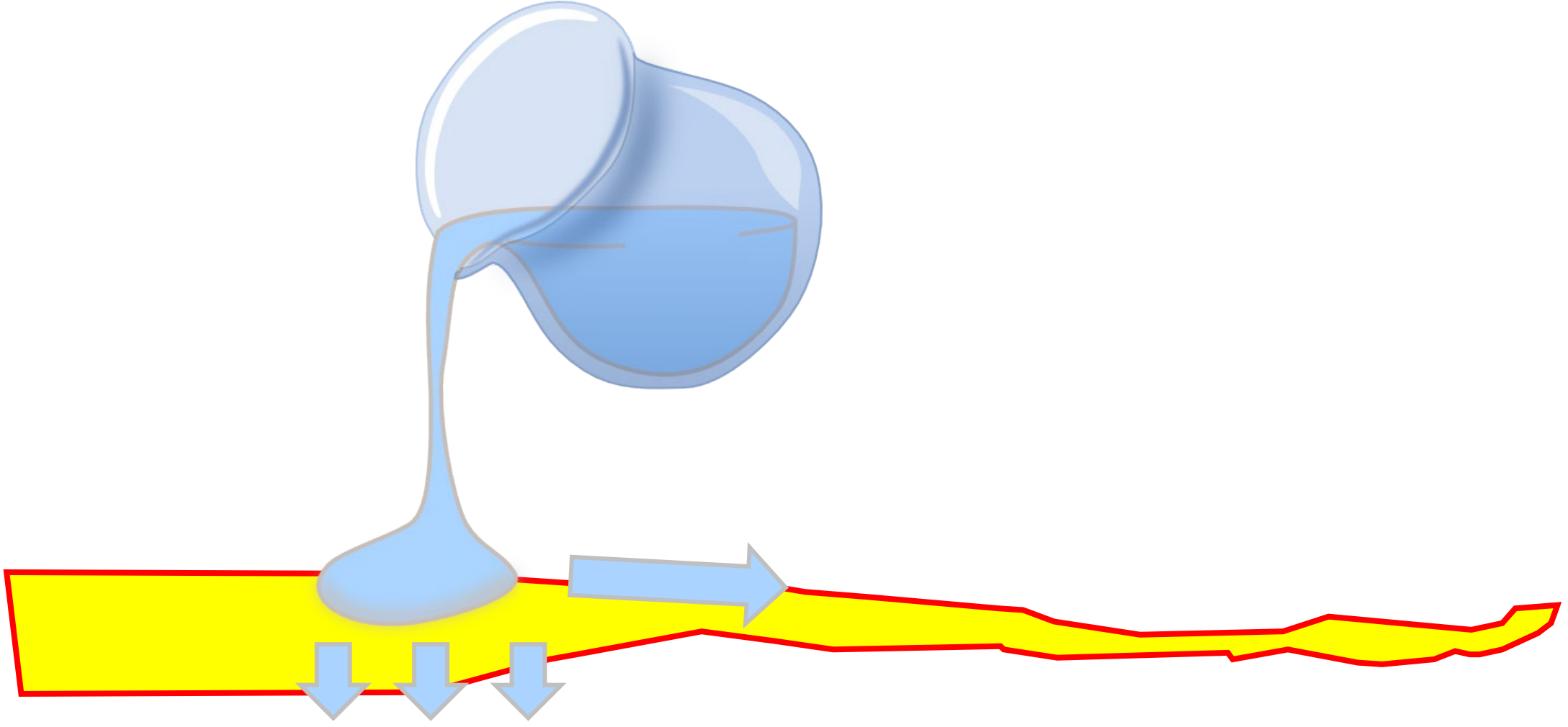
Clay



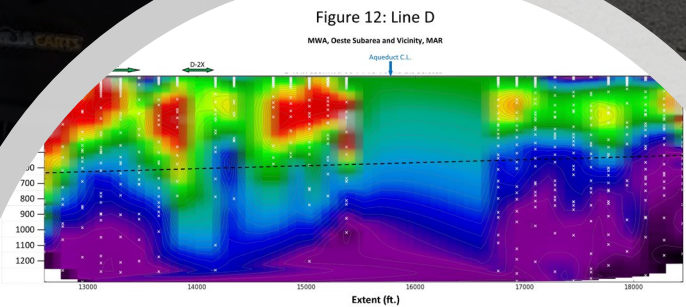
Bedrock







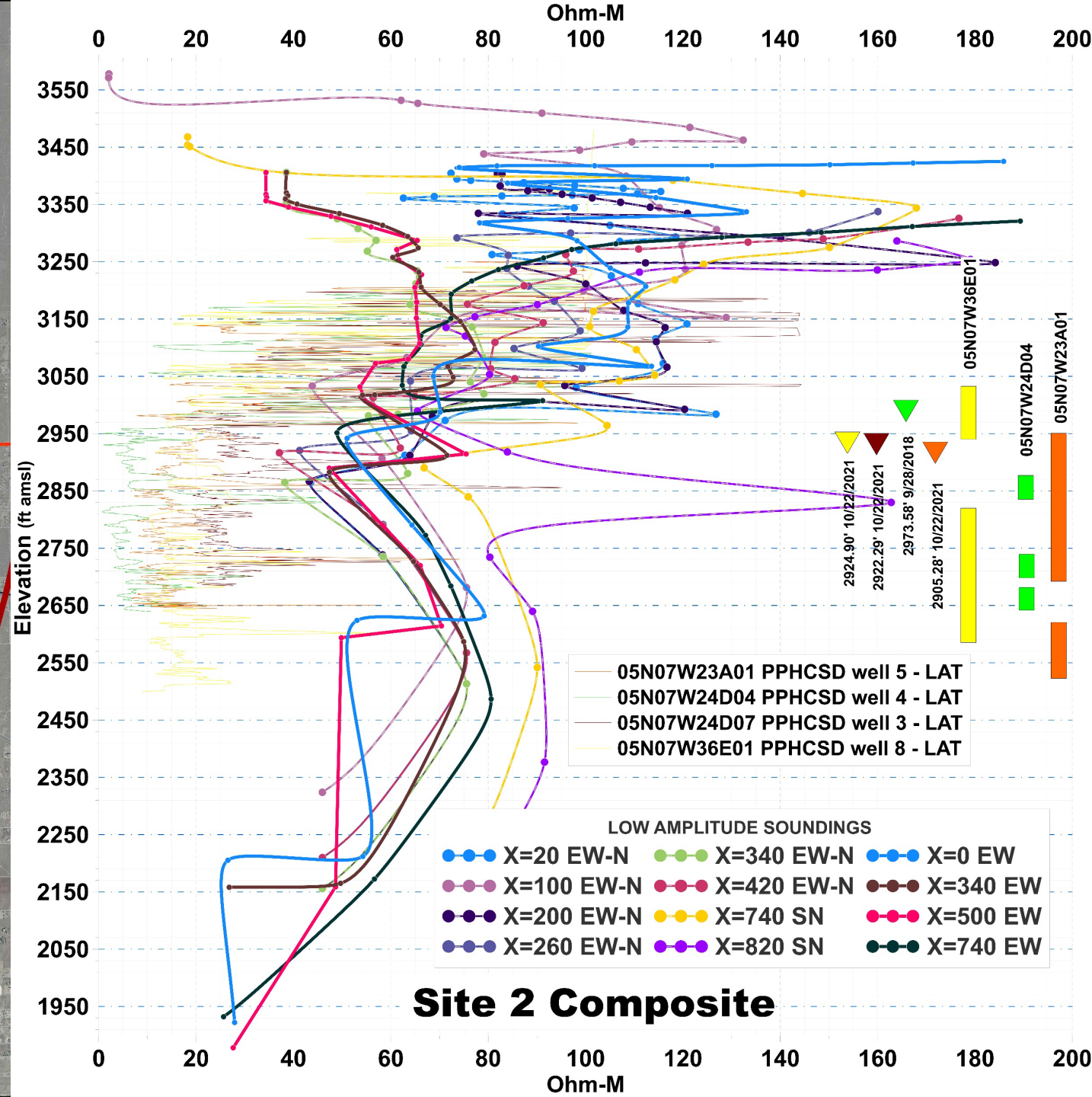
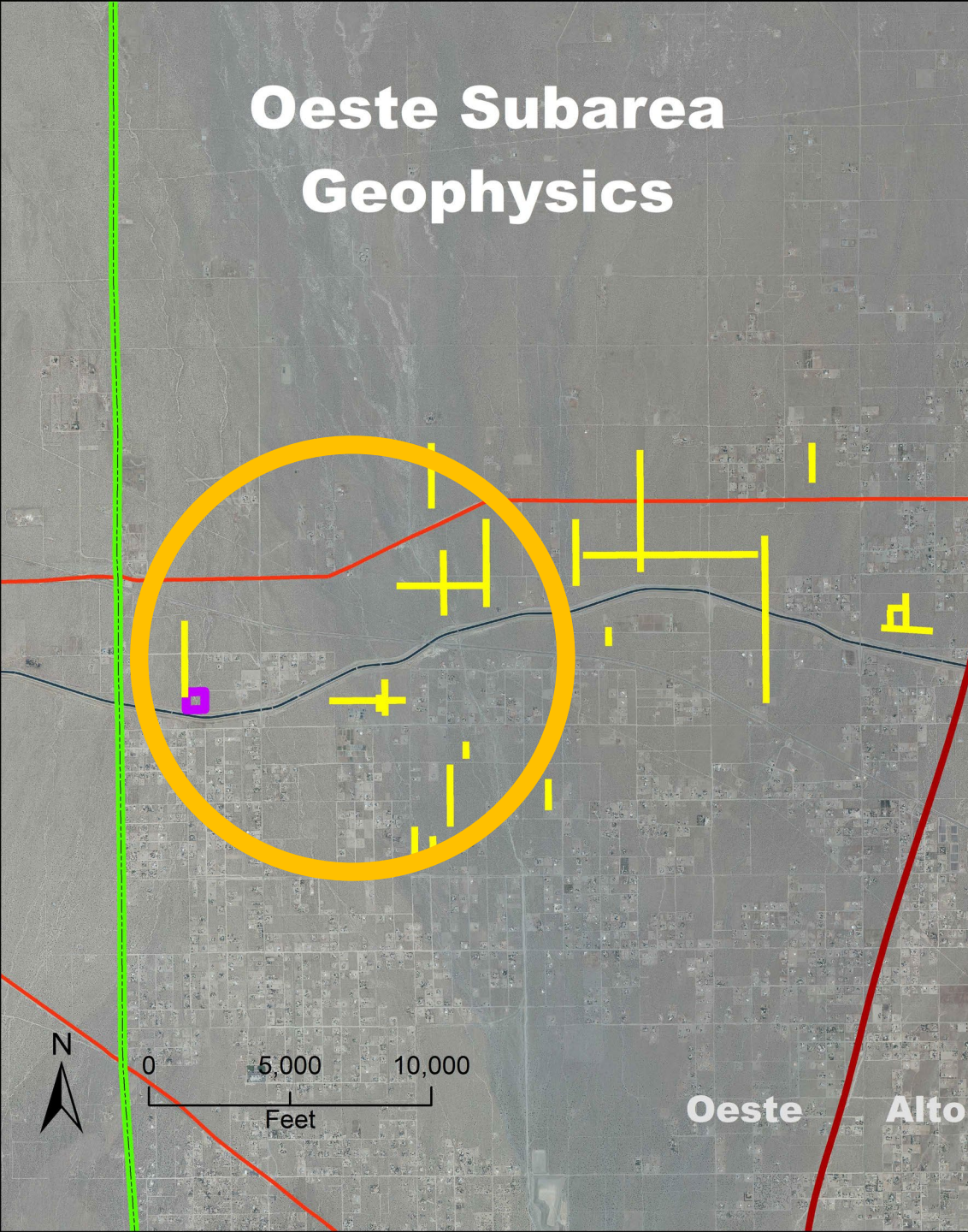
Surface Geophysics



Line D₁ Data Collection, Processing, and Interpretation Notes:

- Line D₁ Data include soundings 58 through 66. Data were collected on 6/2/18 and 6/7/18. Soundings were generally spaced from 100 feet to 170 feet. The survey was planned to allow for a sounding profile across the Aqueduct, and within the eastern one-half of the original project boundaries. Signal to noise ratios within the limits of the present report depths were affected at depth by the Aqueduct, even though vertical distance between both North and South sounding lines. Power and water lines also affected near surface data near South End and Old Spring Road. Between these areas, this report is representative of the collected data along ground surface and data relationships.
- Based on review of Aqueduct & Line D₁ geophysical resistivity results we have been unable to be approximately 100 Ohm resistivity. The value with the thinnest layer on the type of colored soil. Lower resistivity values within the geophysical layer may be indicative of the ground soil, and higher resistivity values may be indicative of coarse grain soils, such as Sand and Gravel.
- Profiles have been plotted with uniform depth scales and soil resistivity scales based on target depths of interest and subsurface conditions, respectively. Lack of correlation (i.e. R<0.90) are not likely of interpreted readings associated with the line.
- D-14, and D-20, are plotted as Areas of potential recharge. Each are interpreted to have near surface soil with high resistivity and may be hydraulically connected to deeper relatively high resistivity soil that is not represented in this profile. The D-14, and D-20, are interpreted as recharge areas. D-14, and D-20, are interpreted as recharge areas.

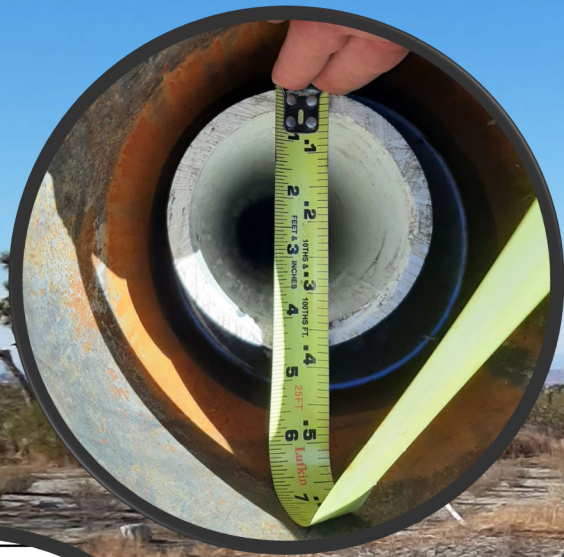
Oeste Subarea Geophysics



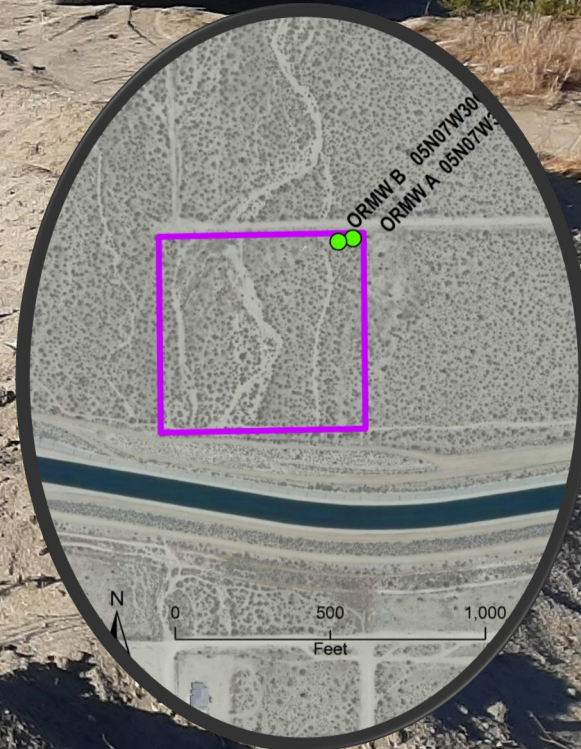
Percolation Test



Monitoring Wells



SWN: 10
 ORW 1B
 DATE: 3/28/2022
 POV: LOOKING NORTH



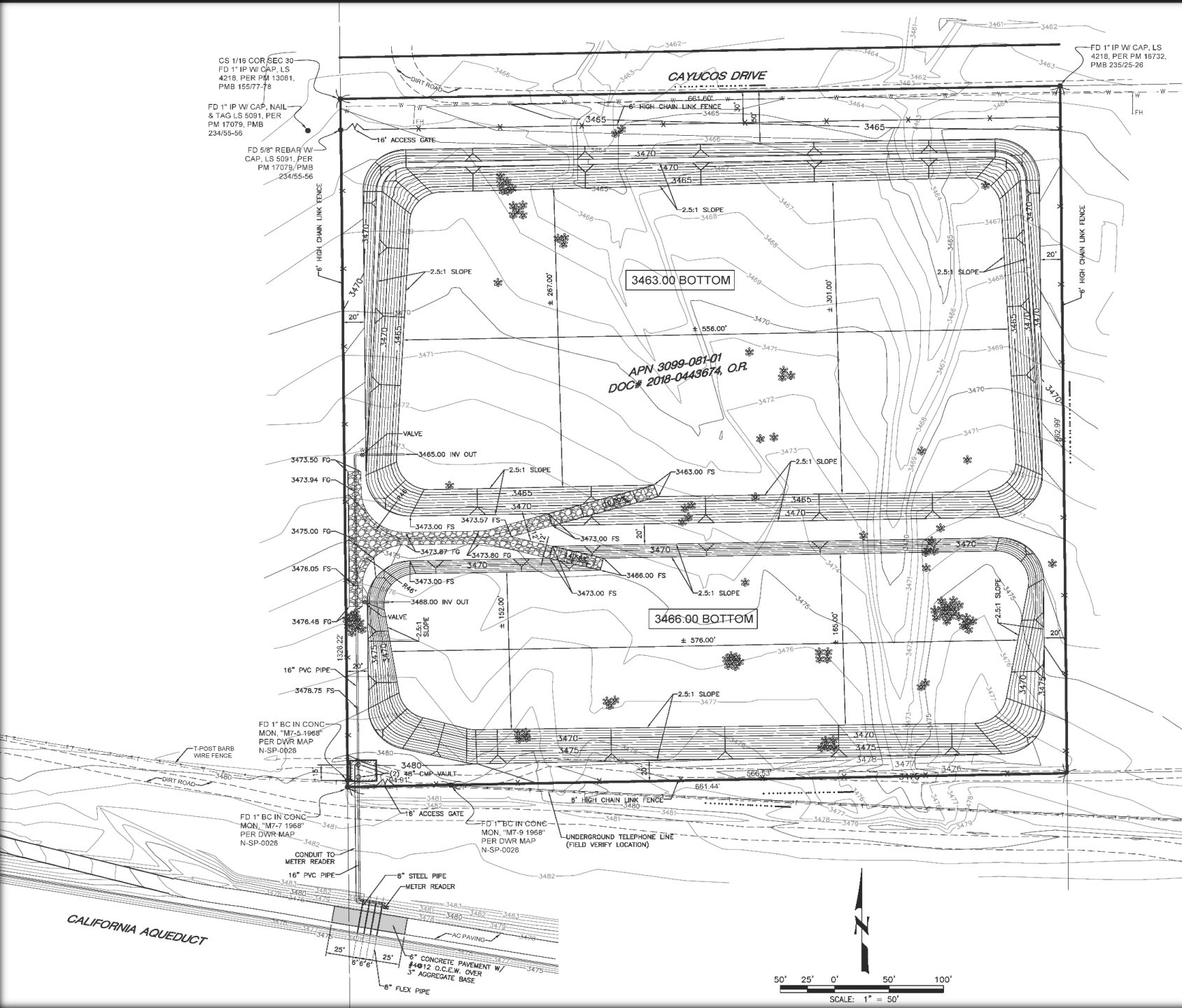
WELL LOG

DATE COMPLETED: 2/14/2022
 DRILLING METHOD: Air Rotary Casing Hammer
 BOREHOLE DIA.: 11.75"-10.0" at 240"
 LAND SURFACE ELEV.: TBD
 TOTAL DEPTH OF BORING: 660 feet bis

USCS	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL
		Utility clearance backfill
SM		SAND WITH SILT AND GRAVEL (20/70/10) Brown (10YR 4/3), dry to slightly moist, fine- to coarse-grained, poorly sorted / well graded, angular to subangular, some coarse sand may be crushed gravel, gravel size indeterminate.
SM		SILTY SAND (5/75/20) Dark grayish brown (10YR 4/2), dry, fine- to medium-grained, predominantly fine, trace coarse, moderately sorted/graded; trace gravel; micaceous.
SM		SAND WITH SILT (0/90/10) Dark grayish brown (10YR 4/2), dry, fine-grained, trace medium to coarse, well sorted / poorly graded, angular to subangular.
SM		SILTY SAND (0/80/20) Brown (10YR 4/3), dry, fine- to very fine-grained, well sorted / poorly graded, angular, micaceous.
SM		SILTY SAND (0/60/40) Dark yellowish brown (10YR 3/4), dry, fine- to medium-grained, predominantly fine, trace coarse, moderately sorted/graded, angular to subangular, grains predominantly granitic.
		SAND WITH SILT (0/90/10) Brown (10YR 4/3), dry,

LOGIC LOG FORM FOR MONITOR WELL OEST

Preliminary Basin Design



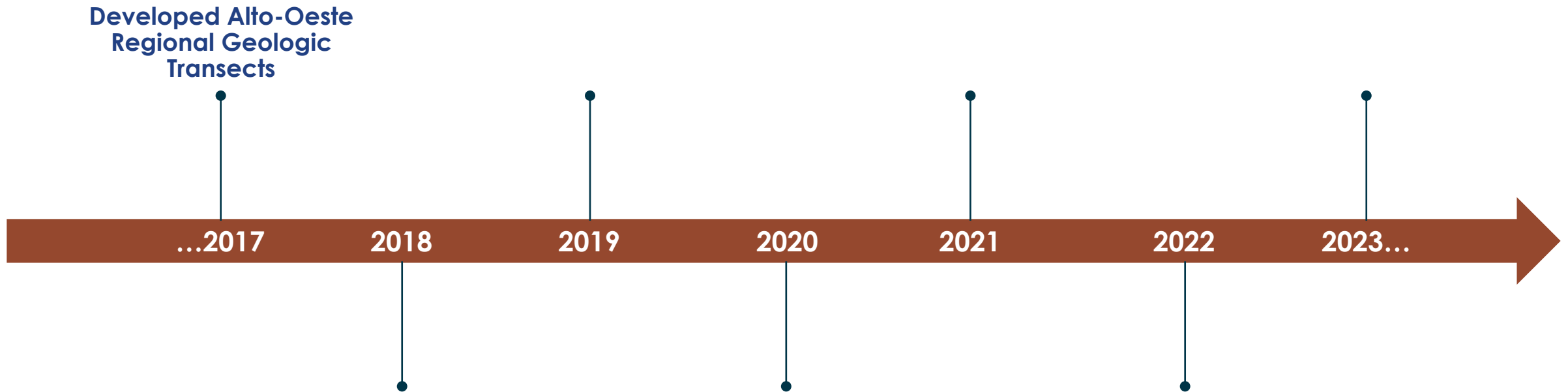
NOTE:

TOP BASIN AREA = 125,195 S.F.
 BOTTOM BASIN AREA = 223,390 S.F.
 CUT = 84,131 C.Y.
 FILL = 3,722 C.Y.
 NET = 80,409 C.Y.

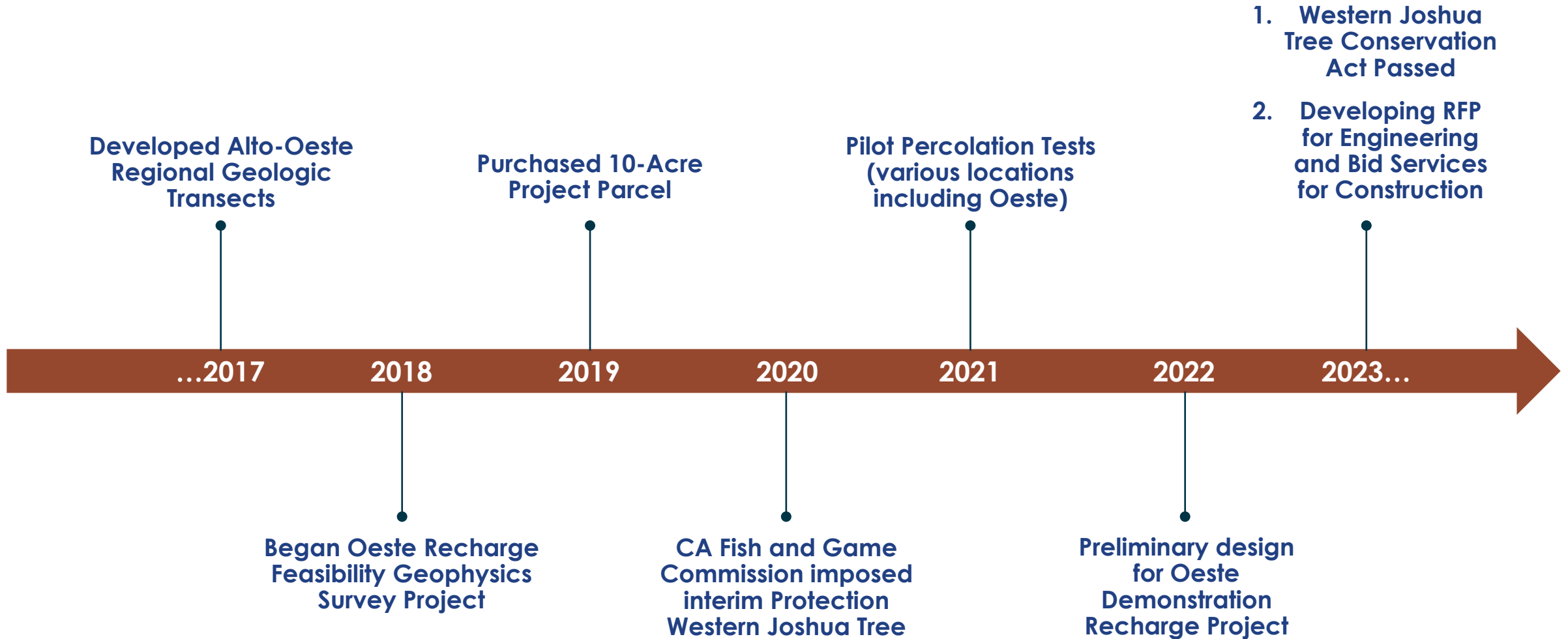
THE SIDE SLOPES ARE 2.5:1 (2.5 FEET RUN PER 1.0 FOOT RISE)
 THE MAX CUT DEPTH ON THE NORTHERLY BASIN IS 11 FEET. THE CONSTRUCTED DEPTH FROM TOP OF SLOPE TO BASIN BOTTOM IS 9 FEET.
 THE MAX CUT DEPTH ON THE SOUTHERLY BASIN IS 12 FEET. THE CONSTRUCTED DEPTH FROM TOP OF SLOPE TO BASIN BOTTOM IS 7 FEET.



Oeste Recharge Facility Timeline



Oeste Recharge Facility Timeline



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