



Update

Dos Amigos Pumping Plant

Discharge Line Assessment and Repair

California Water Commission

April 17, 2013

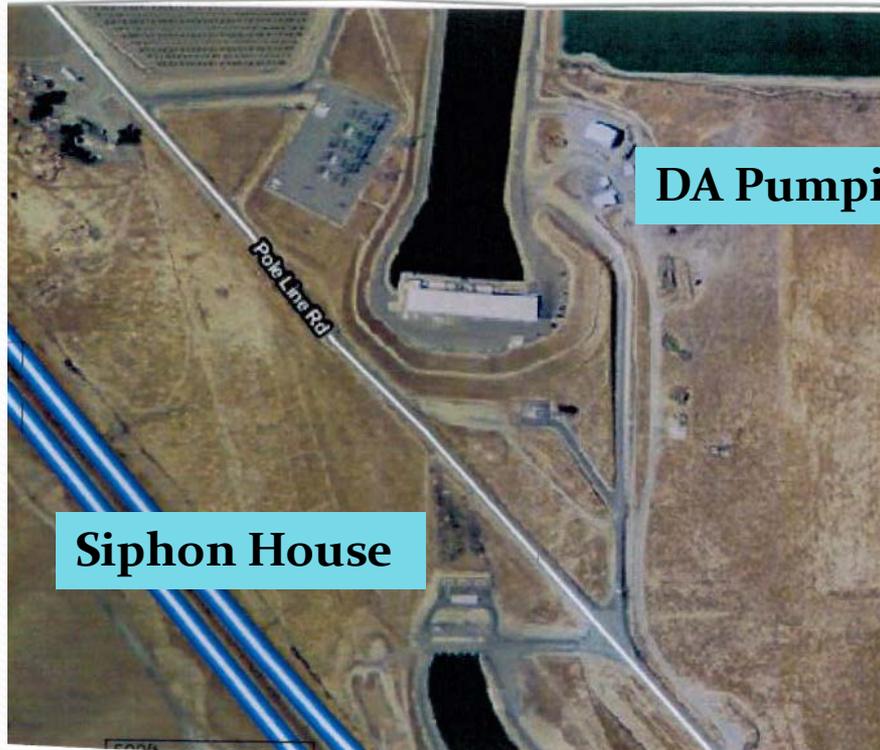
CALIFORNIA STATE WATER PROJECT



Location of Dos Amigos Pumping Plant



DA Pumping Plant



Siphon House

HISTORY/BACKGROUND

- Dos Amigos Discharge lines have a history of leaks and repairs – going back to shortly after construction: with various investigations, and methods used to seal joints and fill voids.
- DAPP has 6 discharge lines that are 18-ft diameter and consist of concrete and concrete encased steel pipe sections



Dos Amigos

- A sinkhole was discovered on January 3rd, 2013, adjacent to the south wall of the DAPP Siphon Control House - when a heavy equipment truck broke through the pavement.
- The sinkhole is located ~20 ft above discharge lines No. 4 and No. 5, adjacent to the exterior of the Siphon Control House south wall, which is approximately 130-ft from outlet into the Aqueduct.



- *Dos Amigos Siphon House - Sinkhole*

Dive Inspections

- Inspections revealed joint separation at the invert of pipe joints between the encased steel pipe and reinforced concrete transition section in all discharge lines inspected.
- Divers found $\frac{3}{4}$ " up to 2 + " separations at the invert – but top tight.



In Pipe Inspection – Line 5

- Missing joint sealant and tears in the Type 'A' rubber water stop.

Geotechnical Investigations:

- *Ground Penetrating Radar*
- *Cone Penetration Testing*
(used to determine the extent of voids in the area)
- *Auger Holes*
(soil types and conditions)
- *Slab Impulse Response (SIR)*
- *Spectral Analysis of Surface Waves (SASW) test*
(methods to determine the pipe support conditions)
- *Impact Echo (IE) testing*
(used to determine the concrete thickness in support of the analysis of the SIR and SASW data)
- *Cross-hole Seismic (CS) testing*
(between each pair of boreholes)



Actions:

Installing WEKO seals on all lines

Determining foundation stability and developing plan to augment



Currently:

Geotechnical Investigations complete – analyzing data

Seals installed on Discharge line # 5

Begin installing Seals on line #6 - 4/15

Currently Units 3, 4,5,and 6 are forced out

Current demand is being met with two units and will continue to meet the demands for the near future depending on weather conditions

Target – getting 3 units available by May 7, 4 units by June 1