Attachment 2 – Underground Storage Supplement
UNDERGROUND STORAGE SUPPLEMENT
TO APPLICATION TO APPROPRIATE WATER BY PERMIT

1. State amount of water to be diverted to underground storage from each point of diversion
   in item 3b of form APP.
   a. Maximum Rate of diversions POD 1-8 will divert no more than 45 cfs cumulatively.
   b. Maximum Annual Amount POD 1-8 will be operated as a system collectively capable of
diverting up to 10,000 acre-feet per year.

2. Describe any works used to divert to offstream spreading grounds or injection wells not
   identified in item 7 of form APP.
   See Application to Appropriate Water, Question 3, for complete project description
   __________________________________________________________________________
   __________________________________________________________________________

3. Describe spreading grounds and identify its location and number of acres or location of
   upstream and downstream limits if onstream.
   Direct recharge is anticipated to occur in a proposed 200 acre recharge pond or in 200
   acres of existing recharge ponds. On farm recharge could occur on any of the District
   lands adjacent to the Chowchilla Bypass by willing land owners. Up to 26,368 acres of
   cropped land may be utilized for on farm recharge.

4. State depth of groundwater table in spreading grounds or immediate vicinity:
   __________ feet below ground surface on Spring of 2015 measured at a point located
   within the __________ of Section __________, T __________, R __________, Mount Diablo B&M.
   See Figure 1 – 2015 DTW Measurements adapted from DWRs SGMA Data Viewer online
tool. See Attachment 2-4 – 2015 Spring Water Level Map.

5. Give any historic maximum and or minimum depths to the groundwater table in the area.
   Location Well 12S16E31G001M Maximum __________ feet below ground surface on __________
   (date). Location Well 12S16E31G001M Minimum __________ feet below ground surface on
   __________ (date). See Figure 1: Well 12S16E31G001M Hydrograph

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6. Describe proposed spreading operation.
Temporary pumps at PODs will distribute water to existing canals and water delivery systems within the District as well as directly applying water to lands adjacent to the PODs. Recharge rates of the proposed ponds and on farm recharge areas are assumed to range from 0.3 feet/day to 0.5 feet/day. Diversions to the proposed 200 acre recharge pond and existing 200 acres of recharge ponds will be satisfied first and willing land owners will then be given the opportunity to apply high flow water directly to private lands.

7. Describe location, capacity and features of proposed pretreatment facilities and/or injected wells.
None

8. Reference any available engineering reports, studies, or data on the aquifer involved.

9. Describe underground reservoir and attach a map or sketch of its location.
The points of diversion, place of use, and percolation areas are all within the recently updated boundary of the Delta Mendota Groundwater Subbasin. Historically the Aliso Water District was underlain by both the Madera and Delta Mendota Groundwater Subbasins, as defined in the DWR Bulletin 118. Portions of the Aliso Water District are underlain by the A-Clay to the southwest and by the Corcoran Clay under the entire district. However, the proposed recharge basins are located in the eastern part of the District, away from the A-Clay. See Attachment 2-9 that includes an excerpt from the Aliso Water District.
Groundwater Management Plan with a map of the Aliso Water District cross-sections, select cross-section locations, and a description of the upper and lower aquifer.

10. State estimated storage capacity of underground reservoir. The upper aquifer below the Aliso Water District is approximately 280-400 feet below ground surface, increasing in depth from the northeastern portion of the district to the southwestern portion. The upper aquifer located directly below the District, where groundwater would be stored prior to use, has a storage capacity of approximately 1.1 MAF based on an average depth to the Corcoran Clay of 350 feet below ground surface and a specific yield of 0.12.

11. Describe existing use of the underground storage reservoir and any proposed change in its use. The upper aquifer below Aliso Water District, which will be utilized underground storage reservoir, is primarily used for agricultural groundwater supply. It experiences recharge from precipitation and local streams and rivers. No change in use from the underground storage reservoir will occur as a result of this project.

12. Describe the proposed method and location of measurement of water placed into and withdrawn from underground storage. Water placed into storage will be measured at the PODs by flow meters at the discharge site. Water will be extracted from permitted private irrigation wells within the District, which will be authorized by the District through agreements that stipulate water to be extracted is the water recharged by this water right and not naturally occurring. Extraction will be measured using flow meters or known pumping rates and duration of pumping operation. See Attachment 2 – Aliso Well Map.

Additional copies of this form and water right information can be obtained at www.waterrights.ca.gov.
Attachment 2.1 – Maps
Attachment 2.2 – Aliso Water District, 2013
Groundwater Management Plan Excerpt
upper and lower aquifers). Water levels in wells tapping the lower aquifer are significantly deeper than those in wells tapping the upper aquifer. Also, because groundwater below the Corcoran Clay is confined and the clay is subject to compaction, pumping of wells tapping the lower aquifer has caused land subsidence. Monitoring of land subsidence in the Mendota area has indicated that pumping from wells above the Corcoran Clay does not cause permanent subsidence.

Subsurface Geologic Cross Sections

Cross Section A-A' (Figure 4) extends from near Avenue 6½ and Road 12 on the southwest to the northeast, to near Avenue 9¾ and Road 16½. This section is generally oriented parallel to the inferred dip of the alluvial deposits (to the southwest). The Corcoran Clay thickens to the southwest along the section, from about 10 feet near the northeast end to about 60 feet near the southwest end. Sand or gravel layers are common above the Corcoran Clay along this section. East of Road 15½, these layers are predominant. In contrast, clay layers above the Corcoran Clay are more common and extensive along the part of the cross section west of Road 15. The A-clay is not indicated to be tapped by wells along this section. Interbedded sand and clay layers are present below the Corcoran Clay along the section, and
FIGURE 4 - SUBSURFACE GEOLOGIC CROSS SECTION A - A'
some of these layers appear to be laterally extensive.

Cross Section B-B' (Figure 5) extends from near the San Joaquin River west of San Mateo Road to the northeast, to near Avenue 6½ and Road 16½. The Corcoran Clay also thickens to the southwest along this section, from 35 feet near the northeast end to about 50 feet near the southwest end. The A-clay was indicated to be present at most wells along the part of the section south of Avenue 6. Sand layers above the Corcoran Clay are thickest at Well 22R, near the San Joaquin River and east of Road 15. Based on available data, sands below the Corcoran Clay are thickest near the San Joaquin River and east of Road 15½. Clay strata are thick and fairly extensive below the Corcoran Clay along the northeast half of this section.

Cross Section C-C' (Figure 6) extends from south of McKinley Avenue near Calaveras Avenue on the southwest to the northeast and east to near Avenue 4 and Road 20½. The Corcoran Clay ranges from about 15 to 30 feet thick along the section. The A-clay is indicated to be present along most of the part of the section that is south of Avenue 3. There are a number of laterally extensive sand or gravel layers above the Corcoran Clay along the southwest and northeast parts of the section. Interbedded sand and clay layers are present below the Corcoran Clay along most of the section. Along the part of the section west of Road 17, clay
FIGURE 5 - SUBSURFACE GEOLOGIC CROSS SECTION B - B'
FIGURE 6 - SUBSURFACE GEOLOGIC CROSS SECTION C - C'
FIGURE 6 - SUBSURFACE GEOLOGIC CROSS SECTION C - C'