

The following work plan describes the process for the destruction of four (4) municipal water wells owned by the Elk Grove Water District. The four (4) wells are located in the Central Basin of the Sacramento County Groundwater Basins. This project supports the Basin Management Objectives (BMOs) of the Central Sacramento County Groundwater Management Plan (GWMP) which are designed to protect and enhance the groundwater basin.

#### Scope of the Proposed Project

This project proposes to destroy four (4) abandoned water wells. The four (4) wells are located within the boundary of the Elk Grove Water District. Exhibit A (attached) shows the locations and addresses of the four (4) wells proposed for destruction. The wells are known as Well 4, Well 5, Well 6 and Well 11.

#### Specific Objectives Related to Improving Groundwater Management and Implementing the GWMP

The GWMP lists five (5) BMOs to protect and enhance the groundwater basin. BMO No. 5 of the GWMP addresses water quality objectives. The GWMP also lists five (5) action item components that drive implementation of the BMOs. Component No. 3 (Groundwater Resource Protection) includes well destruction as an item to address the water quality objectives with the groundwater basin. The proposed destruction of the four (4) wells outlined in this work plan meets the objectives for improving groundwater management and implementing the GWMP.

#### Work Items and Requirements

##### A) General Requirements

The destruction of all wells shall comply with the following codes, standards and recommended practices.

- State of California Water Code, Section 13750.5
- State of California, Department of Water Resources (DWR), Bulletins 74-81 & 74-90
- Sacramento County Code, Section 6.28.040.B (Destruction of Wells)
- County of Sacramento, Destruction of Supply Wells and Exploratory Holes (Borings)

Only contractors holding a current State of California C-57 Well Driller license shall be used for the destruction of the wells. All required permits shall be acquired for the destruction of the wells. The requirements of the permit shall be strictly adhered to, such as providing the required advanced notification to the enforcement agency prior to placement of sealing material.

##### B) Preliminary Work

Existing well data and documentation will be reviewed to determine the physical characteristics of each well and the water bearing zones. Specific attention will be paid to the lithology of the well borings and how the wells were constructed; i.e., casing diameters and depths, gravel pack construction, well casing perforation zones, screened intervals, and open borehole depths.

Each well will also be videoed. Any down-hole equipment in the wells will be removed prior to videoing the wells. The videos shall clearly record the entire length of the casing and the entire depth of each well. Based on the video, each well construction will be verified and a determination will be made as to the condition of the wells. This information will be used in conjunction with the review of well documentation to determine the best method for proper well destruction.

### C) Sealing Method

Once the well videos and well documentation review are complete, a determination will be made on how to seal each well. A preliminary review was made of the four (4) wells as part of the preparation for this grant application. All of the wells have casing sizes ranging from 12" to 14" diameter. It is anticipated that the casings of the four (4) wells will be perforated mechanically at a rate of 8 cuts per foot of casing, and that sand-cement grout (10 sack mix) will be used to seal the wells. A determination will be made as to whether the open bore holes below the bottom of the casings may be filled with clean sand or pea gravel, or sealed with sealing material such as sand-cement grout. The wells will be filled with the sealing material from the bottom of the wells up. Placement of the sealing material will be made under pressure by mechanical pumping through a tremie pipe. The discharge of the tremie pipe shall be continuously submerged in the sealing material until the zone to be sealed or filled is completed.

A hole at least one (1) foot larger in diameter than the original drilled hole will be excavated around the outside of the well casing to a depth of five (5) feet below ground surface. The well casing will be cut off six (6) inches above the bottom of the excavation and removed. The sealing material will be placed to spill over into the excavation to form a cap. After the sealing material has set, the excavation will be filled with compacted native soil.

### Progress and Performance Evaluation

Progress of the project will be tracked against the schedule (Attachment 7). The work plan contains milestones and these milestones are reflected on the schedule. Well destruction is not an exact science and the schedule may have to be modified depending on conditions found during the project. For example, the volumes of the wells are calculated to determine how much sealing material will be needed to seal the well. Actual well volumes will most likely vary from the calculated well volumes and the time to place the sealing material can vary from what is scheduled.

Work performance will be evaluated through onsite monitoring and inspection of the work by the engineer who developed the work plan, or the engineer's designated representative. Certain tasks are measurable, such as the calculated volume of sealing material required to fill the well. Measurable tasks will be audited on site by the engineer or his designated representative.

The engineer, or his designated representative, will maintain field logs of the work. Progress and performance evaluations will be noted in the field logs. Copies of the field logs will be available to the oversight agencies of the grant program.

### Project Deliverables

The project deliverables will be the tasks identified in the final work plans. The tasks will include videoing the well and reviewing existing well documents, developing final work plans based on the video and well documentation review, removing any debris and sediment in the wells, perforating the well casings, filling the wells with sealing material, and returning the destroyed well sites to their native states.

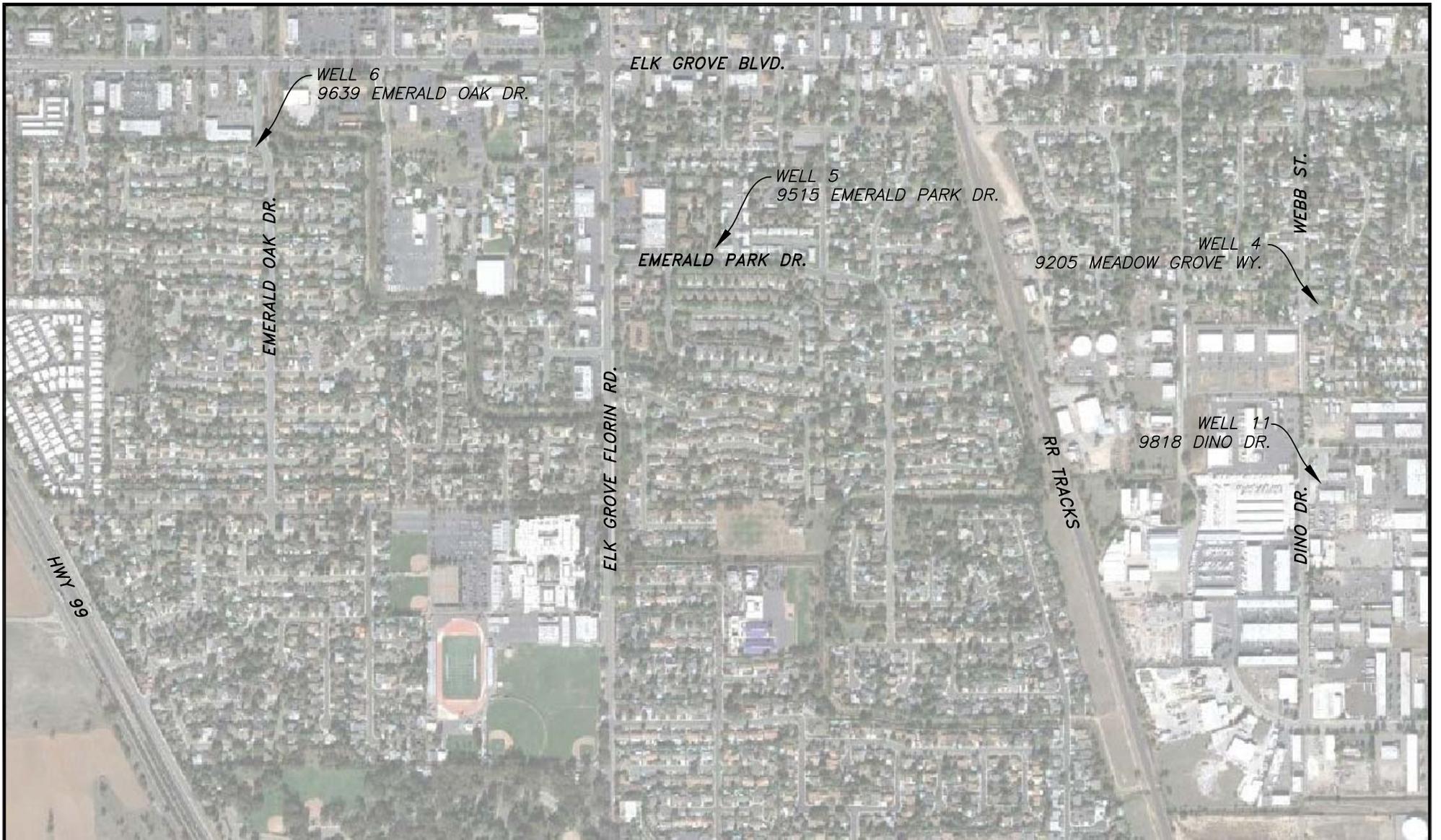
### Access to Project

All of the well sites proposed for destruction are owned by Elk Grove Water District. Access to the well sites will not be limited in any way.

### Environmental Compliance and Permitting

The proposed well destruction projects are categorically exempt from CEQA (the California Environmental Quality Act) under Title 14 California Code of Regulations, Class 1, Section number 15301(b) of the CEQA Guidelines. Projects exempt under Class 1, Section number 15301(b) consist of repair, maintenance, or minor alteration of existing facilities of utilities. A Notice of Exemption (NOE) will be filed with the Sacramento County Clerk prior to the start of the project.

All necessary well abandonment permits will be acquired from Sacramento County as part of the project.



NOT TO SCALE

**EXHIBIT A**  
**ELK GROVE WATER DISTRICT**  
**WELL DESTRUCTIONS MAP**  
 CITY OF ELK GROVE,  
 SACRAMENTO COUNTY, CALIFORNIA  
 SHEET 1 OF 1      JUNE 13, 2012