
Central Valley Regional Water Quality Control Board

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SUBJECT: OIL FIELD PRODUCED WATER POND STATUS REPORT #6

The Central Valley Water Board (CVWB) continues its effort to address issues associated with unlined surface impoundments (ponds) used to dispose water produced as a by-product of oil production. A work plan was prepared by CVWB staff in November of 2014 identifying work needed to be completed and an implementation schedule for completion of this program by the end of 2016. This status report identifies where we are in the process and what impediments have been encountered and whether the schedule is being maintained.

Inventory

The inventory of produced water ponds has been completed. Staff identified potential surface ponds, that CVWB staff was unaware of, from aerial photographs and information from the Division of Oil, Gas, and Geothermal Resources (DOGGR). This information was then correlated to facilities currently regulated by waste discharge requirements (WDRs) and used to determine areas where inspections were needed.

Field Inspections

Based on the inventory, staff identified impoundments (including those that were previously unknown) and inspected those having ponds, both active¹ and inactive². All of the inspection reports have been completed.

¹ Active ponds display evidence of discharge or intended for discharge by the operator.

² Inactive ponds display no evidence of discharge and are not intended to be used by the operator for future discharges.

The data gathered during field inspections and data gathered as part of the Water Code (WC) section 13267 order process described in the next section indicates that there are 102 operators of 326 facilities³³ in the Central Valley Region. All facilities with active or inactive oil field produced water disposal ponds were inspected. These facilities have a total of 1,074 ponds. 716 of the ponds inspected are active, displaying evidence of discharge or intended for discharge by the operator. 358 of the ponds are inactive. 534 of the active ponds and 106 of the inactive ponds are operating under waste discharge requirements. These numbers have changed since the last Status Report with the additional information we gathered with 13267 orders and letters sent to oil producers located throughout the Central Valley Region. The following table summarizes the data.

| Oil Field Unit Summary | |
|--|------|
| <i>Operators of facilities with ponds</i> | 102 |
| <i>Facilities with ponds</i> | 326 |
| Active facilities | 176 |
| Inactive facilities | 150 |
| <i>Ponds at facilities</i> | 1074 |
| Active ponds | 716 |
| Regulated ⁴ | 534 |
| Unregulated ⁴ | 182 |
| Inactive ponds | 358 |
| Regulated | 106 |
| Unregulated | 252 |

Section 13267 Orders

Staff used the information provided by the inventory, inspections, and other sources to prioritize the issuance of WC section 13267 orders. Orders dated 1 April 2015 were issued to 78 operators having active ponds or both active and inactive ponds. The orders require comprehensive characterization of specific constituents that are present in the produced water discharged to the ponds. The 13267 orders require submittal of analytical data for produced water constituents including general minerals (major cations and anions), total dissolved solids, metals, radionuclides, organic compounds (such as polynuclear aromatic hydrocarbons, benzene, toluene, ethylbenzene, and xylenes), and others (such as boron, lithium, and strontium). The orders also include a list of known ponds and require operators to inform us if any additional ponds exist or additional discharges are occurring. The orders require the operators to submit the information by 15 June 2015. Responses from the operators are being organized and compiled into a database. To date, we have received 59 responses, 43 of which were complete and 16 of which were incomplete. On 9 November we sent out 16 Notices of Violation (NOVs) to operators that have not responded to the 13267 orders. We will continue to issue appropriate enforcement actions to operators that have yet to respond, have responded late, or have provided incomplete responses.

³ A facility is typically the oil field infrastructure associated with an operator's individual lease within an oil field.

On 28 May 2015, 23 13267 orders were issued to operators that reportedly had only inactive ponds. The orders require the dischargers to verify their ponds are inactive and will remain inactive. To date, we have received 10 responses. We are continuing to follow up with appropriate enforcement actions for operators that have not responded.

On 12 June 2015, we issued 184 letters to additional oil field operators in the Central Valley Region that have not been previously identified as having active or inactive ponds. These letters were issued to confirm these operators do not discharge produced water to ponds that may have gone undetected through the inventory, inspection, and 13267 order processes. Four of the operators have confirmed they currently have active ponds that are receiving produced water. These sites have been inspected by staff and are included in the summary table above. The rest of the sites have not been inspected and are not accounted for in the summary tables above. To date, we have received 91 responses to our letters. Staff will continue to follow up with operators that have not responded.

Enforcement Orders

Forty-four draft Cleanup and Abatement Orders (CAOs) have been sent to operators for review and comment. Twenty-eight of these have been finalized and issued. The first two CAOs were adopted by the CVWB at the June 2015 meeting. Subsequent CAOs have been, and will continue to be, issued by staff under authority delegated by the Board. We are continuing to draft CAOs for those facilities that are not covered by WDRs. These will be completed by 31 December. We also anticipate that an additional 45 to 65 CAOs will be issued to operators discharging under old WDRs. We anticipate completing these by 31 December.

The CAOs require periodic monitoring of the effluent (an extension of the 13267 orders), hydrogeologic characterization of the area around the ponds, an evaluation of the nature and extent of any impacts to groundwater, a survey of water supply wells within a mile of the ponds, and sampling of domestic wells. The CAOs also contain clauses to allow recovery of staff costs and require the dischargers to provide replacement water if their discharges have impaired beneficial use of groundwater.

The DOGGR adopted new regulations for the disposal of fluids, including produced water, that come from oil wells that have received stimulation treatment. The new CAOs contain findings and requirements that address these new regulations.

The first Cease and Desist Order (CDO) for a large facility under an outdated set of WDRs was adopted by the CVWB at its July 2015 board meeting.

Other actions may be taken based on the results of investigations being completed. These other actions will be taken on a case-by-case basis depending on the site-specific circumstances.

Permitting Activities

We have completed a draft version of the first general waste discharge requirements (general order) for discharges of produced water to existing active ponds, both lined and unlined. This order will address discharges of oil production water that meet the salinity limits of the Tulare

Lake Basin Plan, and due to site specific hydrogeologic conditions will not threaten to degrade groundwater. It will require monitoring of produced water and will not allow degradation of groundwater quality.

We are also currently drafting the second general order. This second general order will address discharges of produced water that will meet the salinity limits in the Basin Plan, but may degrade groundwater. The second general order will apply to discharges that have applied appropriate treatment or controls such that any degradation that does occur will not cause violations of water quality objectives or adversely affect beneficial uses of groundwater. This general order will require groundwater monitoring.