

RRC-VCP Well Assessment

How to Evaluate Historic Oil and Gas Wells for RRC-VCP sites

As part of the due diligence in a Phase I environmental site assessment, a thorough determination of the presence of any existing or former facilities regulated by the Railroad Commission of Texas (RRC) should be performed. This guidance document addresses issues associated with historic primary production facilities including oil and gas and saltwater injection wells, which we will refer to as O&G wells.

The RRC advises that existing and former O&G wells be located, identified and plugging status determined for voluntary cleanup program (RRC-VCP) sites. Wells that remain unplugged may provide a conduit for migration of contaminants from deeper formations into fresh water aquifers, surface waters and the atmosphere. The presence of O&G wells may indicate the presence of other former lease equipment including tank batteries, reserve pits, water wells, flow lines, and saltwater handling facilities associated with them. These areas should be identified as potential areas of concern for Phase II activities. The following information is provided to offer assistance with locating the records.

Oil & Gas Well Map

The RRC-VCP highly recommends that the investigation begin with a map search for O&G wells as part of the Phase I environmental assessment. Maps may be obtained through private companies specializing in Oil and Gas records or from the RRC.

The RRC Central Records Department is able to generate maps showing the locations of all existing and former O&G wells of record for a given area. Information on ordering maps is available at <http://www.rrc.state.tx.us/about-us/resource-center/research/gis-viewers/>.

Oil & Gas Well Records

Should O&G wells be identified on the property under consideration, review of the pertinent RRC well records becomes necessary in order to determine whether the wells are in compliance with applicable statewide rules, or otherwise will hinder the ability to develop the site. The RRC-VCP requests that the applicant provide the plugging dates for each plugged well identified on the property. The plugging information for a given well is captured on the RRC's Form W-3 or its predecessor, Form 4. For properties that contain multiple wells, a table showing the operator name, lease name and number, well number, API number (if available), plugging date, and a corresponding map showing the locations of each well should be provided as part of the Phase I site assessment for ease of review.

Well records are available at the RRC Central Records Department (512-463-6882), but may also be available at the appropriate RRC District Office. Also, it may be necessary to obtain well records from active or previous operators of each lease.

Evaluating Oil & Gas Well Records

- 1) **Complete Records Indicating Adequately Plugged Well.** Except where other evidence suggests that a well bore is a possible source of contamination, the RRC-VCP will not require any additional action when records document that a well is adequately plugged.
- 2) **Unidentified Wells**
 - a) **Unidentified Wells On RRC Map**
 - i) Sometimes very old wells may be present on the RRC map that are not necessarily identified by an API number. Researching RRC well permit records, especially Form W-1 drilling permits for surrounding wells that have API numbers may assist with correctly identifying a posted well that lacks an identification number.
 - ii) It is possible that a given well may be mis-posted and is not located on the property under consideration, Other times, a Form W-1 may have been filed at the RRC, but the well was never drilled. In these situations the well may be removed from consideration. A thorough review of all available RRC records may assist with determining the most likely well location, well identification and whether the well was ever drilled. RRC Central Records staff or consultants that specialize in reviewing RRC records may be able to assist with research of difficult to find well records.
 - iii) Wells that are drilled but not completed including “dry holes” are depicted on maps as an open circle with a single line radiating outward from the circle at each of the cardinal points. Wells that are dry holes are required to be plugged and may be identified by the drilling permit Form W-1.
 - b) **Field Evidence of a Well But No Well On RRC Map**
 - i) There may be evidence of a well bore present based on field reconnaissance, but there may not be a record of a well in that location on the RRC map. This may occur for a number of reasons including unreliable survey data for very old wells, or if the well location was moved after the drilling permit was filed. Field inspection of these wells should include measurement of pipe diameter(s), determining the presence of surface casing, determining whether cement has been placed on the outer annulus of the pipe, a description of surface equipment, and latitude/longitude coordinates. This information may be used to correctly identify the well based on borehole design from well records in the area.
 - ii) It is important to recognize the difference between O&G wells and water wells, while noting that some old O&G wells may have been converted to water wells. RRC rules allow landowners to take over ownership of O&G wells converted to water wells with specific requirements and a P-13 permit.

The permitting of O&G wells converted to water wells began in 1983. If the well appears to be an O&G well, the field inspection should include the same information described above in Section (b)(i). Further evidence of an O&G well would include the presence of a well cellar, a reserve/workover pit, and possible concrete anchors. This information should then be compared to RRC W-1 records and P-13 records if available. If the borehole is open, a measurement of total well depth, depth to water and collection of a water sample which should be evaluated for chloride and BTEX, should be performed in order to differentiate between an O&G or water well.

3) Wells that Lack Plugging Records

- a) If the well identification is unknown, determine whether the well appears to be plugged by field reconnaissance methods. This may include inspecting and gauging the depth of the well by a technician experienced in O&G well inspections.
- b) If the well identification is known, it may be appropriate to check with the operator of record or the District Office to determine the status of the unplugged well. If the wells are not plugged because they are part of an active operator's lease, then only the operator of record may plug the wells. Also, note that the RRC now requires the lease operator to perform cleanup and removal of other lease facilities in accordance with amendments made to Statewide Rule 14 which went into effect on November 1, 2000. These requirements are summarized below.

Statewide Rule 14 d(12) refers to requirements after O&G wells on the lease are plugged and abandoned.

(12) The operator shall fill the rathole, mouse hole, and cellar, and shall empty all tanks, vessels, related piping and flowlines that will not be actively used in the continuing operation of the lease within 120 days after plugging work is completed. Within the same 120 day period, the operator shall remove all such tanks, vessels, related surface piping, and all subsurface piping that is less than three feet beneath the ground surface, remove all loose junk and trash from the location, and contour the location to discourage pooling of surface water at or around the facility site. The operator shall close all pits in accordance with the provisions of §3.8 of this title (relating to Water Protection (Statewide Rule 8)). The district director may grant a reasonable extension of time of not more than an additional 120 days for the removal of tanks, vessels and related piping.

- c) If a well identified on a RRC map is verified but still cannot be located by field reconnaissance, techniques such as electromagnetic surveys, use of metal detectors, soil gas surveys, and simple excavation of likely locations may be used to locate the well.

4.) Documented Unplugged Wells: Plug and abandon the wells as part of the property development by:

- a. Operator plugs the well Contact the last operator of record of the well and request that it be plugged and abandoned.
- b. Pay the RRC to plug Request that the RRC district office properly plug the well. The RRC generally requires the requestor to pay the RRC up front for the plugging, plus administrative costs. Additionally, scheduling of well plugging by the RRC is subject to RRC District Office personnel and equipment availability which may not fit a timeframe suitable for a particular development schedule.
- c. RRC to plug using state funds Notify the RRC regarding the unplugged abandoned well, and provide the API number, operator name, lease name and well number and total depth of well, if known. It is possible that the RRC may already have the well scheduled for plugging. State funds are applied to plugging wells based on a ranking system that includes the potential to threaten public safety or the environment. For more information on the ranking system or any other aspect of well plugging you may refer to the RRC Well Plugging primer at <http://www.rrc.state.tx.us/divisions/og/key-programs/plugprimer1.pdf>. Note that the state-funded plugging schedule may not fit a timeframe suitable for a particular development schedule.
- d. Determine whether the unplugged well poses a risk to the site if it remains unplugged until state funds can be used to plug it. The evaluation may include determination of fluid levels relative to the depth of usable quality groundwater in the area, determination of chloride concentration of fluids, history and design of well and the reservoir it penetrates, etc by a trained technician. The RRC does not recommend the placement of structures over unplugged O&G wells.
- e. Cut the unplugged well out of the area for consideration under the RRC-VCP.

NOTE: An O&G well may not be plugged without receiving prior approval from the appropriate district office. Failure to obtain RRC approval may result in a requirement to re-enter and re-plug O&G wells.