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Guidance Document for Dewatering Wells

Purpose

These guidelines will apply to dewatering well systems constructed for the purpose of lowering the groundwater level. The construction and destruction requirements of dewatering wells are outlined within this guideline.

Background

Dewatering systems are designed to lower the groundwater level to a specified depth to facilitate below ground construction. A water well, designed to lower the groundwater level, is often referred to as a dewatering well, and as such falls under the Contra Costa County Ordinance, Section 414-4.231, definition of a water well. Dewatering wells can be either permanent, as in maintaining the groundwater below a certain level for the roadway for a tunnel, or temporary, usually lasting no more than 12 months, as in structural construction projects or installation of pipelines. Dewatering wells that will be constructed on a temporary basis are **not** considered water wells under the California Well Standards Bulletins 74-81 and 74-90 and are subject to the requirements set forth in this guideline. However, permanent dewatering wells are subject to the same construction standards as water wells as set forth in the Contra Costa County Well Ordinance, the California Well Standards Bulletins 74-81 and 74-90, and as set forth in this guideline.

Exemptions

A shallow sump installed for the purpose of removing water that has collected in an underground excavation or water that may seep into a sump, equipped with a low lift pump to remove the water which would enter or interfere with the excavation, is not considered a dewatering well and is exempt from this guideline if the sump is:

- (a) onstructed within the limits of the excavation.
- (b) Not more than 5 feet below the specified excavation.

Contact your local Building Department for permit requirements for shallow sumps.

Authority

Section 414-4.202 of the Contra Costa County Well Ordinance

Definitions

“Dewatering Well”

Means any cased hole used for the purpose of permanent dewatering or temporarily removing groundwater during construction.

“Permanent Dewatering Well

Means any cased hole used for the purpose of permanent dewatering on a parcel or for stabilizing hillsides or earth embankments. Permanent dewatering wells are permitted on a permanent basis and a ten foot minimum sanitary seal of approved grout materials shall seal the annular space of the cased hole.

“Shallow Sump”

Means a low space or pit used to collect water, commonly found in the basement of homes.

"Sump Pump"

Means a pump that is used to remove water that has accumulated in a water collecting sump pit. The water may enter via the perimeter drains of a basement waterproofing system, funneling into the pit or because of rain or natural ground water, if the basement is below the water table level.

Sump pumps are used where basement flooding happens regularly and to remedy dampness where the water table is above the foundation of a home. Sump pumps send water away from a house to any place where it is no longer problematic.

“Temporary Dewatering Well”

Means any cased hole that is used for temporarily removing groundwater during construction or stabilizing hillsides or earth embankments. Temporary dewatering wells are permitted to remain in place for a period not to exceed 12 months.

“Well or Water Wells”

Means any well, public or private, including without limitation, wells serving County and State small water systems, individual domestic use wells, industrial wells, agricultural wells, recharge or injection wells, air conditioning wells, horizontal wells, permanent test wells, dewatering wells and cathodic protection wells.

Requirements for the Construction of Dewatering Wells

A dewatering well shall not be connected to any potable water system because dewatering wells are not required to meet drinking water standards. Dewatering wells are not required to be sampled for the presence of coliform bacteria or organic and inorganic contaminants.

All dewatering wells shall be constructed and abandoned by a licensed C-57 water well contractor. Pumps, wiring, and discharge lines for dewatering wells shall be installed by a licensed water well pump installation contractor or by the contractor performing the construction of the dewatering well as long as the procedures used by a licensed water well pump installer are followed. Discharge piping for the dewatering wells shall be above ground and discharge to an approved system; check with your local Building Department for discharge requirements. Current electrical codes shall also be adhered to when making electrical connections to the pump system.

Permitting

Prior to the construction of a dewatering well, a permit shall be obtained from Contra Costa County Environmental Health (CCEH) in accordance with the Contra Costa County Well Ordinance Section 414-4.801. Please contact this Division for current permit fee information. The requirements for application submittal are outlined below:

- a. An application and fee is required for every proposed dewatering well.
- b. A dewatering well schematic.
- c. A plot map showing the location of the wells. This plot map must also show any sources of contamination and any known nearby water supply wells. Existing well data can be obtained from the California State Geological Survey and/or the California State Department of Water Resources. All dewatering wells shall

maintain the required setback distances to sources of contamination. Required setbacks to sources of contamination can be found in the table below.

The following horizontal separation distances are generally considered minimum distances; local conditions may require greater separation distances to ensure groundwater quality protection.

Potential Pollution or Contamination Source	Minimum Horizontal Distance Between Well and Potential Source
Above and below ground storage tanks and associated pipelines	100 Feet
Leaking Underground Fuel Tank Cleanup Sites and Spills, Leaks, Investigation, and Cleanup Sites	150 Feet

- e. A statement from the Contractor or Project Engineer stating where the dewatering well system will be discharging to, will be required prior to permit approval.
- f. An additional statement shall be submitted by the contractor or Project Engineer stating the purpose for the proposed dewatering well system as well as the amount of time the dewatering wells will be active.
- g. Temporary dewatering well applications shall include procedures for destroying the wells pursuant to destruction requirements as set forth in this guideline.

The contractor, project engineer, and property owner shall take into consideration the affect that the proposed dewatering system could pose on existing nearby water wells once the system is running. The property owner that contracts for the installation and subsequent operation of a dewatering system that causes the loss of an adequate water supply to nearby properties, shall provide these properties with a temporary potable water supply until the dewatering activities cease.

CCEH may also require any other information necessary to evaluate the suitability of the dewatering system. If CCEH determines that the site for the dewatering system may pose a threat to neighboring wells or the spreading of contamination, then the submission of a geotechnical or environmental report from a licensed engineering geologist, registered geologist, hydrogeologist, soils engineer, or similarly qualified expert shall be required.

Once all required documentation is received and a permit is issued, the contractor shall follow the requirements for requesting an inspection for the construction or destruction of each dewatering well.

Well Completion Reports

For each permanent dewatering well constructed or destructed, a well completion report shall be submitted to the California State Department of Water Resources as well as a copy sent to this Department. Well Completion Report forms and instructions may be obtained by visiting DWR's website at: http://www.water.ca.gov/groundwater/well_info_and_other/well_completion_reports.cfm. In order to receive final approval for your permit, a copy of the well completion report must be submitted to CCEH.

Construction of a Permanent Dewatering Well

A permanent dewatering well shall be constructed in accordance with the Contra Costa County Well Ordinance and the California Well Standards Bulletins 74-81 and 74-90. Additional requirements are as follows:

1. Perforated well casing may extend to within 12 feet of the ground surface for dewatering wells intended for shallow aquifers or alluvial formations. In these situations, the annular space shall be grouted from the gravel pack to surface with approved grout materials (a 10 foot minimum grout seal is required).
2. For dewatering wells intended for shallow aquifers located 10 feet or less below ground surface, a variance request for a shallow annular seal can be submitted to CCEH for review and for approval.

Construction of a Temporary Dewatering Well

A temporary dewatering well extending into an unconsolidated formation (sands and gravels) and installed for a specified period of time, not to exceed 12 months, shall meet the minimum requirements:

1. The casing shall be free of contaminants and constructed to withstand the forces exerted on it during construction and removal.
2. The top of the casing shall extend 12 inches above working grade, which is the ground surface elevation of the construction project. However, the casing on a well point system may extend less than 12 inches above grade when a closed piping collection network is used under vacuum and the closed piping is maintained to prevent surface waters from entering the well points.
3. The top of the casing shall be capped so as to prevent the entry of foreign material or potential surface contaminants and take precautions necessary to prevent the entrance of water in the event of a flood.
4. The filter or gravel pack shall be free of contaminants.
5. The filter pack shall not extend higher than one foot below working grade. The annular space shall be filled with hydrated bentonite clay from working grade to the top of the filter pack.

Requirements for the Destruction of Dewatering Wells

Destruction of a Permanent Dewatering Well

A permanent dewatering well shall be sealed in accordance with the Contra Costa County Well Ordinance and California Well Standards Bulletin 74-81 and 74-90.

Destruction of Temporary Dewatering Wells

All dewatering wells shall be destroyed by a licensed C-57 water well contractor and the work shall be completed in accordance with the destruction procedure submitted when the dewatering well was originally installed.

Temporary dewatering wells shall be destroyed by the following procedure:

1. The contractor shall submit a written request to CCEH 48 hours in advance prior to commencing the destruction activities. An appointment confirmation must be obtained from CCEH.
2. Pull the pump and all wiring.
3. Approved grout materials shall be evenly distributed from the bottom of the borehole to the ground surface via a tremie pipe. An Inspector from CCEH must be present during this process.
4. Remove the casing from the borehole.

Any deviation from the destruction method above, must first be approved by CCEH.

Further Information

For additional information regarding well construction, destruction, permit applications or for current permit fee information, please contact this Division at 925-692-2500. You may also visit our website at:

http://www.cchealth.org/eh/land_use/ and download handouts, applications and current permit fee schedules.