

## ATTACHMENT 18 – GROUNDWATER QUALITY TECHNICAL REPORT

A map showing all water wells within a ½ mile radius of the disposal site boundaries is included with this report. The chart below lists water uses for each of these wells based on the state well report available on the Texas Water Development Board online database.

Well ID	Well Use
176588	Domestic
210505	Domestic
104263	Domestic
169592	Domestic
31919	Irrigation
70058	Domestic
428362	Stock
55488	Domestic
6813403	Domestic
428359	Stock
131966	Domestic
131967	Domestic

In total, there are 12 registered wells within ½ mile of the proposed irrigation area, although well IDs 55488 and 6813403 appear to be the same well. We were unable to locate any data on these wells above and beyond the state well reports alone, but the state well report for each well is included with this report.

Each State Well Report enclosed includes information on casing, yield, static water level, and the year the well was constructed along with construction methods used to construct each well. The registered wells in the area consist of nine domestic water wells, two stock wells, and one irrigation well. No monitoring wells are available in the area.

Groundwater resources which serve as sources or potential sources of domestic raw water supply will be protected in multiple ways. First, wastewater application rates will be limited to the designated limit of 0.1 gallons per square foot per day. Secondly, we are proposing to treat the water to a much higher water quality effluent standard than typical sub-surface drip irrigation systems. Typically, drip irrigation systems have permitted effluent limits of 10 mg/L for BOD and 15 mg/L TSS. We are proposing to treat the water to an effluent quality of 5 mg/L for BOD, 5 mg/L for TSS, 2 mg/L for NH<sub>3</sub>-N, and 0.5 mg/L for total phosphorus. Finally, there is only one water well on the subject property, and only one well that within ¼ mile of any proposed irrigation application area. The well that is on the subject property (Well ID 176588) is the same owner as the proposed WWTP, and this owner intends to plug the well before the implementation of any subsurface drip irrigation.

The proposed effluent storage pond will be constructed with an impermeable synthetic liner material manufactured by Carlisle Syntec Systems. A certification document for the proposed tank liner material is included as Attachment 14 of this permit application.

The proposed land application area is within the western edge of the Edwards Aquifer contributing zone. The estimated depth to groundwater in the vicinity of the proposed land application area is 172 feet below the land surface. This estimation is based on the State Well Report for Well ID 176588, which is the only known well within the developer's property boundaries. This well report is included as part of Attachment 18. This static water level depth to groundwater was measured on June 6, 2008 when this well was drilled.