Ground Water Consultants, LLC

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March 26, 2019

Mr. Alan Day
General Manager
Brazos Valley Groundwater Conservation District
P.O. Box 528
Hearne, Texas 77859

aday@brazosvalleygcd.org

Re: Review of Aquifer Impact Assessment for C.A. Skiles Family Partnership, Ltd. Permit Application – Three (3) Proposed Simsboro Wells for the Harlan Farm in Robertson County, Texas

Dear Mr. Day:

Our firm has reviewed a report submitted by the C.A. Skiles Family Partnership, Ltd regarding the potential impacts from pumping three wells screening sands of the Simsboro Aquifer and located in the west part of Robertson County. The report was prepared by The Thornhill Group, Inc. (TGI) and submitted to address Brazos Valley GCD Rule 8.4(b)(7)(B) for wells capable of producing 800 or more acre-feet per year (ac-ft/yr).

The permit application for the three wells is for an overall withdrawal amount of 15,483 ac-ft/yr, which is equivalent to an average pumping rate of about 9,600 gallons per minute (gpm) continuously for one year. The proposed pumping rates of the wells range from 3,000 to 3,300 gpm. The proposed locations for the wells are shown on the attached figure, which was provided as part of the hydrogeological evaluation report.

Our comments regarding the report for the three large-capacity wells are included below.

1. As required by the rule referenced previously, the evaluation report addresses the surface geology in proximity to the proposed locations for the wells and the surface geology in the general area extending a few to several miles from the wells. The report also addresses the depth of the proposed interval that would be screened by the wells and the thickness of the Simsboro Aquifer in the general area. The report also addresses the question regarding whether the aquifer is confined or unconfined and it is confined in this area with several hundred feet of artesian head above the top of the aquifer. The proposed wells are intended to screen sands of the Simsboro Aquifer, with the depth to the top of the aquifer ranging from about 670 to 950 feet across the Harlan Farm with the approximately 400 to 500 foot thickness of the aquifer being predominately sand. Hydrologic or hydrogeologic features near the proposed well sites also are discussed with data from other irrigation wells constructed in the area indicating that the Simsboro

Aquifer has similar characteristics at those locations as could occur at the proposed well sites.

2. As required by the Rule 8.4(b)(7)(B)(2), Tables 1 and 3 are provided in the report regarding water wells that are located within one mile of the proposed well locations and screen the same aquifer as the proposed wells. Based on the map provided with the report there are five wells located within one mile of proposed Well CS 1 that screen sands of the Simsboro Aquifer and one well located within one mile of proposed Well CS 2. A copy of the well location map is attached. All of the wells are listed as being owned by the C.A. Skiles Family Partnership, Ltd.

3. As required by Rule 8.4(b)(7)(B)(3), the report includes estimates of the interference drawdown that could be caused by pumping the three wells at rates of 3,300 gpm each for Wells CS 1 and CS 2 and 3,000 gpm for Well CS 3 continuously for one year and ten years. The estimates of interference drawdown extend out at least five miles from the wells and the estimates were calculated using two methods. One, using the recently updated Queen City/Sparta Groundwater Availability Model (GAM) prepared by the Texas Water Development Board(TWDB) and a second method using an analytical model. The estimated interference drawdown effects using the GAM range from about 20 to 40 feet at five miles from the wells after 10 years of pumping. The interference drawdown effect within about one mile of the wells using the GAM could reach about 80 to 100 feet.

   With the analytical approach used, the estimate of interference drawdown in close proximity to the wells range from about 180 to 190 feet after 10 years of continuous pumping by the three wells. At a distance of five miles from the proposed three wells the interference drawdown could be about 75 feet after 10 years of continuous pumping by the three wells. Based on the response of the aquifer to pumping to date the analytical model could be overestimating the drawdown effects in close proximity and at distance from the pumped wells. In summary, the GAM could be providing a better estimate of the amount of interference drawdown at a distance of about one mile and at greater distances from the wells than the analytical model.

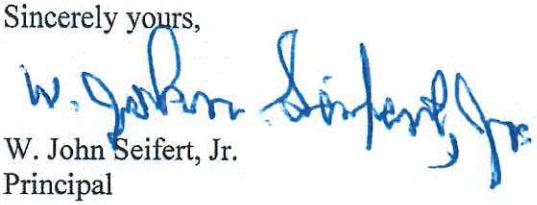
   The actual amount of interference drawdown that will occur with the pumping should be monitored using data from the District water-level monitoring program.

4. Ground Water Consultants, LLC(GWC) performed a model simulation with the recently updated Queen City/Sparta GAM using the same amounts of pumping in the same locations as in the permit application for the same duration as simulated by TGI and obtained results that were very similar to the results presented by TGI. GWC reserves the right to perform additional model simulations in the future and review the results.

5. The evaluation report, in general, addresses the requirements of Rule 8.4(b)(7)(B).

If you have questions concerning our review or require other information that we can provide, please do not hesitate to contact us.

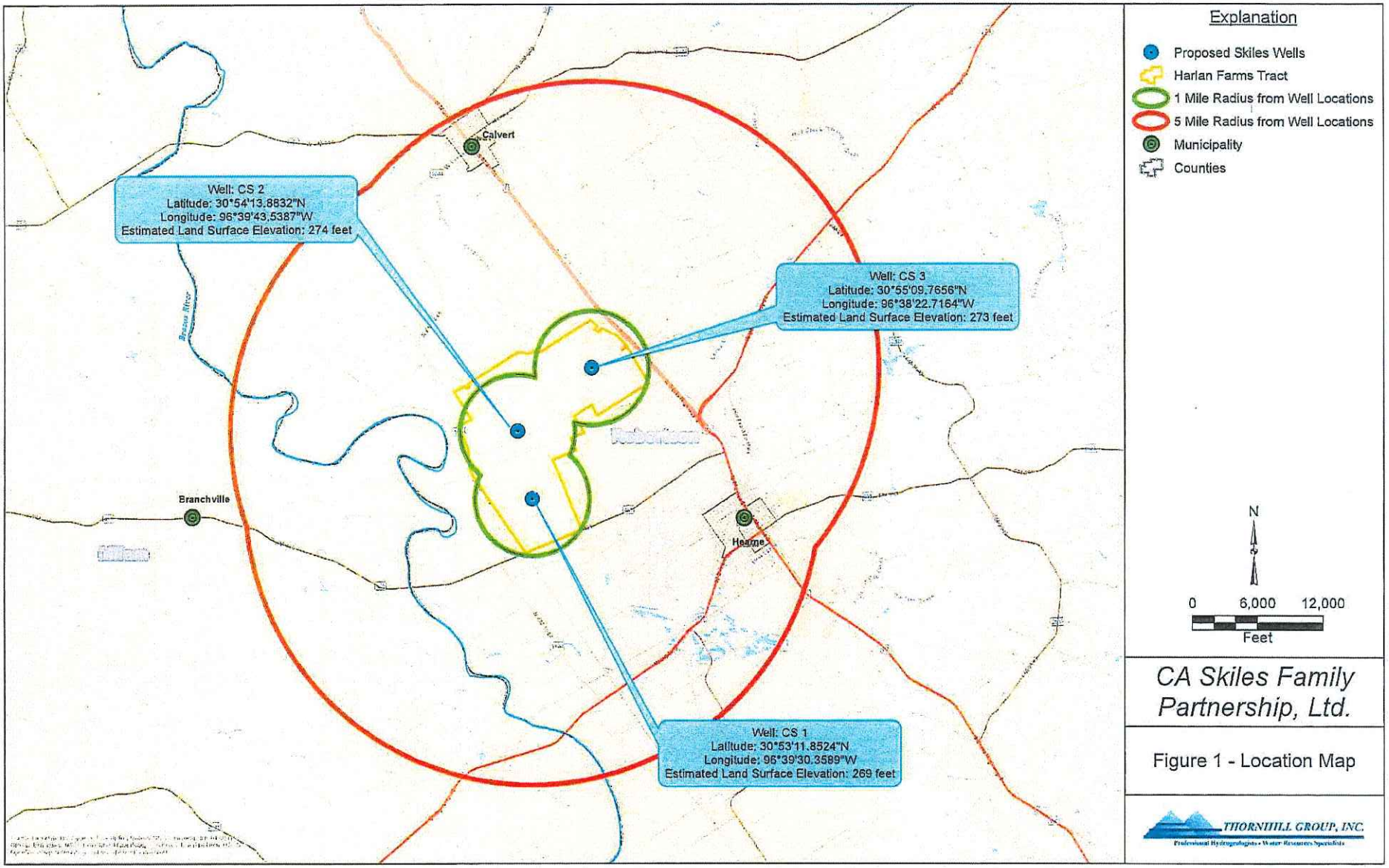
Sincerely yours,



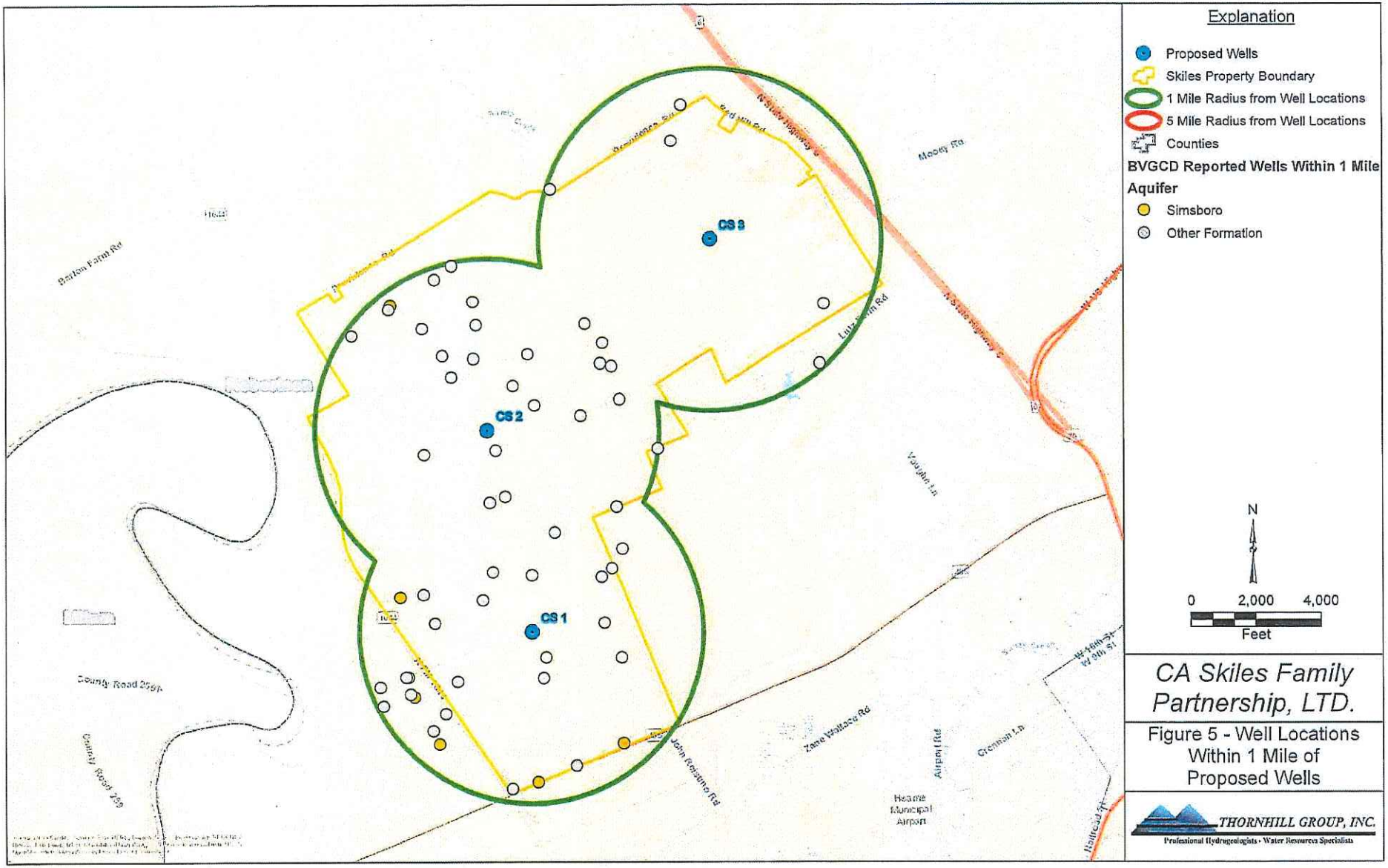
W. John Seifert, Jr.
Principal

Enclosures

Transmitted via Electronic and U S Postal Service Mail



Source: Aquifer Evaluation Prepared for C.A. Skiles Family Partnership, Ltd., March 5, 2019



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