



Wet Rock Groundwater Services, L.L.C.

Groundwater Specialists

TBPG Firm No: 50038

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October 9, 2015

Mr. John Dupnik
Barton Springs/Edwards Aquifer Conservation District
1124 Regal Row
Austin, TX 78748

RE: Needmore Water LLC Temporary Permit Application

Dear Mr. Dupnik:

This letter is in reply to your letter dated September 30, 2015 requesting additional information regarding the Needmore Water, LLC temporary permit application. Each of your separate "requests" is restated below followed by our responses.

3-1.55.2 (A)(1) – A detailed statement of the nature and purpose of the existing uses.

Response: The LaMantia Ranch, locally known as Needmore Ranch, covers approximately 5,071 acres in western Hays County. The LaMantia Family purchased the Ranch from the Estate of John O'Quinn in the spring of 2011. Since purchasing the Ranch, the LaMantia Family has worked to improve the agricultural productivity and management across the Ranch, planning long-term to use the Ranch for such activities as a cattle yearling operation and open space for the Family. Greg LaMantia serves as the Family's manager of ranching operations. Since acquiring the Needmore Ranch, the LaMantia's have been working to restore the overgrazed pasture lands across the property. This multi-year process, which is ongoing, included the following steps:

1. Remove all livestock from the property – the herd of cattle acquired with the ranch has been sold off. Some pastures have been fenced off to isolate and/or exclude wildlife, e.g., deer herds, etc.
2. The overgrazed pasture lands have been allowed to lay fallow and recover from the overgrazing they experienced due to the prior owner's poor agricultural and animal husbandry management practices. The pastures also either have been or will be planted with improved grasses, including some non-native and annual species, e.g., hay grazer, coastal oats, that will require irrigation to supplement the available rainfall. Along with pasture rotations, the owners will also multi-crop annually rotating crops based upon seasons.
3. Once the pastures have been allowed to recover and become reestablished for grazing purposes, the ranch will be restocked with both cattle and deer.
4. During the past year, Needmore Ranch has been researching and soliciting bids and cost estimated for various types of pipeline and related irrigation equipment, including center

pivot systems. The irrigation of the property was for the purposes of watering native grasses on the property in the area surrounding the Blanco River in addition to other parts scattered throughout the Ranch.

A brief description of specific steps taken by the Family to bring the Ranch back to peak operating efficiency since 2011 is summarized below:

Agricultural Improvements (See attached map):

1. **Two-Mile Cross Fence Construction:** This fence runs from north to south and crosses the center of the Ranch. The new cross fence allows the Ranch to be divided into the three primary pastures: north, southeast and southwest. The primary purpose of the five stranded barbed wire cross fence is for herd management and pasture rotation. This cross fence is not an eight-foot game fence and is not intended for wildlife/game management. Approximate investment: \$160,000.00.
2. **Reseeding with Native Seed Mix:** Hundreds of acres have been reseeded within the north pasture with native seed mix. Reseeding has been completed by seed spreaders mounted on four-wheelers or by hand spreaders in less accessible areas. The reseeded began in 2011 and has been progressing since. Areas that have been fallowed and reseeded in 2011 and 2012 are showing evidence of improved ground cover and native grass recovery. Approximate investment to date: \$250,000.00.
3. **Resting the Southwest Pasture:** While improving the agricultural infrastructure on the Ranch during the past four years, the number of head of cattle onsite has been reduced. The ongoing drought over the past years reinforced the necessity to reduce the number of cattle from the Ranch, and to allow the pastures an opportunity to recover from the historic over grazing that occurred prior to 2011. Pre-2011, the ranching operation was running approximately 350 cows and only utilizing approximately 1/3 of the Ranch (the Southwest Pasture). Previous cattle operations were concentrated around the Ranch headquarters due the lack of water distribution across the Ranch.
4. **Disking and Seeding the Sections in the North Pasture:** In the spring of 2013, the two lower pastures along the Blanco River floodplain were disked and native grass seed planted. These pastures currently contain llamas.

Depending upon the level of growth in the reseeded pastures and climatic conditions, plans are to stock 250-400 yearling steers on the Ranch annually. The number of head will be highly influenced by the current drought conditions on the Ranch. This will be the first significant placement of cattle onto the Ranch since the purchase and agricultural improvements have been put on the ground.

5. **Providing Water Source in the Three Major Pastures:** One of the most important elements to allow for a switch back, or three-pasture rotation is to provide water within all three of the pastures. Prior to 2011, the only major water source for the cattle operations was the domestic well located at the Ranch headquarters. This led to the concentration of cattle and degradation of this area. Water improvements include:
 - a. **North Pasture:** The LaMantia's constructed Pond 1 in the north pasture to capture and provide reliable surface water throughout the north pasture. Approximate investment: \$150,000.00
 - b. **Southeast Pasture:** The LaMantia's constructed 2.5 miles of water pipeline to provide reliable water within the pasture. Approximate investment: \$25,000.00
 - c. **Southwest Pasture:** This pasture includes the ranch headquarters and did not require additional



water improvements. Approximate total water source investment to date: \$175,000.00

- d. **Groundwater Development:** In 2102, the Needmore Ranch commissioned Wet Rock Groundwater Services, LLC to conduct an extensive hydrogeological study of the property in an effort to better understand the water resources underlying Ranch. As part of that study extensive test well drilling was conducted; this resulted in the completion of the existing Well D. The objective of the well was to supply water to wildlife and stock on the property in addition to use as irrigation well in the future. As discussed below, and in greater detail in the report that accompanied the pending HB 3405 Applications, there is an abundant quantity of groundwater within the Middle Trinity Aquifer of good to reasonable quality for application to farming and ranching activities. Of the test wells drilled as part of the 2012 study, only Well D was completed to be operational. The other wells were plugged following completion of the study.

In addition to its planned irrigation use of groundwater, the Ranch received permission from the United States Army Corps of Engineers to construct a ponded water feature which is used for watering both domestic livestock, and the native wildlife. The location of Well D, is outside of the Hill Country Priority Groundwater Management Area. The pond is constructed in a location designed to capture rainfall sheet flow on the property, however, the well is used periodically to supplement this water feature at times.

3-1.55.2 (A)(8) – A description of the location of the proposed receiving area for the water to be produced.

Response: The area receiving the water produced from Well D is to be used on the map submitted with the permit application, the water feature approved by the US Army Corps of Engineers and areas that have not been finalized yet planned for irrigation throughout the Ranch.

3-1.55.2 (A)(2) – The requested annual permit volume not to exceed maximum production capacity and supporting documentation.

- **Please confirm that 887 acre-ft/year requested is based on the “maximum production capacity” of the well as defined by statute. Or provide an alternate basis if the requested volume is not being requested as the “maximum production capacity.”**

Response: The 887 acre-ft/yr is based upon the calculated “maximum production capacity” of the well as defined by House Bill (HB) 3405. Within HB 3405 “maximum production capacity” is defined as:

the maximum production capacity of a well, which may be based on a 36-hour pump test conducted at the time the well was initially constructed or placed into service.

The 887 acre-ft/yr was calculated as the maximum production capacity that the well could produce based upon the results of the aquifer test conducted on November 14, 2012 and based upon the largest pump that could fit within the well. The aquifer test conducted on November 14, 2012 consisted of a constant rate test of ~430 gpm for approximately 22.4 hours resulting in a final drawdown measurement of 37.99 feet. Although when graphed the data indicated a drawdown occurring, the rate and magnitude of that drawdown was small enough to provide for calculation of aquifer properties. Between 8 hours into the test for the remaining 14 ½ hours until the pump was shut off, the well experienced less than 5 feet of drawdown.

The aquifer parameters calculated from the test resulted in a specific capacity of 11.27 gpm/ft and a transmissivity of 523 ft²/day. Based upon the test results, it is apparent that the well can produce in



excess of 430 gpm however it is limited by the size of the largest pump that can fit within the well. To determine the “maximum production capacity” of the well we located the largest pump that could fit within this well and determine the production rate at a given Total Dynamic Head (TDH) determined from the aquifer test. TDH was determined as shown below:

TDH

Static W.L. (November 14, 2012)	287.07 ft.
Pumping W.L. @ 428 gpm	325.06 ft.
Pumping W.L. @ 550 gpm (est)	336.0 ft.
<u>Frictional Loss in Column @ 550 gpm (6” Steel)</u>	9.2 ft.
TDH @ 550 gpm	345.2 ft.

- **Please confirm that the well is constructed as the final completion for permanent production.**

Response: It is our understanding that the well is completed to final completion for the intended beneficial purposes described in the applications.

- **Please provide the pump model and specifications for:**

1. The pump which was used to conduct the well test on November 14, 2012.

Response: We do not typically record the pump model used during the aquifer tests; however the pump used was a 6-inch submersible pump with a 60 HP motor and set on 4-inch steel column pipe set at 588 feet.

2. The pump that is currently installed in the well; and

Response: The pump currently installed in the well is a Grundfos 475S500-6A

3. The increased capacity pump that could be installed in the well as it is currently completed, which was used to derive the pumping rate for the requested permit volume.

Response: The increased capacity pump that could be installed is a Grundfos 475S600-7

- **Please provide the intended run time of the well (pumping duration) on an annual basis and the intended pumping rate (gpm) for that intended pumping duration.**

Response: To achieve the 887 acre-ft/yr the “maximum production capacity” was determined based upon the largest pump that could fit within the well. At 550 gpm running 24 hours a day and 7 days a week the well would produce 887 acre-ft/yr.



3-1.55.2 (A)(9) - Other Facts and Considerations.

Response: Pursuant to your request, we have schedule a site visit to the Needmore Ranch for 2:30pm, Wednesday, October 14, 2015. By separate communication, we will provide you with directions to the rendezvous point at the Ranch.

Please call me at 512-773-3226 if you have any questions or require additional information.

Respectfully,

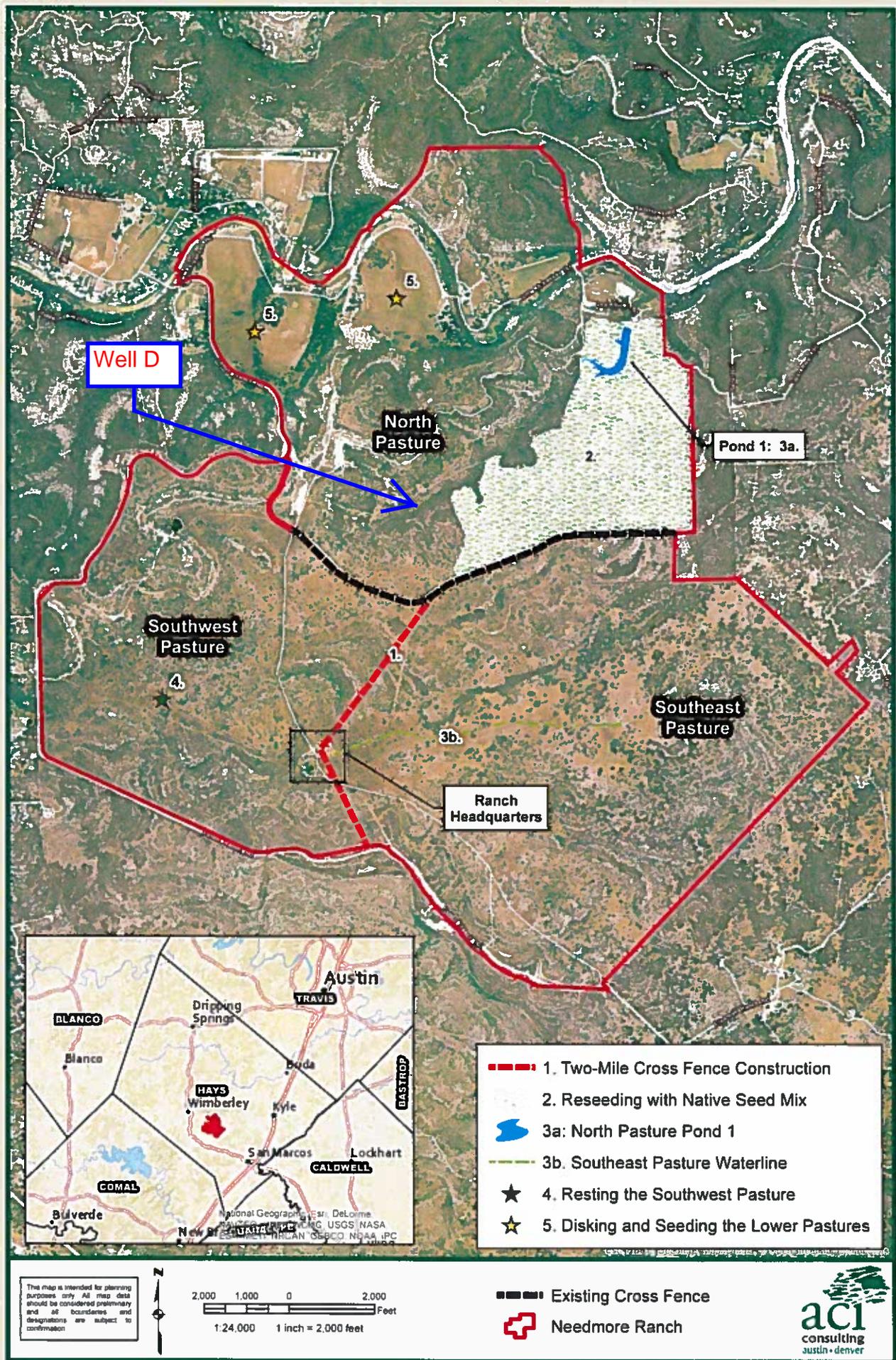
Wet Rock Groundwater Services, L.L.C.



Kaveh Khorzad, P.G.
President/ Senior Hydrogeologist

Cc:
Mr. Greg LaMantia
Mr. Ed McCarthy





La Mantia (Hays County)
Figure 1: Agricultural Improvements