BLUE DOG RANCH
Milano, Texas

12 October 2014

The Honorable Mike Gallagher
San Antonio City Council Member – District 10

RE: Vista Ridge Regional Supply Project
Water Transmission and Purchase Agreement

Dear Mr. Gallagher,

Hello!

I am sending this information to you because I believe that the groundwater provisions of the Vista Ridge Regional Supply Project Water Transmission and Purchase Agreement are, borrowing from hydrogeological terms, murky and need to be clarified.

Without the groundwater, there is no Vista Ridge Project – and the groundwater for the project depends on both groundwater leases and groundwater district permits.

The following document presents new information which raises concerns about the groundwater leases and groundwater district permits.

I believe that the concerns need to be investigated by the San Antonio City Council and/or San Antonio Water System before proceeding with a decision regarding a $3.4 billion long-term project which may not be able to provide the sought-after reliable supply of groundwater. Transparency and above-board are two principles which must apply to the Vista Ridge Project because of its importance and cost to San Antonio.

Since you don't know me, I am providing some of my background information:

- My ranch is located over the source aquifers for the Vista Ridge Project and only 25 miles north of the planned 4-square-mile well field.
- I have published over 1,000 articles about Texas groundwater issues since 1995; over 200 of those focused on Blue Water Systems (the water marketer for the Vista Ridge Project) and the Post Oak Savannah Groundwater District which issued the required pumping/transport permits to Blue Water Systems.
- My academic background includes a Ph.D. awarded by The Johns Hopkins University in Baltimore and fifteen years as a tenured faculty member at the University of Texas Southwestern Medical Center at Dallas.

My specific knowledge about the groundwater district which plays an integral role in the project allowed me to identify the following problems:

- The company owning the groundwater leases needed for the project is not identified in the contract.

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- Someone has convinced Vista Ridge and SAWS that when Vista Ridge's pumping permits are cutback due to aquifer depletion, the groundwater district will simply turn around and approve the new pumping permits needed to continue transporting 50,000 acre-feet/year of groundwater to San Antonio. That assumption is not supported by the groundwater district's rules.
- Vista Ridge's existing permits for pumping and exporting groundwater expire at least five years before the 30-year contract terminates and there is no guarantee that they will be extended.
- Two of the three groundwater district's trigger points leading to cutbacks of existing pumping permits will be exceeded on the first day that Vista Ridge starts delivering groundwater to San Antonio.

These findings are discussed in the following document.

Each finding by itself could prevent San Antonio from receiving the contracted groundwater.

Together, however, the findings constitute a high hurdle to overcome for the Vista Ridge Project to be as successful as advertised.

It is possible that SAWS has already considered and fully investigated my concerns. If they have, I believe that their findings should be incorporated in the contract.

The project is much too important and costly for San Antonio not to have a full and complete understanding about the reliability of the groundwater supply. This caveat also applies to Abengoa and Blue Water Systems.

I only ask that you thoroughly study the Vista Ridge contract and require answers to the following new concerns before making your decision.

If the Vista Ridge Project is approved and then fails, it would setback San Antonio's efforts to find a reliable alternative water supply by many years.

Thanking you for your time and consideration,

Curtis Chubb, Ph.D.
Milam County, Texas

VISTA RIDGE PROJECT COMMENTS

Will the groundwater be available for transport to San Antonio?

Concern 1: ***Who owns the groundwater leases supplying groundwater for the Vista Ridge Project?***

The entire Vista Ridge Project is built on the groundwater leases: no groundwater leases = no groundwater = no project.

Please look at the next two figures and ask yourself if the same groundwater leases are outlined in each figure.

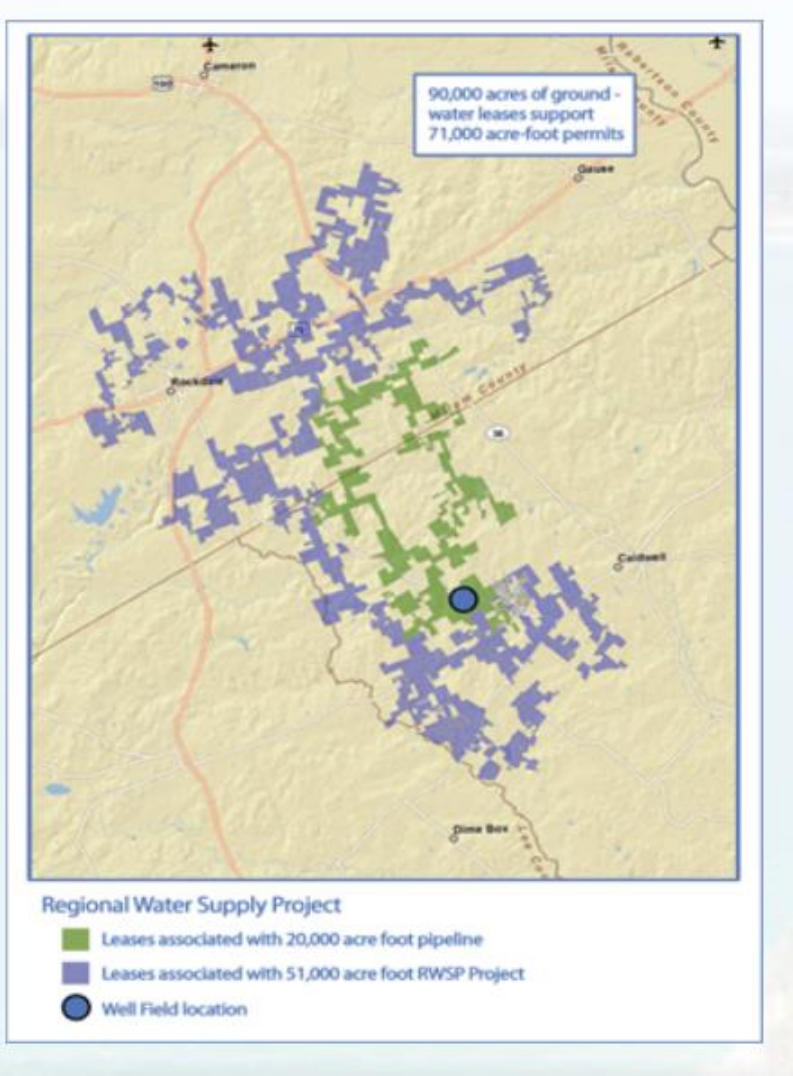


FIGURE 1

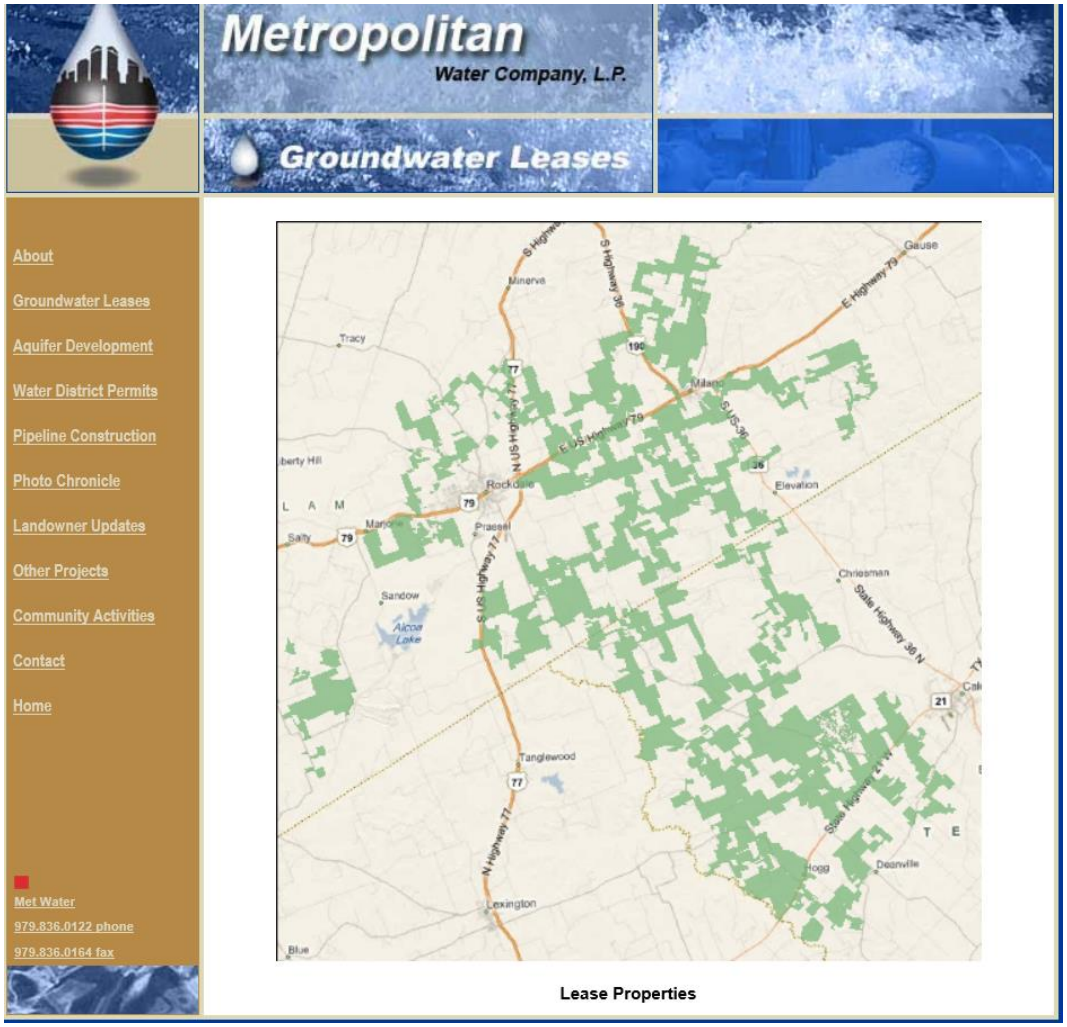


FIGURE 2

The answer is 'yes' – the same groundwater leases are in both figures.

Figure 1 is from the Blue Water Systems website. (http://www.bluewatertx.com/our-projects/bluewater-regional-water-supply-project-bwrsp/) The groundwater leases colored purple are the groundwater leases dedicated to the Vista Ridge Project.

Figure 2 is from the Metropolitan Water Company website. (http://www.metwater.com/landleases/leaseproperties.htm)

Metropolitan Water's website describes their groundwater leases in the following way:

> "Met Water has entered into a partial assignment of groundwater leases with Blue Water Systems LP, giving Blue Water the exclusive right to produce and market the groundwater resources from the Met Water groundwater leases." (http://www.metwater.com/landleases/index.html)

Surprisingly, Metropolitan Water is not mentioned in the Vista Ridge contract.

The contract language is also unclear about who owns the groundwater leases. For example, the Groundwater Lease Conveyance Agreement (contract page 534) states: "Blue Water VR has acquired (i) certain lease rights which provide the lessee with groundwater resources…"

Together, the Metropolitan Water claims and contract language suggest that Blue Water does not own the groundwater leases.

The ownership question will be of special importance when the contract either is terminated or expires since SAWS expects to continue purchasing groundwater originating from the groundwater leases at an agreed-upon price. The details about how this will happen will be in the "Groundwater Supply Agreement" which is supposed to be negotiated by October 22.

Main Point: In light of the central importance of the groundwater leases to the Vista Ridge Project, it is essential for the contract to clearly document who owns the groundwater leases. If the groundwater leases are not owned by Blue Water, the contractual relationship between the parties should be in the contract.

Concern 2: ***Will Vista Ridge Be Able to Deliver 50,000 acre-feet/year of Groundwater When Their Existing Pumping Permits are Cutback due to Aquifer Depletion?***

This question is of signal importance as evidenced by the many instances of it being addressed by SAWS and Vista Ridge officials in newspaper reports and public conferences.

For example, the following is from a report in the August 13 *Texas Tribune:*

> San Antonio Water System officials are reported as saying that "they're protected from the groundwater district cutting back on the pumping because the water companies that would be pumping and transporting the water have bought up extra land and water rights [leases - not permits] in excess of 16 billion gallons a year [equal to 50,000 acre-feet/year]." (http://www.texastribune.org/2014/08/13/san-antonio-mulls-3-billion-addition-water-supply/)

Let's examine this statement in more depth.

Blue Water Systems has dedicated 50,000 acres of groundwater leases to the Vista Ridge Project. However, only 25,000 acres of those groundwater leases were used to qualify for 50,000 acre-feet/year of pumping permits (*also called operating permits*) BECAUSE the groundwater district allows 2 acre-feet/year of groundwater to be pumped for every acre of land owned or leased. (I will express this as 2 acre-feet/year/acre).

When pumping cutbacks start, the groundwater district's primary method to cutback the pumping will be to lower the acre-feet/year that can be pumped per acre for each permit.

To understand what will happen when the cutbacks start, let's hypothesize that the groundwater district reduces the permit amounts from 2 acre-feet/year/acre to 1.5 acre-feet/year/acre. That would reduce Vista Ridge Project's maximum groundwater production to 37,500 acre-feet/year from the 25,000 acres of leases they used to qualify for the permits (1.5X25,000 = 37,500).

To increase the groundwater production back to 50,000 acre-feet/year, Vista Ridge would have to request new pumping permits equal to 12,500 acre-feet/year. They would do this by using 8,333 of their extra 25,000 acres to qualify for the permits.

What Vista Ridge is counting on is that the groundwater district will automatically approve their new pumping permit requests.

The problem is that nowhere in the groundwater district's rules does it say: "We approve all permit requests." Instead, Rule 7.6 lays out what the board considers when considering permit requests:

> RULE 7.6: (*Considerations for Granting Permits*) "In deciding whether or not to issue a well, drilling, transport, permit amendment or <u>operating [pumping] permit</u>, and in setting the terms of the permit, the Board will consider Chapter 36, Texas Water Code, the District Act and rules, the application, and all other relevant factors, including, but not limited to, (1) the management plan; (2) the quality, quantity, and availability of alternative water supplies; (3) the impact on other landowners and well owners from a grant or denial of the permit, or the terms prescribed by the permit including whether the well will interfere with the production of water from exempt, existing or previously permitted wells and surface water resources; (4) whether the permit will result in a beneficial use and not cause or contribute to waste; and (5) if the applicant has existing production permits that are underutilized and fails to document a substantial need for additional permits to increase production. If no person notifies the general manager of their intent to contest the application, and if the general manager does not contest the application, the application will be presented directly to the Board for a final decision. <u>The Board may grant or deny the application</u>, in whole or in part, table or continue the application to hear additional evidence, or refer the application to the hearings examiner for a complete hearing. Applications will not be considered administratively complete until all applicable fees are paid to the District."
> (http://www.posgcd.org/wp-content/uploads/2011/10/RulesAmended_69141.pdf)

Rule 7.6 does not support Vista Ridge's assumption that it will always have the pumping permits required to deliver 50,000 acre-feet/year of groundwater to San Antonio – no matter the level of aquifer depletion.

Another question is when will Vista Ridge's existing pumping permits be cutback. The answer to that question is in groundwater district Rules 16.4–16.7 (http://www.posgcd.org/wp-content/uploads/2011/10/RulesAmended_69141.pdf).

The rules define three threshold levels (1, 2, and 3) for triggering responses to aquifer depletion along with the required responses.

Strikingly, on the very first day that Vista Ridge starts transporting groundwater to San Antonio, Threshold Levels 1 and 2 will be exceeded.

The groundwater district's general manager has predicted that Threshold Level 3 will be reached within ten years after Vista Ridge starts its full pumping at which time the groundwater district can begin cutbacks of pumping permits.

Main Point: When the pumping cutbacks occur, the automatic approval of new pumping permit requests appears to be an important expectation of Vista Ridge. Since the groundwater district's rules do not support that expectation, it is reasonable to believe that someone has convinced Vista Ridge that automatic approval is the case. One way to determine if Vista Ridge's expectation reflects reality is to request a notarized statement from the Post Oak Savannah Groundwater Conservation District's Board of Directors stating that "all pumping permit requests will be approved." If that statement is not received, the ability of Vista Ridge to provide a reliable supply of groundwater is questionable.

Concern 3: *Blue Water Systems' Transport Permit May Expire in 2034 While the Contract Term Expires in 2049*

At the September 9 meeting of the Post Oak Savannah Groundwater District, Blue Water Systems requested that the expiration date for their Transport Permit be extended by ten years. The transport permit is required to export groundwater from Burleson County.

Blue Water Systems requested the ten-year extension because they wanted their pumping and transport permits to have the same expiration date. At present, the transport and pumping permits expire in 2034 and 2044, respectively, although the Vista Ridge contract will terminate in 2049.

The extension request was denied by the groundwater district.

This problem is addressed in the Groundwater Lease Conveyance Agreement in 'Modifications of Permits' (contract page 552):

> "Blue Water will obtain from the POSGCD [the groundwater district], at their sole cost and expense, certain amendments or clarifications to the Permits, unless otherwise expressly set out below, as soon as possible following the Effective Date of this Agreement:…b. Extending the term of the Transportation Permit to coincide with the current term of the Operating [Pumping] Permit…"

<u>The pertinent questions are</u>:

1. Will the groundwater district grant the request to extend the transport permit by ten years when asked the second time?
2. What happens if the ten-year extension for the transport permit is not obtained?

<u>Concern 4</u>: ***The Contract Term May be Reduced to 25 Years if the Pumping and Transport Permits are not Extended***

The situation becomes even more complex for the Vista Ridge Project as outlined in Subparagraph (e) of Section 14 of the Groundwater Lease Conveyance Agreement (contract page 552). Subparagraph (e) states:

> "Within five (5) years following Commercial Operations Date (as defined in the WPA), extending the term of the Operating [Pumping] Permit to a date that is 30 years from the date of such modification and extending the term of the Transportation Permit to run coterminous with the end of the term of the Operating [Pumping] Permit. In the event the Permits are not modified in the manner set out in this subparagraph e., the Base Unit Groundwater Price will be adjusted to a sum which, when produced and transported at the volumes allowable under the Permits, for the time periods for which the Permits provide, will cause there to be no default under the Senior Debt Financing Agreements or any economic reduction to Vista Ridge's return of and on its investor's equity investment based on the formulas attached hereto as Exhibit "J"."

The problem that Subparagraph (e) addresses is that if the actual delivery of groundwater to San Antonio begins in 2019 (defined as the Commercial Operation Date), there will only be 25 years left on their pumping permit (expires in 2044) and the transport permit will have only 15 years remaining if it is not extended to 2044 (see Concern 3), but the contract will extend for 30 more years.

There is no guarantee that the groundwater district will approve the requests to extend the pumping and transport permits.

In fact, the wording of Subparagraph (e) suggests that Vista Ridge knows that the permit extension requests may be denied and are planning for the contract term to be reduced to 25 years or less.

<u>Main Point</u>: This planned-for reduction in the contract term is important to understand because it reflects the fact that the groundwater availability to San Antonio depends not only on the groundwater leases but also the groundwater district doing what Vista Ridge wants them to do.

SECTION 2 – CLARIFICATION OF TWO MISSTATEMENTS:

"3,400 Groundwater Leases in Burleson County"

Many newspaper reports and public conferences concerning the Vista Ridge Project contain the misstatement that 3,400 groundwater leases in Burleson County are associated with the project.

Let's look at the numbers.

On contract page 475 is the list of 3,423 groundwater leases assigned to Blue Water Systems. Be aware that only part of those will be dedicated to the Vista Ridge Project – and also the leases are in Burleson and Milam Counties.

An analysis of the groundwater leases provides the following data:

- Total acreage = 84,381 acres
- 50% of the leases are less than 3.6 acres
- There are only 1,809 different individuals listed as lessors for the 3,423 leases. One individual was listed as the lessor for 93 different leases.

Since only 59% of the total 84,381 acres of leases will be dedicated for the Vista Ridge Project (the contract states 50,000 acres), we can estimate that 59% of the 1,809 individual lessors will own the acreage dedicated to the project; that calculates to be 1,067 people.

And because only 25,000 acres were needed to qualify for the 50,000 acre-feet/year of pumping permits, only 533 lessors (1/2 of the 1,067) will receive royalty payments from the Vista Ridge Project.

The 533 lessors represent only 1% of the total population of the Burleson/Milam Counties – yet the Vista Ridge Project will export 100% of the state-defined-available Carrizo-Wilcox Aquifer groundwater from the two counties.

"12 Times the Total Amount of Water in Texas Lakes"

In the following posting from the SAWS website, you will find the misstatement that the Carrizo and Simsboro aquifers in Burleson County "…containing over 12 times the amount of water in all Texas lakes combined."

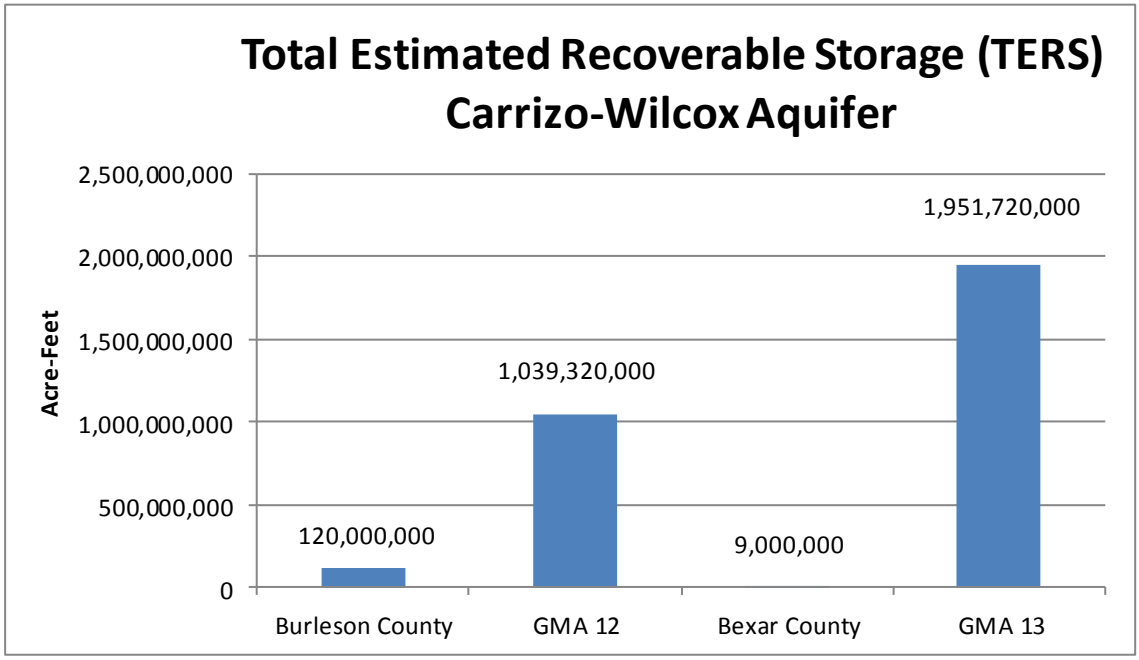
> **Vista Ridge Pipeline - Frequently Asked Questions**
>
> **5. Is the source of this water reliable?**
>
> Yes. The Carrizo and Simsboro aquifers in Burleson County are not, and have never been, under drought restrictions. The aquifers are full and are considered drought resistant, containing over 12 times the amount of water in all Texas lakes combined. The source of water is protected by a local water district and permitted for 30 years through more than 3,400 leases with local landowners in Burleson County.
>
> (http://www.saws.org/your_water/waterresources/projects/vistaridge/FAQ.cfm)

The "12 times the amount of water in all Texas lakes combined" misstatement originates from a new number called "Total Estimated Recoverable Storage" (TERS).

TERS has been calculated by the Texas Water Development Board for every aquifer in every county. TERS represents the TOTAL amount of groundwater stored in the aquifer – that is, ALL OF IT including the brackish groundwater.

If the entire TERS is pumped, the aquifer will be irreparably damaged.

The following graph allows a comparison of TERS for the Carrizo-Wilcox Aquifer in and around Bexar and Burleson Counties.



First, according to my source (http://www.texasalmanac.com/topics/environment/lakes-and-reservoirs) - the total storage capacity of Texas lakes is 40 million acre-feet. So, the Burleson County Carrizo-Wilcox TERS is 3 times the total lake storage – not 12.

But of more interest is the significant amount of Carrizo-Wilcox groundwater stored in Bexar County and surrounding counties.

When you compare GMA 12 (the counties which include and are close to Burleson County) versus GMA 13 (the counties which include and are close to Bexar County), you can see that there is almost 1 **B**illion more acre-feet in the Carrizo-Wilcox Aquifer in the counties closer to San Antonio.

And a more astounding 2.8 **B**illion acre-feet is the amount of groundwater (determined as TERS) stored in all of the aquifers near Bexar County -– and that is *70 times the total lake storage in Texas*.