

3443 E. Lee Street
Tucson, AZ 85716
August 4, 2016

Mr. Toney King, Mayor
Mr. Bradley Hamilton, City Engineer and Director of Public Works
City of Benson
120 W. 6th Street
Benson, AZ 85602

Dear Mayor King and Mr. Hamilton:

I would like to bring the following issue to your attention regarding the water supply for the proposed Villages at Vigneto development. In March 2005, Errol L. Montgomery and Associates completed a study for the City of Benson on arsenic concentrations in city wells (figure attached). The results of that study would indicate that elevated arsenic levels will likely be encountered in the eastern portion of the proposed Vigneto well field. I have contoured the concentrations of arsenic in Benson City wells and projected them into the Vigneto well field area to illustrate this (figure attached). The current EPA limit on arsenic is 10 µg/L (10 parts per billion, red contour), reduced in 2006 from the prior limit of 50 µg/L (50 ppb).

Of concern is the 8 µg/L (8 ppb) level in former Whetstone Ranch Production Well 1 (PW1), which would be Vigneto's initial production well. Data from city wells indicate that arsenic in groundwater increases to the east across the Benson area, presumably because of the increased influence of groundwater coming from the Upper San Pedro basin that has passed through mineralized areas. Production well PW1 is at the far west end of the proposed Vigneto well field, making it probable that arsenic in the eastern portion of the field would exceed the EPA standard.

This possibility needs testing to determine potential limits on Vigneto's water supply. Well T1 (ADWR # 55-543338), which would be Vigneto production well 7, should be tested first. The <50 µg/L value for this well indicates that it was evaluated under the prior EPA arsenic standard and has not been reevaluated under the new standard. Second, test wells should be drilled to the east of this well, most importantly at the far eastern end of the proposed well field, to determine the arsenic gradient across the field. These tests should be completed before large-scale construction begins in case arsenic concentrations require modification of Vigneto's design and scale.

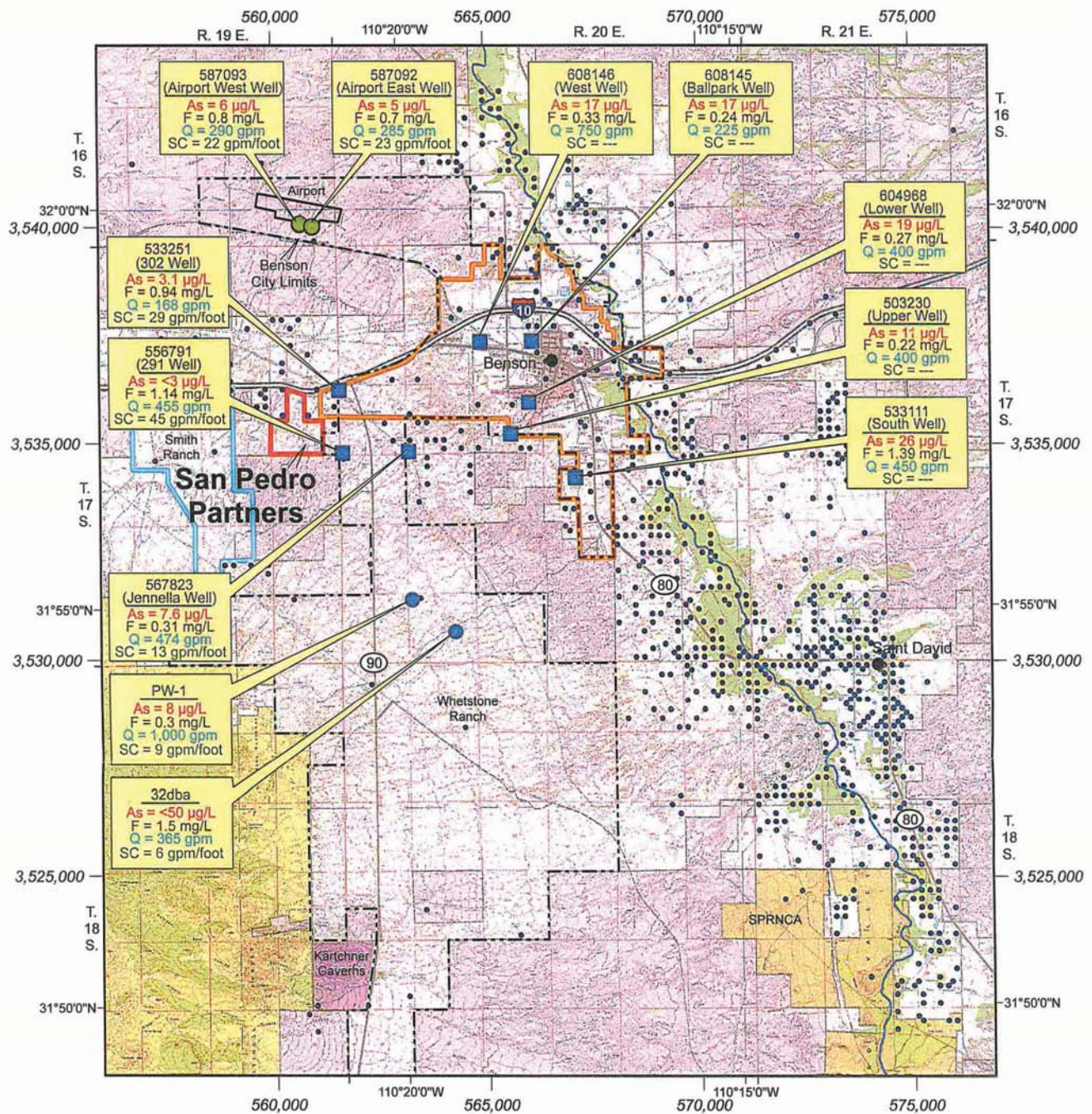
Given the reliability of the data, I would expect the City of Benson and El Dorado Benson to take this concern seriously and work with ADEQ and ADWR as needed. If arsenic levels in the proposed Vigneto well field are found to exceed the EPA standard, El Dorado would need to import water, build a water treatment facility to reduce arsenic concentrations, or devise a mixing strategy for water of lower and higher arsenic levels. Determining the necessity of such actions prior to development seems essential.

Sincerely,



Norm "Mick" Meader
Co-President, Cascabel Conservation Association
(520) 323-0092
nmeader@cox.net

cc: Mr. Michael T. Reinbold, El Dorado Benson, LLC
Mr. Trevor Baggione, Director, Water Quality Division, ADEQ
Mr. David Christiana, Supervisor, Water Quality Unit, ADWR



EXPLANATION

- City of Benson Well
- City of Benson Airport Well
- City of Benson/Whetstone Ranch Production Well
- Other Wells in ADWR "55" Registry
- Well and Identifier
- As = 8 µg/L — Arsenic, in micrograms per liter
- F = 0.3 mg/L — Fluoride, in milligrams per liter
- Q = 1,000 gpm — Pumping Rate, in gallons per minute
- SC = 9 gpm/foot — Specific Capacity, in gallons per minute per foot of drawdown (--- = Not Measured)
- BLM Land (San Pedro Riparian National Conservation Area)
- State Land (includes Kartchner Caverns)
- Coronado National Forest Land
- Private Land

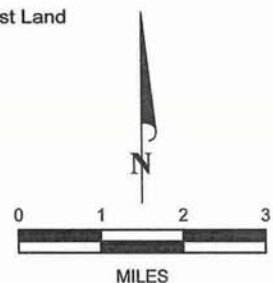
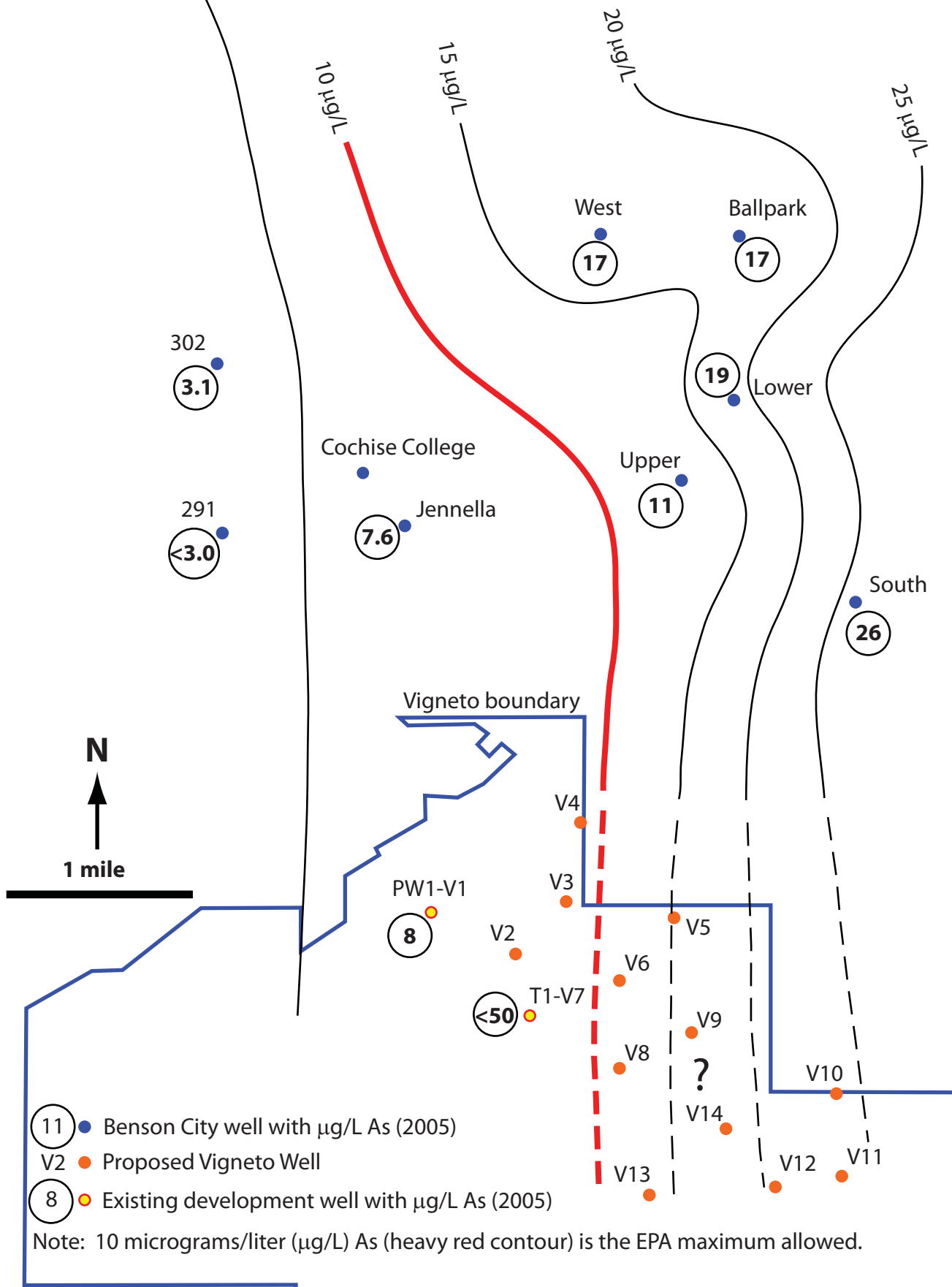


FIGURE 1. LOCATION MAP



Arsenic (As) in Benson Area Water Micrograms/Liter ($\mu\text{g/L}$) With Respect to Proposed Vigneto Well Field



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Mr. Trevor Baggione, Director
Water Quality Division
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Mr. David Christiana, Supervisor
Water Quality Unit
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Mr. Baggione and Mr. Christiana:

As you may be aware, El Dorado Holdings, LLC is proposing to build the Villages at Vigneto development on the west side of Benson (map attached). This development would encompass more than 12,000 acres and include up to 28,000 homes, bringing 70,000 people to Benson over the next 20 years.

You may also be aware that Benson-area water has a high arsenic content and that Benson had to abandon its central well field in 2006 and move its water supply to the west to comply with the new EPA arsenic standard (10 µg/L). The proposed Vigneto well field would likely encounter the same problem. I am including a letter to Benson city officials with figures illustrating this.

I am unsure of ADEQ and ADWR responsibilities in addressing this potential problem. It would seem that ADEQ and ADWR should work with El Dorado and the City of Benson to develop a plan to test water from strategic positions in the proposed well field prior to beginning construction. At least one to two new test wells would need to be drilled for this purpose.

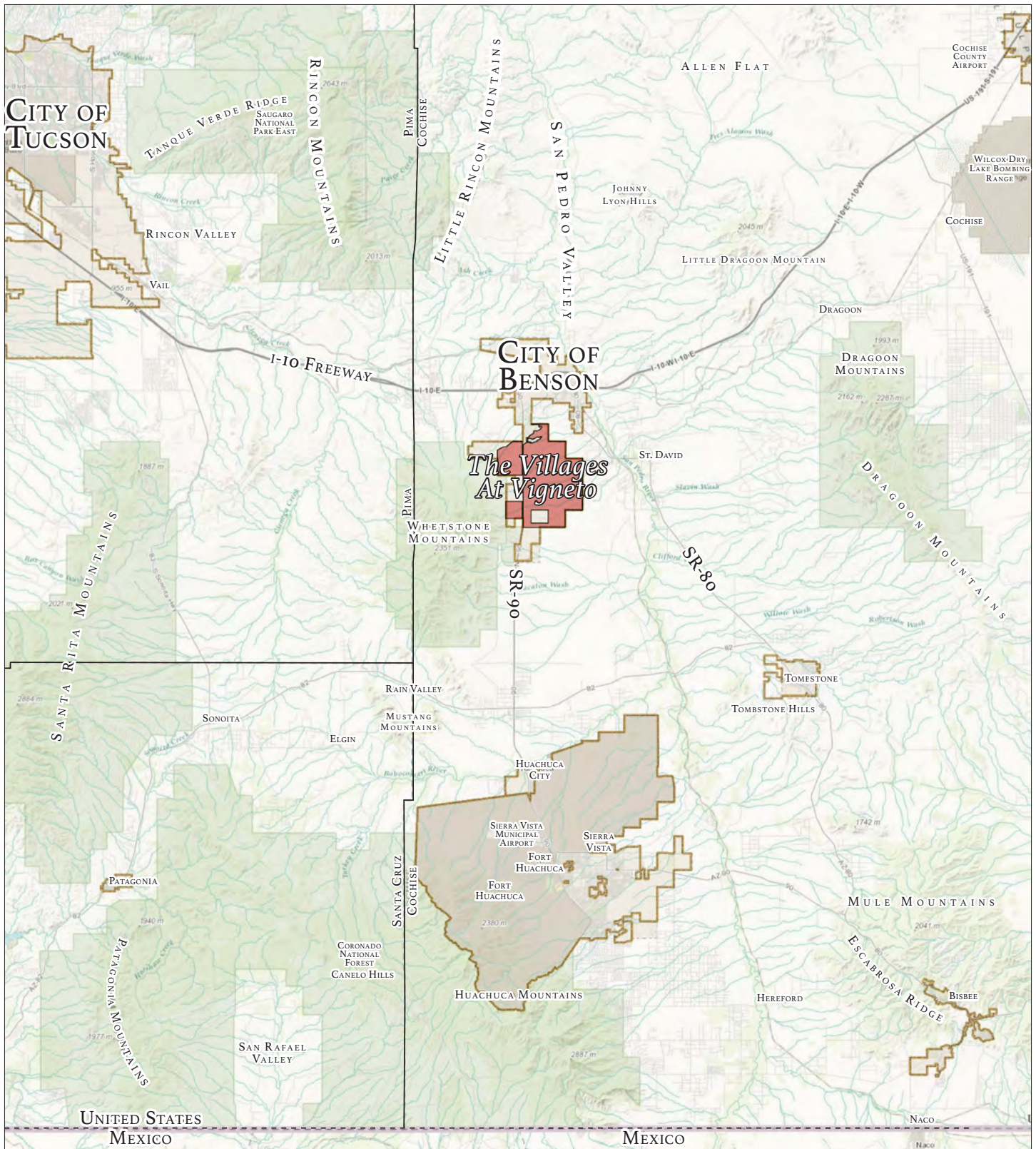
The results of such testing could require adoption of additional water treatment facilities or acquisition of water from other sources and revision of the development plan. The scale of this development and its water requirements would seem to merit ADEQ/ADWR attention to ensure an adequate supply of safe water. I assume such involvement is within the purview of ADEQ and ADWR.

Thank you for considering this issue.

Sincerely,



Norm "Mick" Meader
Co-President, Cascabel Conservation Association
(520) 323-0092
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Disclaimer: This exhibit has been prepared for general planning and illustrative purposes only and is not to be relied upon for actual dimensions. The elements shown are diagrammatic and shall not be construed as a final representation of engineering design.



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The Villages at Vigneto

EXHIBIT 2: REGIONAL CONTEXT MAP