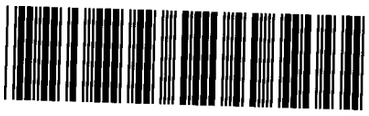

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LAW OFFICES OF
LOUIS T. ROSENBERG, P.C.
A PROFESSIONAL CORPORATION

LOUIS T. ROSENBERG
Attorneys and Counselors at Law

ROBERT L. WILSON, III
Attorneys and Counselors at Law

De Mazieres Building
322 Martinez Street
San Antonio, Texas 78205
Phone (210) 225-5454
Fax (210) 225-5450

E-mail: firm@ltrlaw.com
Website: www.ltrlaw.com

SONIA CANTU ROSENBERG
Office Manager/Paralegal

SHELLI L. BAKER
Sr. Admin. Assist./Paralegal

July 20, 2005

Honorable Cassandra J. Church
Administrative Law Judge
State Office of Administrative Hearings
300 W. 15th Street
Austin, Texas 78701

Via Hand Delivery

RE: SOAH Docket No. 582-03-3725; TCEQ Docket No. 2003-0664-UCR, ***In Re: The Application of Bexar Metropolitan Water District To Amend Water CCN No. 10675 in Bexar County***, Before the State Office of Administrative Hearings

Dear Judge Church:

Pursuant to your Order No. 9 entered in the above-numbered and styled case on June 16, 2005, I have enclosed Applicant, Bexar Metropolitan Water District's, direct-case evidence consisting of two binders, which, respectively, contain the following items:

1. BexarMet's Pre-filed, direct testimony; and
2. BexarMet's Exhibits 1-22.

The Proposed Order of Witnesses required by your Order was filed yesterday, and served upon all parties on the service list.

As set-forth below, this correspondence and the accompanying enclosures have been served upon the representative of every other party and the Chief Clerk of the TCEQ.

Thank you for your attention to this matter. Please feel free to contact me with questions or concerns.

Sincerely,

LAW OFFICES OF LOUIS T. ROSENBERG, P.C.

Robert L. Wilson III
Attorney for Applicant, Bexar Metropolitan Water District

Enclosure: ***As stated above.***

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Cc: ***All Via Hand-Delivery***

Todd Galiga, Esq.
TCEQ– Legal Services
12100 Park 35 Circle, Building A– 3rd Floor
Austin, Texas 78711
Attorney for the Executive Director of the TCEQ

Blas Coy, Esq.
TCEQ-PIC
12100 Park 35 Circle, Building F– 4th Floor, Room 4301
Austin, Texas 78711
Public Interest Counsel of the TCEQ

LaDonna Castanuela
Chief Clerk, TCEQ
12100 Park 35 Circle, Building F– First Floor, Room 1101
Austin, Texas 78711

David L. Earl, Esq.
Earl & Associates
111 Soledad, Suite 1111
San Antonio, Texas 78205
Attorney for Protestant, BSR Water Company

Adolfo Ruiz, In-House Counsel
Bexar Metropolitan Water District

SOAH Dkt. No. 582-03-3275
TCEQ Dkt. No. 2003-0664-UCR
In Re: The Application of Bexar Metropolitan Water District to Amend Water CCN No. 10675 in Bexar County

Bexar Metropolitan Water District's Prefiled Direct Testimony of:

(1) Michael J. Albach
Deputy General Manager for Water Resources
Bexar Metropolitan Water District
2047 W. Malone
San Antonio, Texas 78225
Phone: (210) 357-5707

(2) Johnnie Terrazas, P.E.
Director of Engineering and District Chief Engineer
Bexar Metropolitan Water District
2047 W. Malone
San Antonio, Texas 78225
Phone: (210) 357-5708

(3) Darrell Brownlow, M.S., Ph.D.
Carrizo Consulting, L.P.
12425 FM 775
Floresville, TX 78114
Phone: (830) 216-4202

(4) Jesse Morin
Director of Finance
Bexar Metropolitan Water District
2047 W. Malone
San Antonio, Texas 78225
Phone: (210) 354-6522

(5) Samuel W. Jones, PE
Sam Jones Consulting, Inc.
101-B East Street
P.O. Box 427
Hutto, Texas 78634
Phone: (512) 759-2738

(6) Melissa Wilson
Executive Assistant/Paralegal
Bexar Metropolitan Water District
2047 W. Malone
San Antonio, Texas 78225
Phone: (210) 354-6503
(As Custodian of Records)

SOAH DOCKET NO. 582-03-3275
TCEQ DOCKET NO. 2003-0664-UCR

IN RE: THE APPLICATION OF	§	**BEFORE THE STATE OFFICE**
BEXAR METROPOLITAN	§	
WATER DISTRICT TO AMEND	§	**OF**
WATER CCN NO. 10675	§	
IN BEXAR COUNTY	§	**ADMINISTRATIVE HEARINGS**

BEXAR METROPOLITAN WATER DISTRICT's

PREFILED DIRECT TESTIMONY OF

MICHAEL J. ALBACH

Q. Please state your name and business address for the record.

A. Michael J. Albach, I office at 2047 W. Malone, San Antonio, Texas 78225

Q. By whom are you employed and in what capacity?

A. I am employed by Bexar Metropolitan Water District ("BexarMet") as its Director of Operations. I was formerly employed as BexarMet's Deputy General Manager for Water Resources. I have been employed by BexarMet since 1996.

Q. To whom do you report in the BexarMet chain of command?

A. My direct supervisor is F. Gilbert Olivares, BexarMet's General Manager. Mr. Olivares is directly responsible to BexarMet's elected Board of Directors, who serve at the pleasure of the District's residents and rate payers. A copy of the BexarMet organizational chart is attached to the record as ***Exhibit 3.***

Q. What is the purpose of your testimony in this cause?

A. I will testify concerning:

a. Requests for BexarMet's Service in the proposed area

b. Why BexarMet filed this application

c. BexarMet's resources available for public service

d. Adequacy of service currently provided to the requested area

e. The need for additional service in the proposed area

f. The effect of granting the CCN on BexarMet

g. The ability of BexarMet to provide adequate service

h. The feasibility of obtaining service form an adjacent retail public utility

i. Environmental integrity of BexarMet service to the proposed area

j. The probable improvement of service to consumers in the area resulting from the granting of the CCN Amendment to BexarMet;

k. The probable lowering of cost to consumers in the area resulting from granting the CNN Amendment to BexarMet

l. Texas Administrative Code 13.246(e) criteria

Q. Did you prepare and file the CCN amendment application marked as Exhibit 1 to this record?

A. No, it was prepared and filed by Charles Aherns, who is no longer employed by Bexar Metropolitan Water District.

Q. Have you reviewed the Application, all amendments and attachments?

A. Yes, I have personally reviewed the application and attest to the truth of all statements contained therein.

Q. Have you attached a copy of the application to your testimony and tendered it to the record in this cause as ***Exhibit 1***?

A. Yes.

Q. Have you attached and tendered a map showing the proposed service area to the record as ***Exhibit 2***?

A. Yes.

Q. Do you sponsor application and map as exhibits in this record?

A. Yes.

Q. What qualifications do you have to present expert and fact testimony in this case?

A. As BexarMet's Director of Operations, I have personal knowledge concerning the

District's existing service areas, its water resources, its plans for obtaining additional water sources, its management and its ability to expand operations. In addition, my education, training and experience qualify me to render the opinions contained in this pre-filed testimony. A current copy of my biographical sketch is appended to the record as ***Exhibit 4***. As reflected in the bio, I have been in the water business for approximately two decades.

BexarMet's Service to its Proposed Area

Q. Please discuss BexarMet's plans for service to the proposed CCN area.

A. BexarMet plans to serve the proposed area primarily, if not exclusively, with groundwater procured from the Middle Trinity Aquifer. Ultimately all new development would be served from a system of transmission mains designed to bring such groundwater to customers in the proposed area from municipal pumps located within or adjacent to the proposed area. Depending upon the location of a particular developer/service applicant, an interim on-site groundwater system could be constructed until the long-term regional water supply is available. As another alternative, BexarMet could use water from existing facilities in its adjacent, presently-certificated Timberwood Park service area to temporarily supply new developments in the proposed area. Timely service to the customer should be paramount while the utility takes steps to bring the better resources on line in an orderly, cost-effective basis.

Q. Is BexarMet serving the general area now?

A. BexarMet is presently serving areas directly to the south and west of the

proposed area, but has made no affirmative efforts to serve the proposed area, itself. Instead, BexarMet has deferred to this proceeding, and TCEQ authorization to serve in accordance with section 13.242, Texas Water Code. However, several requests for service have been received by BexarMet, and we are ready, willing and able to accommodate those requests in a timely manner.

Requests for BexarMet's Service

Q. Describe the requests for service BexarMet has received concerning the proposed CCN area?

A. BexarMet has received numerous requests to provide service to various portions of the proposed area. These requests have been made both telephonically and in writing by, among others: Pape-Dawson Engineers, Brown Engineering Co., Norfolk Properties, Ltd., Denton Communities, Gordon Hartman Homes / W.F. Castella and Associates, and Bitter Blue, Inc. Copies of the written requests and BexarMet's responses are collectively tendered to the record as ***Exhibit 5***. In addition, I and other BexarMet staff have conducted personal conferences with many of the requestors/applicants, so as to ascertain their specific needs for water service, and formulate the manners in which BexarMet may serve those needs.

Why BexarMet filed this application

Q. Why has BexarMet filed this application?

A. It has been BexarMet's practice to request a CCN amendment wherever BexarMet utility service would benefit the public, and especially in

unserved/undeserved areas abutting (contiguous with) existing District CCN areas. This application was not filed to meet the specific service request of an individual landowner or group of landowners, but instead to meet the growing retail water utility needs of a defined geographic area– specifically north Bexar County. Portions of the proposed service area that are not covered by a specific written request are key in that the addition of such areas will assist in spreading the development costs to bring water and infrastructure to existing and future growth areas. The entire 5,543 acre area made the subject of this application is a prime growth region in the greater San Antonio metropolitan area. Presently, development of this area is restricted by the limited availability of water. With a reliable and adequate water supply, such as the one BexarMet would bring into the area, it is anticipated that significant residential and commercial growth will occur in the proposed CCN area. BexarMet is dedicated to developing the regional water resources necessary to respond to the long-term growth forecast, as predicted in the report prepared by the SCTRWPG ("Region L"). To justify its investment in water supply contracts and construction of delivery systems, BexarMet needs customers and their associated revenue streams. BexarMet is poised and is developing much of the retail infrastructure in the area surrounding the proposed CCN area. In the short-term, only BexarMet has the technical and financial resources to develop available resources to meet current service needs. BexarMet has already expended a great deal of money and resources to bring an adequate long-term water supply to the region, including Oliver Ranch and

Timberwood Park, which abut the proposed CCN area to the south. The development of infrastructure and the associated water supply is not as cost-effective on a smaller scale, so granting this CCN to BexarMet is the only logical course of action for the TCEQ.

BexarMet's resources available for public service

Q. What resources does BexarMet have to devote to serving the public in its proposed CCN area if its application is granted?

A. BexarMet is a general law district and municipal corporation created by a special act of the Texas Legislature in 1945. The District presently provides retail water service to more than 80,000 connections. BexarMet has over 300 employees that are well-versed in all facets of water utility operations. The District has its own experienced and qualified in-house engineering, construction, customer service, billing, accounting, legal and management staffs. When it is most efficient and cost effective to do so, BexarMet, designs and constructs its own capital improvements. Where this does not prove to be the case, BexarMet has access to some of the finest engineering firms and contractors in Texas. We have worked with those firms for many years building hundreds of miles of pipeline, ground water supply projects, and a state-of-the-art surface water treatment plant on the Medina River. Additionally, BexarMet has already secured a "look-see" Letter of Intent with WECo, which would allow us to contract for an enormous volume of Middle Trinity Aquifer ground water specifically earmarked to serve to the proposed CCN area and to supplement supplies for our proximate existing areas.

BexarMet has existing groundwater supplies, wells, tanks and delivery/storage infrastructure in the area and the ability to develop additional groundwater supplies and facilities if necessary. BexarMet has evidenced its dedication to bringing reliable water utility service to this portion of Bexar County over the years by spending millions of dollars to acquire and upgrade existing water systems and to construct additional long-term service capacities to bring water supplies into the area, including the areas of Stone Oak, Hollywood Park and Hill Country Village. The Board and BexarMet's senior management have dedicated the financial, managerial and technical resources necessary to service the north Bexar County area on a priority basis. Having undertaken this obligation and voluntarily assumed the burden of providing continuous and adequate servicein the area, BexarMet believes that it should be given the license to finish the job without the late intervention of a disgruntled land owner posing as a water utility and looking for a new revenue source. The protestant is not a water utility, and could better serve the area by developing wholesale supplies and leaving retail service responsibilities to others better suited and more experienced in this aspect of the industry.

Q. Please identify BexarMet's existing water sources, which will be utilized to serve the proposed CCN area.

A. BexarMet presently maintains four high capacity Middle Trinity Aquifer wells in its existing Timberwood service area. These wells are located at the "Wild Turkey" station, and are strategically situated within the Timberwood Park

subdivision. More particularly, the Wild Turkey station is a 13 acre site containing two wells which produce between 375-425 gallons per minute ("GPM"), and two wells producing 800 GPM. These production levels could be increased if necessary by re-equipping or otherwise modifying the wells. Each of the wells are permitted by the Trinity Glen Rose Groundwater Conservation District ("TGR"), the entity responsible for regulating groundwater in the proposed service area. In addition, the Wild Turkey station contains a 1 million gallon ground storage tank, and is controlled and monitored with state of the art SCADA technology. Storage is also provided by a 2.5 million gallon elevated tank located on Echo Mountain Street. Finally, BexarMet maintains multiple lower capacity wells within Oliver Ranch, including those at Poco Pass. A map of existing facilities in BexarMet's contiguous Timberwood service area is attached to the record as ***Exhibit 6***. In addition, Exhibit 2 reflects existing BexarMet wells within our contiguous, existing certificated area.

Q. What managerial resources will BexarMet devote to the proposed service area?

A. This area will become part of the whole BexarMet system. The management team identified in ***Exhibit 3*** and served by BexarMet's 300 employees will manage it. In addition, newly-added customers/ratepayers will become voters, and the electorate for BexarMet Board members. In this regard, they will be empowered to elect Board members to manage the utility in a manner they deem appropriate.

Q. What technical resources will BexarMet devote to this service area?

A. BexarMet's various managers will use their departments' resources prudently to

obtain, design and construct the facilities to provide the public in north Bexar County with a reliable supply of potable water on a priority basis. We are already doing this in our contiguous Public Water Supply Systems located in Stone Oak, Timberwood Park and Oliver Ranch, as well as our other presently-certificated areas. A map of BexarMet's existing service areas has been tendered for the record as ***Exhibit 7***.

Mr. Terrazas, BexarMet's Director of Engineering, will address his respective areas of technical responsibility in his prefiled testimony. However, I can say based upon past experience, designing and building water a system is a known science. Mr. Terrazas and his fine crews can design and construct whatever will be needed to serve this area.

From a water resources standpoint, I intend to ensure that the development of a supply adequate to service the proposed area is procured in a cost-effective and environmentally responsible manner. BexarMet has demonstrated its dedication to responsibly utilizing the Middle Trinity Aquifer and other potential resources by employing such highly-qualified consultants as Dr. Brownlow to furnish us with information and technical expertise. Our production and transmission facilities will be designed to high standards, and we will utilize state-of-the-art SCADA technology to monitor the system and provide prompt attention to customer service needs.

Criteria of Code 13.246 (c) and 30 TAC 291.102(d) (1)-(8) / Adequacy of service currently provided to the requested area

Q. Please discuss the adequacy of the service currently provided to the requested

area.

A. At this time, there is no retail water service being provided to the proposed area, despite the rapid growth of the area planned by developers. BexarMet, as the logical purveyor to serve this area (in the context of regionalization), seeks to provide this much-needed service on a retail basis. The protestant, BSR Water Co., is not a utility, and has never provided service to the proposed area. In addition, BSR has wisely withdrawn its application to obtain a CCN which would authorize service to the proposed area. A copy of the SOAH Order dismissing BSR's Application is attached to the record as ***Exhibit 10.***

Need for additional service

Q. Is there a need for additional service in the proposed area?

A. Absolutely. It is neither environmentally sound, nor cost-effective to allow a soon- to- be high density area to be unserved or undeserved as the proposed area presently is. If BexarMet does not acquire the requested CCN, this area will be served by a non-uniform cross-section of second tier, small water systems, or by individual domestic wells, especially because there is not a competing application filed by any other utility. The prospect of allowing this area to be unserved or underserved controverts the Legislature's promotion of regionalization, and logic.

Effect of granting the CCN on the recipient

Q. What would be the effect of granting the CCN on BexarMet?

A. BexerMet would be able to continue with its plans to develop a large-scale supply

of Middle Trinity Aquifer groundwater to serve this region. Such a supply will consist of groundwater produced from BexarMet's existing wells located in areas abutting the proposed area, groundwater BexarMet is able to acquire from within the proposed area by drilling its own wells or by purchasing water from other well owners, and from water transported from outside the service area, which BexarMet is able to wheel into the region through existing transmission mains abutting the proposed CCN area. To justify its expenditure of resources for this regional project, BexarMet requires a long-term customer base to support the District's bonds. If the TCEQ does not grant BexarMet a CCN for the requested service area, BexarMet can only assume that the TCEQ has concluded these areas will be adequately served by domestic supply wells since there are no other retail water utilities to serve them and no competing CCN applications.

In addition, developers will want to know that the water utility to which they must look for service will really be able to serve them on a timely basis. Based upon my professional experience, developers are not interested in a promise of water utility service in 2 years while someone builds a treatment plant, transmission line and distribution system from scratch if the developer wants to put his property on the market this year. Certification of the proposed service area to BexarMet can provide developers with the certainty they need. Granting this CCN amendment will add to BexarMet's customer base in this portion of the overall BexarMet system. BexarMet's rates and impact fees are set by zones. The increased customer base will increase the economies of scale, and possibly even have an

impact on future rates and fees for this area. To the extent that BexarMet is allowed to add to its customer base, it will be adding to its revenue stream. Additional net revenues will be used to help finance capital improvements to its water systems for the benefit of its consumers. These additional revenues will allow BexarMet to service its debt on the investments in capital assets and water resources it has already made.

Effect on any retail public utility of the same kind already serving the proximate area

Q. Please discuss the effect of granting BexarMet's CCN application on any retail public utility of the same kind already serving the proximate area.

A. BexarMet does not believe that there is any material effect on any existing retail public utility of the same kind already serving the proximate area, because there are none. BexarMet is not requesting certification to the certificated service area of any existing water utility and any overlap with a current CCN is inadvertent. Virtually all persons residing or working in BexarMet's requested CCN area are not receiving water service from certificated utilities, and are dependent upon on-site water systems. BexarMet seeks certification to these properties. To BexarMet's knowledge, no existing certificated retail public water utility has a pending application to amend its respective CCN to include any portion of the proposed BexarMet service area. Protestant, BSR Water Co., (an existing CCN holder) is not a retail public utility at all, but a small domestic water system supplied by groundwater. BSR has the physical capacity to serve only its principal's own ranch property, if even that. At this time, and as reflected by

Exhibit 10, BSR does not have a CCN amendment application pending at the TCEQ, which evidences a lack of desire to expand their scope of "utility" operations. In short, BSR is not a retail public utility of the same kind already serving the proximate area. In fact, BSR does not currently own or operate a public drinking water system providing potable domestic retail water utility service to the public for compensation. As such, BexarMet's application could not adversely affect BSR, and granting BexarMet's CCN application at this time can have no immediate effect on the BSR, since BSR is not in the retail public water utility business anyway. SAWS, the only public water utility even remotely close to the proposed area, does not oppose BexarMet's application.

Q. Identify BexarMet's existing Public Water Supply System in the vicinity of the proposed service area?

A. BexarMet's Timberwood Service Area, PWS # 0150270, is contiguous with the proposed service area, and abuts it to the South and West. This PWS serves the Timberwood Park and Oliver Ranch Subdivisions, and was discussed in detail above. The Timberwood PWS appears on the District map depicted on ***Exhibit 7***.

The ability of the applicant to provide adequate service

Q. Please discuss BexarMet's ability to provide continuous and adequate service to the proposed service area.

A. Once again, BexarMet is a large public utility in operation since 1945 with over 80,000 accounts and 300 employees that are well versed in all facets of water utility operations. BexarMet has existing groundwater supplies in the area and the

ability to develop or contract for additional groundwater supplies if necessary. BexarMet has evidenced its dedication to bringing reliable water utility service to this portion of Bexar County over the years by spending millions of dollars to acquire and upgrade existing water systems and to construct additional long-term service capacities. Some areas within the application area could be served immediately (those located adjacent to existing BexarMet facilities). Major water transmission lines are planned to be constructed that will provide water to the heart of the growth center of the application area in near term. Elevated storage and water production capacities are in close proximity. Interim service could be provided to any portion of the proposed area within six months of an applicant becoming qualified for service. Such interim service would be provided through the use of Middle Trinity Aquifer groundwater.

Q. Please identify BexarMet's contemplated or potential water sources, which may be utilized to serve the proposed area.

A. BexarMet is presently involved in negotiations with Water Exploration Company ("WECo") to secure up to 17,585 acre feet of Trinity Aquifer water, annually. This water would be supplied to BexarMet through 29 Trinity Aquifer wells referred to as the "WECo East 29." Detailed information concerning the WECo East 29 project appears in the record at ***Exhibit 8***, and is discussed at length by Dr. Brownlow. To this end, BexarMet and WECo entered into a "Letter of Intent" on June 15, 2005. The Letter of Intent is attached to my testimony as ***Exhibit 9***. BexarMet's Board is presently considering entering into a formal contract with

WECo, and will, at a minimum, discuss this possibility in very near-term Board meetings. In addition, BexarMet has plans to construct a fifth well at the Wild Turkey facility/station. This well would be expected to produce 1000gpm.

Q. Does the proposed area provide opportunities for BexarMet to develop its own new water resources?

A. Yes. Should it prove economically more efficient to do so, BexarMet could construct its own Trinity Aquifer Wells in the proposed area. These Wells would be similar to those already constructed by WECo, and would enjoy the unique hydrogeological benefits of the proximate Balcones Fault Zone and Edwards Recharge Zone. I defer to the pre-filed testimony of Dr. Darrell Brownlow regarding the reliability and availability of Middle Trinity Aquifer water underlying the proposed service area.

The feasibility of obtaining service from an adjacent retail public utility

Q. Please discuss whether it is feasible to obtain retail water service for the proposed area from an adjacent retail public utility.

A. That is the purpose of this application. As an existing retail public water utility, BexarMet is seeking to expand its CCN to enhance its abilities to bring the benefits of shared regional water service resources to the community. BexarMet's contiguous, existing water systems will serve as the nucleus for a series of transmission lines bringing water to customer demand centers as that water is needed. The goal will be to match the most reliable and cost-effective water with the point of greatest need.

No other existing retail public water utility has demonstrated that it has the willingness or the financial, managerial or technical resources to service the area. In other legal proceedings, BSR Water Co. has claimed a desire to serve the area, but BSR has no resources, no operators, no experience, and no facilities with which to do so.

Q. Does BSR water, the protestant, maintain any facilities which it may utilize to provide service to the proposed area?

A. Not to my knowledge. I understand BSR Water Company to be a venture designed to market Trinity Aquifer groundwater to BexarMet and SAWS. BSR maintains none of the infrastructure required to provide retail water service. Indeed, BSR is not a retail public utility, but a landowner providing domestic water service to his own ranch. In my estimation, BSR has obtained a CCN solely to enhance its position as an obstructionist, and as a marketer of groundwater. "BSR" stands for Bulverde Sneckner Ranch, and that is what the entity truly is–a family ranch.

Environmental integrity

Q. What will be the impact on environmental integrity from granting BexarMet's CCN application?

A. As with construction by any entity, there would be short-term disruption of soils during construction of transmission lines and distribution system infrastructure. To the extent possible, construction of distribution facilities would be timed with ongoing construction in the developments or commercial properties to be served.

Construction of transmission lines and storage tanks would be done under all applicable municipal, county, TEXDOT, TCEQ, EPA, etc. environmental remediation regulations. Current water supply demands are met with groundwater supplies subject to regulation by the TGR. BexarMet maintains permits from the TGR, and will obtain additional regulatory approvals, if necessary. BexarMet has other water resources in its other service areas that may potentially be diverted into this area as the district diversifies its long-term water resources throughout its service areas. The goal of this CCN application is to acquire a service area with a growing customer base to support the investment in the long-term water resources. As an existing water utility with the second largest customer base in Bexar County, BexarMet is committed to bringing better service to the proposed area in an environmentally-responsible manner.

Probable improvement of service to consumers in the area resulting from the granting of the certificate

Q. Please discuss probable improvement of service.

A. Where water is available at all, the proposed service area is dependent upon private, on-site domestic, water wells. Having water where there was none is a more than a probable improvement in service. In addition, the numerous service requests received by BexarMet (see Exhibit 5) demonstrate the need for service in this area.

Probable lowering of cost to consumers in the area resulting from the granting of the

certificate

Q. Please discuss the probable lowering of cost to consumers in the area resulting from the granting of the certificate.

A. The immediate intuitive answer is that there will be no lowering of cost to consumers who have on-site water systems who switch to BexarMet water service and will now be paying a monthly water bill. However, this may not be necessarily true on a case-by-case basis. It may be cheaper to convert to BexarMet water service than to pay the monthly bills to operate an on-site water system, including the electricity costs, water treatment chemicals, and repetitive water well repair bills. Convenience and reliability may outweigh mere dollars for some individuals.

Code 13.246(e) criteria

Q. What efforts has BexarMet taken to extend retail public water utility service to any economically distressed areas located within any areas certificated to the district?

A. After the TCEQ's predecessor agencies failed to act for several years, BexarMet went forward and acquired a notorious investor-owned utility in South Bexar County (Windy's Water Works) that had stifled economic development in the area through its inability to provide affordable drinking water for residential or commercial use. At the same time BexarMet acquired other neighboring water systems to develop a coordinated plan of regional improvements for the drinking water needs of South Bexar County and North Atascosa County to bring these

citizens out of the near third world conditions that had prevailed for many years. Although many local, state and federal officials promised to help, that assistance never came. BexarMet made the commitment and carried it out on its own. The south side of San Antonio has better, more reliable water than it ever had, water from a state-of-the-art ultra-filtration facility located on the Medina River.

Q. What actions has BexarMet taken to enforce the rules adopted under Texas Water Code 16.343?

A. The rules in question relate: (a) to assuring that adequate and safe drinking is available to residential areas, (b) septic systems and (c) subdivision platting. To the extent the rules promulgated pursuant to Texas Water Code § 16.343 relate to public drinking water, BexarMet has adopted and is enforcing them by fully complying with Chapter 341 of the Texas Health and Safety Code and the TCEQ Chapter 290 rules. BexarMet's own in-house policies and procedures are designed to meet or exceed the TCEQ's health and safety rules to ensure a safe product for our consumers and a safe working environment for our employees. Septic tank regulation is beyond BexarMet's scope of authority as a retail public utility and a general law water district. However, our Utility Service Regulations ("USRs") adopt the City of San Antonio's Unified Development Code. Section 4.1 of the USRs provides that BexarMet reviews and approves subdivision plat submittals to verify that all subdivisions within the City and its extraterritorial jurisdiction are provided with adequate water and wastewater systems. BexarMet's Utility Service regulations are attached to the record as ***Exhibit 20.***

Q. What would you consider to be the most significant distinctions between the abilities of BexarMet and BSR to serve the proposed area?

A. As judicially admitted in pleadings it has filed with the Bexar County District Clerk, "BSR simply does not have the ability to compete with a huge utility like BexarMet for a certificate to serve the same area." BSR is not a utility, and cannot possibly serve the proposed CCN area. BexarMet can, and should be allowed to do so. Moreover, BSR has withdrawn its application to serve the proposed area, so its protest constitutes nothing more than a means of obstruction.

Q. Does this conclude your testimony?

A. Yes.

SOAH DOCKET NO. 582-03-3275
TCEQ DOCKET NO. 2003-0664-UCR

IN RE: THE APPLICATION OF	§	**BEFORE THE STATE OFFICE**
BEXAR METROPOLITAN	§	
WATER DISTRICT TO AMEND	§	**OF**
WATER CCN NO. 10675	§	
IN BEXAR COUNTY	§	**ADMINISTRATIVE HEARINGS**

BEXAR METROPOLITAN WATER DISTRICT's

PREFILED DIRECT TESTIMONY OF

JOHNNIE A. TERRAZAS, P.E.

Q. Please state your name and business address for the record.

A. My name is Johnnie A. Terrazas, P.E. My business address is 2047 W. Malone, San Antonio, Texas 78225

Q. By whom are you employed and in what capacity?

A. I am employed by Bexar Metropolitan Water District ("BexarMet") as its Director of Engineering and District Chief Engineer. A copy of my resume is appended to the record in this cause as ***Exhibit 11***.

Q. Are you licensed engineer?

A. Yes, I am a professional engineer holding Texas license number 55566, which was issued to me in 1983.

Q. What are your job duties at BexarMet?

A. I am responsible for planning and coordination of all construction and expansion projects. I am also responsible for reviewing and approving all designs for system expansion, construction and upgrades, whether submitted in-house or by consultants. In addition, I spent four years designing BexarMet facilities, including one of the wells and the elevated storage tank at our Wild Turkey facility.

Q: Identify the departmental positions you manage, or which are under your supervision.

A: BexarMet's Engineering Department, which I manage, consists of CAD support, the district/area engineers, a GIS Coordinator, surveyors, and utility/inspection crews. In addition, we oversee the engineering functions performed by outside

contractors.

Q. Are you personally familiar with the proposed service area in North Bexar County, Texas?

A. Yes. I routinely study and review BexarMet's existing service area which is contiguous to the proposed area. In my review, I am concerned with ensuring that our Trinity Aquifer Wells and other facilities provide sufficient water for us to make continuous and adequate service to North Bexar County. I have also reviewed the requests for service for this area, and considered such requests in order to provide BexarMet's responses. In addition, I live just North of the proposed area near the City of Bulverde.

Q. To whom do you report in the BexarMet chain of command?

A. My immediate supervisor is Mr. F. Gilbert Olivares, BexarMet's General Manager. Mr. Olivares is responsible directly to BexarMet's Board of Directors, which is elected by the citizens and ratepayers of the District. A copy of the BexarMet management-staffing chart has been marked as ***Exhibit 2.***

Q. What is the purpose of your testimony in this cause?

A. I will present testimony that BexarMet has the experience and the technical managerial resources to design and construct the water utility plant and infrastructure necessary to provide continuous and adequate retail public utility service to the proposed service area. I will also opine on how long it will take BexarMet to provide service to a qualified service applicant once they meet all of our terms and conditions of service. Finally, I will testify on management's

commitment to bring reliable retail public water utility service sufficient to meet the rules of the TCEQ and of BexarMet to our requested service area in northern Bexar County.

Q. Can BexarMet design and build water systems that are capable of providing continuous and adequate water utility service to the consuming public ?

A. Yes. We have been doing this since the mid-1940's. BexarMet started in San Antonio and we have expanded over the years as the need for our services has grown. North Bexar County does not present any unique insurmountable engineering challenges that are unique or special to that particular area. In fact, we presently operate four small systems in Comal County, which are north of the proposed area. My staff and I are very experienced at designing the pipelines and pump stations needed to move water, and the facilities required for extraction and storage, as well. Our Board has adopted standards for our designs and construction, and we are committed to adhering to those standards for the public health, safety and welfare. We also know how to produce water elsewhere and how to move it to where it is needed. This fact is evidenced in our use of water from Medina Lake to serve our south Bexar County certificated area, our use of Edwards water to serve Stone Oak, our use of Canyon Lake water to serve our Comal County service area, and our planned use of surface water from Lake Dunlap to serve our northeast service area. If awarded the CCN for the proposed area, we would use this experience to provide a continuous and adequate supply of Trinity Aquifer water to our newly-added and existing customers.

BexarMet's Service to its Proposed Area

Q. Do you and your staff have experience in designing and constructing groundwater production and delivery systems?

A. Yes. BexarMet already serves over 80,000 connections, of which the majority are located in the Greater San Antonio-Bexar County area. Most of our service area, especially in Bexar County, is served with groundwater. The layout of our distinct and somewhat non-contiguous service area has created challenges related to water delivery. We have met these challenge through creative solutions and innovative infrastructure design. A map of BexarMet's existing certificated service area is attached as ***Exhibit 7*** to the record. Until BexarMet completed its state-of-the-art ultra-filtration membrane technology surface water treatment plant on the Medina River, Bexar County was entirely dependent upon groundwater for its domestic drinking water supplies. This was true for BexarMet as well as for SAWS. In recent years, BexarMet has conducted operations in the Edwards, Trinity, Carrizo and Wilcox aquifers, all aimed at the delivery of a safe and reliable supply to our customers. We contract with some of the finest hydrogeologists in the State, and often utilize the services of expert geologists like Dr. Darrell Brownlow. In all, BexarMet has had decades of experience in designing and constructing groundwater production systems. BexarMet has also been the frontrunner in exploring other technologies and options in becoming less dependent on groundwater. An example of this is our surface water treatment facility located on the Medina River Notably, some of BexarMet's more outlying

service areas including those in Comal County (north of the proposed area) are currently being served by stand-alone groundwater systems until they can be tied into regional water supplies that are being planned for their areas. This is an interim service arrangement. Where these systems are in close proximity to each other, it is our practice to interconnect them, if possible, for system back up and reliability purposes. Some of our acquired systems have always been dependent upon on-site groundwater supplies and my staff has designed upgrades to those systems to improve their reliability and quality of service.

Q. Would the proposed area be treated as a stand-alone system?

A. No. Due to the very close proximity of the proposed area to our existing Timberwood system, we will tie new developments in the area to existing facilities in the Timberwood and possibly other portions of BexarMet's presently-certificated areas. In addition, we will develop new wells within the proposed area (once it is certificated to BexarMet), the yields from which will be used to supplement supplies for our now-existing areas.

Q. What existing facilities would BexarMet use to provide service to the proposed area?

A. We would use the four existing Wild Turkey wells which were constructed between 1999 and 2005. In addition, we would ultimately tie-in the two existing wells located on Poco Pass in Timberwood, as well as the four wells located on Timberline (in Timberwood). We also have an existing well on property owned by GG Gale from which we lease groundwater. Each of these wells produce

Trinity Aquifer groundwater. Presently, there exist two tracts in Oliver Ranch which are dedicated for well sites, but those wells have not yet been constructed. If necessary, we will construct wells on those tracts. The Wild Turkey Station also has a 1 million gallon storage tank, with 3 existing booster pumps. A fourth booster pump will be installed within the next 60 days. There is a 2.5 million gallon elevated storage tank on Echo Mountain. BexarMet crews have recently commenced 16" transmission mains dedicated solely to filling the tank. In addition, to Wells at Poco Pass and Timberline, both of these stations enjoy existing ground storage tanks. Of course, the WECo wells are "in existence," and if a final agreement can be reached with them, we will use Trinity Aquifer groundwater from those wells to serve the proposed area and supplement supplies for our existing certificated areas.

Q. What standards does BexarMet build its water system to?

A. BexarMet's Board of Directors has adopted general, technical and material specifications, which are contained within our "Policy and Design Standard Manual" (also referred to as the "Policy, Procedures and General Requirements"). The Board has dictated that all facilities be built to these standards, which, incorporate TCEQ's Chapter 290 standards as a threshold minimum. However, many of our standards exceed those of the State. Our USRs, and particularly Sections 4.1 – 4.8, provide that developers, too, must construct water facilities to BexarMet's specifications, and that BexarMet accept dedication of such infrastructure prior to use. I have attached the USRs to the record as ***Exhibit 20.***

Requests for BexarMet's Service

Q. Is BexarMet committed to bringing continuous and adequate retail public water utility service to Northern Bexar County?

A. Absolutely. We have serviced areas north of 1604 for many years, and expended considerable resources to do so. Our North Bexar County service areas include the dense, high-demand areas of Stone Oak and Timberwood Park, as well as areas in Comal County which are north of this proposed service area. We have also served the north-Bexar County municipalities of Hollywood Park and Hill Country Village, and have done so for approximately 20 years.

Q. Does BexarMet have the ability to serve in the requested CCN service area?

A. Yes. Based upon my personal and professional experience and expertise, BexarMet has the resources and the experience to design and construct whatever utility plant and facilities that may be needed to provide continuous and adequate retail public water service to the area. It only takes good sound engineering and experience construction crews. There is ample groundwater available in the area, as set forth in Dr. Brownlow's testimony and witnessed by us at the Wild turkey facility. The actual demands of a new service request will dictate to what extent BexarMet's existing wells might be used to fulfill a particular service request or whether new sources(s) of supply might be needed on a permanent or interim basis. To the extent that we simply extend service from existing facilities, such as our wells or those constructed by WECo, my crews can very easily install distribution mains and other delivery infrastructure. The pipelines that would be

needed to transport the water form the well sites to the points of usage are no different than other pipelines that we have designed and built throughout the district. If, on the other hand, it is determined by management that it is in BexarMet's best interest to construct new wells, we and our outside contractors are very capable of doing so. Our history of excellent service demonstrates our abilities, and our existing, Board-adopted specifications will ensure that our designs and construction are of the highest quality, safety and efficiency.

Q. How long would it take BexarMet to fulfill the service request of a qualified service applicant ?

A. I presume your question assumes that a water line is not already installed in front of the applicant's residence and he must do something more than sign a customer service application and pay the customary connection charges. I am assuming you are speaking of a new real estate development requiring service at some location where a source of supply must be developed or water transported in, a distribution system built, etc. In such a case, BexarMet's existing Utility Service regulations ("USR's") require the developer/applicant to make a formal application to BexarMet for non-standard service. Chapters 3 and 4 of the USRs provide the general and procedural provisions for obtaining such service, including certain preconditions of service, the creation and dedication of easements, the executions of contracts, etc. These are matters and the determination of when an applicant "qualifies" are outside of my area of responsibility. However, when the General Manager and Counsel determine that all conditions have been met and the

applicant is qualified, it has generally been my experience that unless otherwise agreed to by the parties, service is commenced to the first phase of the development within six months or less. This might be an interim service arrangement while a more permanent service situation develops, i.e., use of an on-site water well(s) until a surface water supply transmission line is extended into the area. Of course, while the legal work and other matters are being worked out, the developer and his engineers have been working with me and my staff and Mr. Larry Bittle and his operations/construction staff (consisting of more than 150 employees) in anticipation of the authorizations to proceed.

Q: Does BexarMet presently have written, existing policies concerning new facilities construction and extensions of/modifications to existing facilities?

A: Yes. These topics are addressed in detail in Chapter 4 of the USRs. Among other topics, the USRs provide for construction of infrastructure to BexarMet standards, and the acceptance and ownership of infrastructure necessary to serve new development.

Q. How is the layout of the water delivery system developed?

A. Working with our customers, and BexarMet's Field Operations department headed by Mr. Larry Bittle, we build a phased system of pipelines and appurtenances that match the long term service needs of customers as each respective water source comes on-line and becomes actually available. BexarMet does not and will not haphazardly throw together an instant network of pipelines. We take seriously our obligation to avoid having expensive idle capacity when

the District can more prudently use its resources to service the immediate needs of existing customers. Generally, the layout of water delivery facilities is a function of demand subject to the USRs.

Q. Does BexarMet employ a sufficient member of TCEQ-licensed operators to operate the system in the requested service area?

A. Yes, we do at this time, and BexarMet is a dynamic and growing organization. We are always looking to add operators to our team. As our customer base grows, BexarMet will add licenced service crews to insure prompt response to any reported service problem. All our water systems are routinely serviced and tested as required by TCEQ regulations.

Q. Has BexarMet's management committed the financial, managerial and technical resource necessary to provide continuous and adequate retail public water utility service to the proposed service are in Northern Bexar County if BexarMet's application is granted?

A. I believe so. Subject only to the prudent use of district resources, this project has been given a priority status for my department. BexarMet is already certificated to four distinct service areas to the North of proposed area, and to vast territory to the immediate south. We have been, and remain committed to providing superior quality service to the public in those areas. The proposed area is a natural expansion of the District's service area, and would complement these existing customer population centers, especially since the proposed area is contiguous to

an area where the existing customer base is showing dramatic growth.

Q. Does this conclude your testimony?

A. Yes. It does.

SOAH DOCKET NO. 582-03-3275
TCEQ DOCKET NO. 2003-0664-UCR

IN RE: THE APPLICATION OF BEXAR METROPOLITAN WATER DISTRICT TO AMEND WATER CCN NO. 10675 IN BEXAR COUNTY	§ § § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

BEXAR METROPOLITAN WATER DISTRICT's

PREFILED DIRECT TESTIMONY OF

DARRELL T. BROWNLOW, M.S., Ph.D.

Q. Will you state your name and address for the record, please.

A. Darrell Travis Brownlow. The address is 12425 FM 775, Floresville, Texas, 78114.

Q. How are you employed?

A. I'm a private consultant. I have a limited partnership I call Carrizo Consulting Limited Partnership.

Q. What is the general business activity of your partnership?

A. I provide consulting services to the mining industry. In that regard, I develop limestone, sand and gravel quarries and assist with business development in the aggregate industry, both nationally and internationally. I also conduct a broad range of property evaluations, and perform ownership research on prospective properties. In general, I evaluate, explore and development mining operations. I also perform consulting in the water industry -- groundwater exploration and resource development and well development. My experience is with the Edwards Aquifer, the Carrizo Aquifer, the Trinity Aquifer, the Ogallala Aquifer principally here in Texas. I also evaluate groundwater protection programs and provide general geological consulting to water development and marketing interests.

Q. What is your educational background?

A. I have a bachelor's degree in geology and a minor in chemistry from Texas Tech University, 1987. I also have a master's degree in geology and geochemistry from Texas Tech University, which I received in 1989. Finally, I received a Ph.D. in geology and geosciences from Texas Tech University in 1991. A current copy of my resume is attached to my pre-filed testimony as ***Exhibit 12.***

Q. Do you presently serve on any boards of any governmental or quasi governmental entities concerning ground water?

A. I am a small business representative on the South Central Texas Regional Water Planning Group ("Region L"). I've served in that capacity since 1999. I'm also the governor's appointee to the Evergreen Underground Water Conservation District. And I have served in that capacity since 2002. The Evergreen, of course, regulates groundwater in Wilson, Atascosa, Frio and Karnes Counties. The South Central Texas Regional Planning Group is part of SB1-mandated State Water Planning. That group represents the 21 counties of South Central Texas, including Bexar, Medina and Comal and many of the counties overlying the Trinity Aquifer

Q. In addition to those boards upon which you serve, have you made presentations to other boards or other governmental entities concerning groundwater?

A. As a consultant to a private enterprise called Water Exploration Company ("WECo"), I recently made a presentation to the Trinity Glen Rose Groundwater Conservation District("TGR") Board concerning pending research on water availability and recharge aspects of the Middle Trinity Aquifer in northern Bexar County. The emphasis in that presentation, made on behalf of WECo, was specifically related to Middle Trinity Aquifer development in the Edwards Aquifer recharge zone of central Bexar County. The outline from my presentation is attached to my testimony as ***Exhibit 13.***

Q. Have you been retained by Bexar Metropolitan Water District ("BexarMet") to provide expert testimony in support of its application to amend CCN 10675 in northern Bexar County?

A. Yes. BexarMet has asked me to testify regarding my research, findings, general observations and professional opinions with respect to the availability of Middle Trinity groundwater in significant enough quantities to provide continuous and adequate water service to the proposed CCN area.

Q. Have you had an opportunity to review the map marked as ***Exhibit 2*** to the record, which depicts BexarMet's proposed service area?

A. Yes. I have reviewed ***Exhibit 2***, and I am otherwise personally familiar with the proposed area through my independent business activities. I've been engaged in the development of water resources in the Trinity Aquifer of northern Bexar County, Comal County and Medina County for the last four years. My clients have included large industrial mining companies that are looking for water supply sources other than the Edwards Aquifer, which has led to substantial research and actual development of industrial use water wells in the Middle Trinity Aquifer. I've also consulted to several entities engaged in the development and marketing of groundwater from the Middle Trinity Aquifer, and evaluating the feasibility of such projects. Particularly, I have conducted some research for WECo, and for private mining clients who have drilled numerous Middle Trinity Aquifer wells in northern Bexar County. WECo owns 47 Middle Trinity domestic water supply wells in Bexar County, and I have worked with Bexar Met in relation to some of these wells and a proposed water supply project referred to as WECo East 29.

Q. Have you conducted specific research or studies concerning the availability of Trinity Aquifer groundwater in Bexar County, Texas?

A. Yes, however, these studies were prepared for private clients, and the documentation and results are the proprietary/intellectual property of those respective private clients. I have not prepared any publicly available research documents, other than public filings, and the presentation I made to the TGR Board.

Q. Do you maintain the private research documents in your personal files?

A. Some of them I do. For example, any time we drill a well, certain aspects of the private research that I've done is publicly available information – construction of a Trinity Aquifer well through the Edwards Limestone requires what we call a "pass-through permit" from the Edwards Aquifer Authority. In addition, the local water district including the TGR, or the Medina County Underground Water District, also require permits the information which is public. In all cases, those well applications, drilling permits, those necessary items, in a sense are public information. So the location of the wells, the geophysical logs from those wells, all the things that are required to drill, construct and operate those wells, a component of that is public information. However, the results of that testing, results of the production, some those things, the process by which we go about in determining where to drill the wells, that sort of thing, most of that is proprietary, and in some cases I am prohibited by contract from divulging specifics.

Q. Describe, generally, the geological characteristics of the Middle Trinity Aquifer in the area proposed to be served by BexarMet in this application?

A. The Middle Trinity Aquifer is an extensive body of groundwater that rests within a porous limestone located approximately 800 to 1,000 feet beneath the base of the Edwards limestone -- and in some cases, particularly in the Edwards Recharge Zone, below the Edwards Aquifer. The Middle Trinity Aquifer in north central Bexar County (specifically in the areas where it underlies the Edwards Recharge Zone) cannot accurately be characterized as having the same production capacity or being limited to the same recharge components as the Trinity Aquifer that we conventionally think of north of the Bexar County line, (north of the Cibolo Creek) and into Kendall, Kerr, Gillespie counties. Instead, the Trinity Aquifer in the area beneath the Edwards Recharge Zone – the locales adjacent to BexarMet's proposed service area -- is structurally distinct from the rest of the "conventional" Trinity Aquifer in that this portion is substantially deeper and enjoys several additional recharge components that the same Aquifer in other portions of the region does not share.

Q. What is the biggest geologic distinction between the Trinity Aquifer between Bexar and more northern counties?

A. Well, the Middle Trinity Aquifer, which is the primary water producing aquifer in the area apart from the Edwards Aquifer is in a different structural setting than the Trinity Aquifer is north of the Cibolo Creek. As mentioned earlier, the distinction is that areas adjacent to BexarMet's proposed service area are located within a unique geological area called the Edwards Recharge Zone, also referred to as the Balcones Fault Zone. This Zone is geologically significant, and makes the Middle Trinity extremely productive in this area by imposing different hydrologic

conditions on the aquifer. For instance, the Balcones Fault system puts the Middle Trinity Aquifer in contact with several additional sources of recharge, which are non-existent in any other part of the Middle Trinity. The rest of the Trinity Aquifer, for example, in areas of Kerr County, Kendall County, northern part of Comal County is basically in an unconfined zone where there are no significant structural features (faulting) like we see in the Balcones Fault Zone. Unconfined generally means not under direct pressure or any artesian pressure. The Trinity Aquifer in those northern areas receives the vast majority of recharge from direct precipitation or direct infiltration from surface precipitation -- rainfall. As you move toward the Edwards Aquifer Recharge Zone, the Balcones Fault Zone -- those are synonymous -- geologic faulting, the same faulting that placed the Edwards Aquifer beneath the surface and created the Balcones Fault Zone and created essentially the southern part of the Hill County here, that same faulting has placed this Middle Trinity Aquifer roughly 800 to 1,000 feet below surface -- roughly at sea level.

Q: How has that phenomenon affected recharge?

A: As a result of what I've been describing, the sources of water for the Middle Trinity in this area are not limited to direct infiltration from precipitation like the rest of the Trinity. Instead, because of the faulting -- because the Middle Trinity has been down-dropped deep into the earth -- the Middle Trinity in this area is in direct communication with the Hosston and Sligo and other water-bearing formations. It also most likely receives substantial water from the same recharge that occurs in the Edwards Aquifer. Based upon these geological observations, it

can be readily inferred that there are multiple sources of water for the Middle Trinity beneath the Balcones Fault Zone as opposed to the limited recharge available to the Middle Trinity in other parts of the region. And, of course, you have substantial leakage from the Middle Trinity north of the fault zone down the fault paths into the Middle Trinity in the area that we're talking about.

Q. What are some of the recharge components existing in the Trinity Aquifer in Bexar County that don't exist, for example, in Gillespie or Kendall Counties?

A. Essentially, as I have previously stated, if you look at the Middle Trinity beneath the Balcones Fault Zone (in the area of north central Bexar County) the aquifer most likely receives significant recharge from multiple sources, such as cross-formational flow from the Hosston and Sligo formations, where it's in lateral continuity with them. In addition, it potentially receives recharge through precipitation and run-off that falls over the Edwards Recharge Zone. Also, water that percolates through the Edwards Recharge Zone has the potential to enter the Middle Trinity in this particular geographic region. Perhaps most importantly, though, the Middle Trinity in north Bexar County has significant recharge from the Cibolo Creek. Of course, our portion of the aquifer also gets the benefits of recharge from the same sources of recharge that the rest of the Middle Trinity receives. I have personally experienced several years of exploitation of the Trinity Aquifer in these areas by private entities, with dramatically greater well yields in the Middle Trinity than would ever be experienced in areas north of the Cibolo Creek. These wells have been continuously used now for many years by private entities. And so the important thing to stress here is that you can't simply

characterize the Middle Trinity in a broad way and equate what happens in Kendall County or in the far reaches of northern Bexar County, to that which occurs in north central Bexar County. It is a little more complicated than that. You can't equate what happens in the Trinity Aquifer, the Middle Trinity Aquifer evenly across the region.

Q: Briefly discuss some of your personal experience with Middle Trinity wells constructed in the Edwards Recharge/Balcones Fault Zone.

A: What we have determined through our studies and our field experience – real world results derived from well tests and monitoring -- is that the recharge water availability to the Middle Trinity north of the Edwards Recharge Zone is substantially less than that beneath the Edwards Recharge Zone (or within the Balcones Fault Zone). That is, you really have to treat the two regions – separated by the Balcones Fault -- separately. For example, when you go into the Middle Trinity well north of the recharge zone (well north of Cibolo Creek) where essentially the only sources of recharge are direct precipitation and infiltration, you might do well to get a 50 to 100 gallon per minute well, and you'd still have substantial potential for drawdown. In the Edwards Recharge Zone, by contrast, it's not uncommon to have a Middle Trinity well approach 1,000 gallons a minute with relatively little apparent drawdown. As I have previously discussed, I believe this is explained by the structural controls on the formation, which results in groundwater being under placed enormous pressure because the water is much deeper, and is influenced by a lot of additional factors and sources. The Trinity Aquifer, in the area of the Balcones Fault Zone/beneath the Edwards Recharge

Zone, has demonstrated capacity well yields in excess of 1,000 gallons per minute. That is unlike the vast majority of any other part of the Trinity Aquifer. So WECo, BexarMet, the city of Garden Ridge, and many of the industrial users of the Trinity Aquifer in this region (including mining companies) have substantial experience now that didn't exist five or ten years ago. And developing Middle Trinity wells in this Balcones Fault Zone area that had capacities of greater than 1,000 gallons per minute -- or between 500 and as much as 1,500 gallons per minute, this was unheard of many years ago, because nobody had ever drilled wells in this area.

Q. In your research, have you focused on the Trinity Aquifer in Bexar County as opposed to broader existing models of the Trinity Aquifer, globally?

A. I'm certainly familiar with Dr. Mace's study (Report 353), the ground water availability model of the Trinity Aquifer in the Hill Country area that the Texas Water Development Board did in 2000. It was certainly -- part of that was tied to assist the regional water planning group in understanding the availability of Trinity Aquifer across the entire regional process.

Q: Do Dr. Mace's conclusions concerning limited reliability of a groundwater supply from the Trinity Aquifer specifically apply to the region comprising BexarMet's proposed service area?

A: I don't believe so, and I also believe that Dr. Mace's study facially recognizes its own limited applicability. Dr. Mace's study also preceded much of the current Trinity well drilling that I am referring to. As discussed above, there is now a relatively large and ever-growing body of evidence being developed over the last

five to ten years through the drilling of wells out of necessity because of limitations placed on the Edwards Aquifer. That necessity for drilling a wide expanse of wells across the Edwards Recharge Zone through the Edwards Aquifer down into the Middle Trinity, has resulted in direct experience with water production capacities that far exceed anything we've ever experienced in the Middle Trinity and northern, you know, north of the Cibolo Creek and other areas of the typical Trinity production areas. To apply general water availability or hydrological considerations across the entire spectrum of the Trinity Aquifer, regardless of location, is akin to saying that, you know, everything that happens in North America is exactly the same without drawing a distinction between what happens in Mexico and what happens in the United States and what happens in Canada. Of course, that would not be accurate.

Q. So do the concerns regarding drought and availability of Trinity Aquifer water in times of drought in Comal County, apply to the proposed service area?

A. Every ground water source has the same limitations, and there is not a groundwater source in Texas that doesn't suffer from that same argument, be it the Carrizo, be it the Ogallala, the Trinity, or the Edwards. A severe enough drought will adversely affect any supply source. However, the reliability of this portion of the Trinity Aquifer almost rivals the Edwards, so I do not believe that the drought concerns in Comal County "fit" in the Middle Trinity underlying Edwards Recharge/Balcones Fault Zone.

Q: Why does there exist relatively scant documentation concerning the unique nature of the Middle Trinity Aquifer in the specific region of the Balcones Fault/Edwards Recharge Zone?

A: None of that research is currently available because, prior to enactment of the EAA legislation mandating a reduced dependence on the Edwards Aquifer, no one would ever have had a reason to try to develop or research the Trinity Aquifer over the Balcones Fault Zone because it was so close to the Edwards water that such studies were not cost-effective in the face of virtually unlimited water from the Edwards Aquifer. Based upon its close proximity to the Edwards Aquifer, the research associated with the Middle Trinity Aquifer in the Balcones Fault Zone has really lagged because when people historically thought of Middle Trinity production, they had focused on areas where there has been historical usage of Trinity water, that being in areas north Bexar County or areas north of the Cibolo. It has only been in the last five to seven years that there has been a real need to develop alternative water supply sources for entities that need water in that area and can't get it from the Edwards Aquifer. Our developing knowledge and understanding of this part of the Middle Trinity is the product of their investment of time, money, and energy spent in evaluating and development of the resource in this area. Historically, there was not a demand for this kind of water in these areas. Consequently, large capacity wells were never drilled, and the corresponding research and data gathering functions were not performed.

More recently, the necessity for additional water supplies has resulted in BexarMet and other municipal interests like the City of Garden Ridge and

industrial interests like the mining companies drilling wells in these areas. Surprisingly to us all, truly phenomenal well capacities have been generated, which continue today unaltered.

Q: Please summarize the WECo Trinity Aquifer supply project, which BexarMet is considering as a potential supply source for the proposed service area.

A: As I mentioned earlier, WECo has constructed 47 wells in the Edwards Recharge/Balcones Fault Zone of the Middle Trinity Aquifer. These wells are strategically located across a broad area of Bexar County specifically in that portion of the Edwards Recharge Zone that we're speaking of. In fact, those WECo wells surround the BSR CCN area and are essentially contiguous to the areas in BexarMet's CCN application. I understand that BexarMet is specifically considering the purchase of groundwater produced from 29 of WECo's wells, which are commonly referred to as the WECO "East 29." As reflected in ***Exhibit 8***, which I helped prepare last year as a consultant to Bexar Met, the Weco East 29 Proposal is based upon the assumption that those 29 wells could (to be verified through extensive field testing) yield an average production of about 500 gallons per minute. This production would be supplied to BexarMet to meet its customer demand in north Bexar County, to include the proposed service area. In calculating the potential yield of those wells, the proposal suggests that, if utilized 75 percent of the time (with an extrapolated potential drawdown area) and the average well yield was 500 gpm, the yield for the Weco East 29 wells could approach approximately 17,000 acre feet on annual basis. Based upon my experience with industrial use wells in the area, I believe that this production