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BEFORE THE ARIZONA CORPORATION COMMISSION

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IN THE MATTER OF THE APPLICATION OF WATER UTILITY OF GREATER TONOPAH, INC., AN ARIZONA CORPORATION, FOR AN EXTENSION OF ITS CERTIFICATE OF CONVENIENCE AND NECESSITY.	DOCKET NO. W-02450A-06-0253 **NOTICE OF FILING AMENDED ENGINEERING DATA**

The Water Utility of Greater Tonopah ("Tonopah") files the attached Preliminary Design Report, which was provided to Staff by email on January 12, 2007. This report supersedes the engineering data in the original application in this case.

RESPECTFULLY SUBMITTED this 16th day of May 2007.

ROSHKA DEWULF & PATTEN, PLC

By _____

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Original and 13 copies of the foregoing filed this 16th day of May 2007 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission
DOCKETED

MAY 16 2007

DOCKETED BY

Copy of the foregoing hand-delivered/mailed this 16th day of May 2007 to:

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WATER UTILITY OF GREATER TONOPAH, INC.

Balterra CCN Expansion Area
Preliminary Design Report

Prepared for:

Water Utility of Greater Tonopah, Inc.
22601 N. 19th Avenue
Phoenix, AZ 85027

Submitted to:

Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007
Docket No. W-02450A-06-0253

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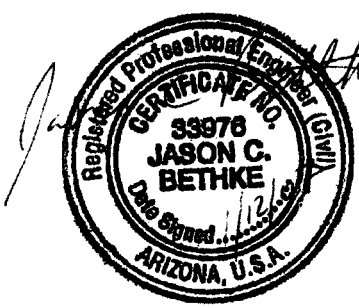
January 12, 2007



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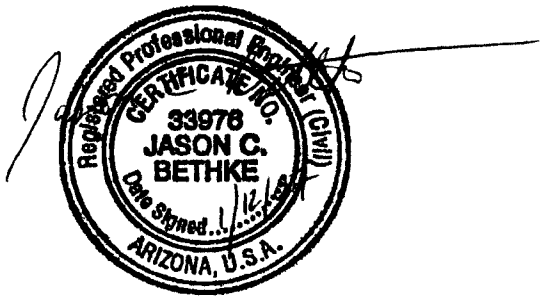

A. INTRODUCTION

In 2006, Global Water Management, LLC acquired the assets of the West Maricopa Combine, Inc., which includes the Water Utility of Greater Tonopah, Inc. (WUGT). The WUGT is currently expanding their Certificate of Convenience and Necessity (CCN) to include the entire Balterra Development; the current CCN includes only a portion of the Balterra Development.

This document is intended to clarify how WUGT intends to serve the entire Balterra Development, including areas within and outside the existing CCN boundary. The entire Balterra development covers 1100 acres, while the extension area only covers 480 of that total, or approximately 44%.

B. DEVELOPMENT PROJECTIONS

Development projections are based on information provided to WUGT by Balterra developers. The development is primarily comprised of small lot residential uses, with interspersed medium lot residential and office/retail uses. The estimated equivalent dwelling units (EDUs) to be constructed by the entire Balterra Development are presented in **Table 1 – EDU Estimates for Entire Balterra Development.** **Table 2 – EDU Estimates for CCN Expansion Area** addresses only the portion of the Balterra Development that is not included in the current CCN. The values in this table were generated by proportioning the EDUs based on land area. Both tables include EDU projections for the first five years and build-out.

Table 1 – EDU Estimates for Entire Balterra Development						
1100 acres						
Description	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Build-out**
EDU Estimated for Entire Balterra Development	300	780	1260	1870	2770	6100

Table 2 – EDU Estimates for CCN Expansion Area						
480 acres						
Description	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Build-out**
EDU Estimated for CCN Expansion Area	131	340	550	816	1209	2662

C. INFRASTRUCTURE REQUIRED TO SERVE BALTERRA DEVELOPMENT

The primary infrastructure required to service the development will include wells, storage reservoirs, booster stations and treatment systems. The design conditions for these facilities were developed using the following assumptions:

- Average Water Usage — 120 gallons per capita, per day
- Population per EDU — 3.0
- Maximum Day Demand Factor — 2
- Peak Hour Water Demand Factor — 3.4
- Fire Flow — 1,500 gallons per minute (gpm)

Table 3 – Cumulative Water Requirements for Entire Balterra Development presents water requirements based on the EDU and design assumptions identified above.

Table 3 – Cumulative Water Requirements for Entire Balterra Development

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Buildout
Average Day Water Demand (gpd)	108,000	280,800	453,600	673,200	997,200	2,196,000
Maximum Day Water Demand (gpd)	216,000	561,600	907,200	1,346,400	1,994,400	4,392,000
Peak Hour Water Demand (gpd)	367,200	954,720	1,542,240	2,288,880	3,390,480	7,466,400

Utilizing these water requirements, infrastructure requirements were developed for the first five years of the entire Balterra Development as presented in **Table 4 – Cumulative Infrastructure Requirements for the Entire Balterra Development**. Storage requirements were based providing storage for average day peak month with one well out of service and an 80 percent service factor. Please note it is expected the first phase of the reservoir construction will exceed this projection. Booster station pumping requirements were based on meeting maximum day plus fire flow or peak hour, whichever was greater.

Table 4 – Cumulative Infrastructure Requirements for the Entire Balterra Development

Description	Year 1	Year 2	Year 3	Year 4	Year 5	Buildout
Wells (500 gpm estimated production)	2	2	2	2	2	4
Storage Requirement (MG)	0.0	0.0	0.0	0.2	0.8	2.8
Booster Station Capacity (gpm)	1,650	1,890	2,130	2,435	2,885	5,185
Treatment System Capacity (gpd) (Avg Day x 1.5)	162,000	421,200	680,400	1,009,800	1,495,800	3,294,000

Table 5 – Unit Costs were developed to estimate the costs of providing service to the Balterra Development. Please note that treatment of the arsenic and fluoride waste stream is necessary to prevent discharging this waste to a sewer. These costs were developed in more detail in Section E – Conceptual Plan for Serving the Entire Balterra Development of this document, but are included here to capture all applicable costs.

Table 5 - Unit Costs		
Description	Unit	Unit Cost
Wells	gpm	$1,500.00
Storage Reservoirs	gal	$1.00
Booster Stations	gpm	$500.00
Arsenic and Fluoride Treatment Systems	gpd	$1.00
Wastewater Treatment for Arsenic and Fluoride Treatment Systems – Years 1-5 Requirement	EA	$600,000

Combining Table 4 – Cumulative Infrastructure Requirements for the Entire Balterra Development and **Table 5 – Unit Costs produces Table 6 - Infrastructure Costs for the Entire Balterra Development**. This cost estimate is representative of the five year planning window. As such, the well and a one million gallon storage reservoirs will be installed during the first year of construction, while expandable systems (treatment and booster stations) will be initially built in year one and expanded in year 3.

Table 6 - Infrastructure Costs for Entire Balterra Development 1100 Acres							
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Years 1-5	Build-out
Wells	$1,500,000	$0	$0	$0	$0	$1,500,000	$3,000,000.00
Storage Reservoirs	$782,775	$0	$0	$0	$0	$782,775	$2,805,750.00
Booster Stations	$1,065,000	$0	$377,500	$0	$0	$1,442,500	$2,592,500.00
Treatment Systems	$680,400	$0	$815,400	$0	$0	$1,495,800	$3,294,000.00
Treatment System Waste Treatment	$400,000	$0	$200,000	$0	$0	$600,000	$1,321,299.64
Totals	**$4,428,175**	**$0**	**$1,392,900**	**$0**	**$0**	**$5,821,075**	**$13,013,549.64**

As Table 6 –Infrastructure Costs for the Entire Balterra Development presents the costs for the entire 1100 acres, it is necessary to provide similar information for the portion of the 1100 acre Balterra Development that is not currently located within the existing CCN. This analysis is included in Section D. Infrastructure Required to Serve CCN Expansion Area.

D. INFRASTRUCTURE REQUIRED TO SERVE CCN EXPANSION AREA

The infrastructure required to serve the CCN expansion area is provided with the estimated cost sharing for the infrastructure, as determined by land area.

Table 7 – Cumulative Infrastructure Requirements for CCN Expansion Area presents the cumulative infrastructure required for only the CCN expansion area.

Table 7 – Cumulative Infrastructure Requirements for CCN Expansion Area						
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Buildout
Wells (1,000 gpm estimated production)	1	1	1	1	1	1
Storage Requirement (MG)	0.05	0.12	0.20	0.29	0.44	0.96
Booster Station Capacity (gpm)	720	825	929	1,063	1,259	2,263
Treatment System Capacity (gpd) (Avg Day x 1.5)	70,691	183,796	296,902	440,640	652,713	1,437,382

The required infrastructure for the CCN expansion area cost estimates was identified using **Table 5 – Unit Costs. Table 8 – Infrastructure Costs for CCN Expansion Area** presents the infrastructure costs for the CCN expansion area.

Table 8 - Infrastructure Costs for CCN Expansion Area							
480 Acres							
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total Years 1-5	Build-out
Wells	$654,545	$0	$0	$0	$0	$654,545	$1,309,090.91
Storage Reservoirs	$341,575	$0	$0	$0	$0	$341,575	$1,224,327.27
Booster Stations	$464,727	$0	$164,727	$0	$0	$629,455	$1,131,272.73
Treatment Systems	$296,902	$0	$355,811	$0	$0	$652,713	$1,437,381.82
Treatment System Waste Treatment	$174,545	$0	$87,273	$0	$0	$261,818	$576,567.12
Totals	$1,932,295	$0	$607,811	$0	$0	$2,540,105	$5,678,639.84

E. CONCEPTUAL PLAN FOR PROVIDING SERVICE TO BALTERRA

The Balterra Development conceptual land use plan presented in **Figure 1 – Conceptual Land Use Plan for the Entire Balterra Development** (provided by David Evans and Associates, Inc.) presents the proposed location of the water distribution facility (water campus) at Camelback Road and approximately 405th Avenue. **Figure 2 – Preliminary Water Campus for the Entire Balterra Development** presents the build-out of the proposed water campus.

Implementation

Several alternatives are being considered to regionalize the distribution of water facilities within the WUGT service area. However, because a final decision is pending, it is necessary to provide a description of the plan to serve the first five years of the entire Balterra Development, both within and outside the existing CCN boundary.

Prior to construction of housing units within the Balterra Development, the following facilities will be constructed on the proposed water campus:

- A one-million gallon water reservoir
- A 5000 gallon pressure tank to provide for surge protection
- A booster station with a firm capacity of 2,885 gpm complete with variable speed drives. The booster station will initially be constructed to provide the capacity projected at year three. Phase 2 of the booster station will increase the firm capacity to 2,885 gpm.
- Two wells estimated to produce 500 gpm each for a total of 1000 gpm

Because the arsenic and fluoride concentrations documented in the vicinity exceed maximum contaminant levels established under the Safe Drinking Water Act, treatment for both appears to be required. Thus in addition to the facilities described above, the following will be constructed:

- A media-based arsenic/fluoride treatment system – The proposed media system is an activated alumina media system followed by a granular ferric hydroxide (GFH). The activated alumina will remove fluoride and a portion of the arsenic. GFH media will

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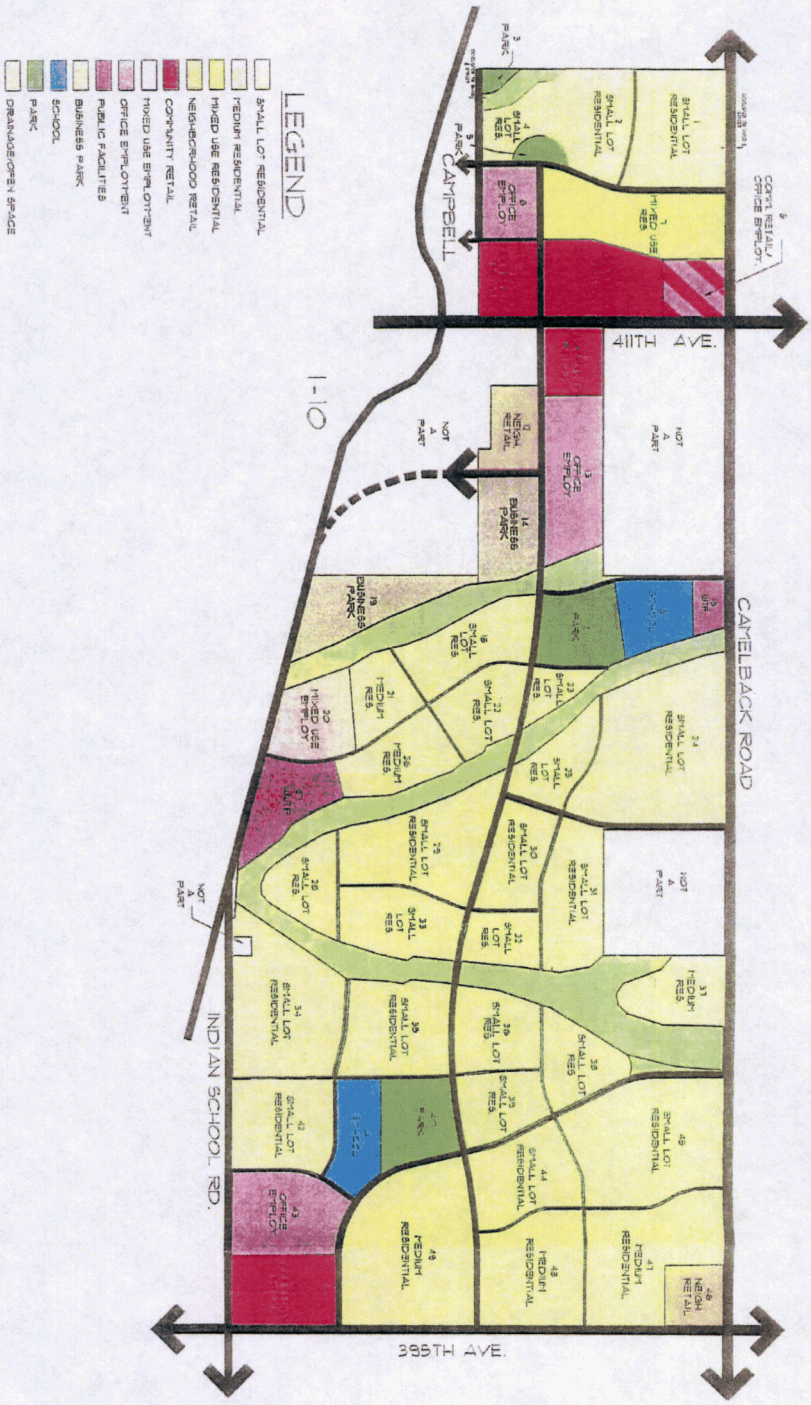

FIGURE 1

GLOBAL WATER
RELIABLE · RENEWABLE · REUSABLE
21410 N. 19th Ave. · Ste. 201 · Phoenix, AZ 85027
Ph: 623.580.9600 · Fx: 623.580.9659
www.gwresources.com

BALTERRA CONCEPTUAL LAND USE PLAN

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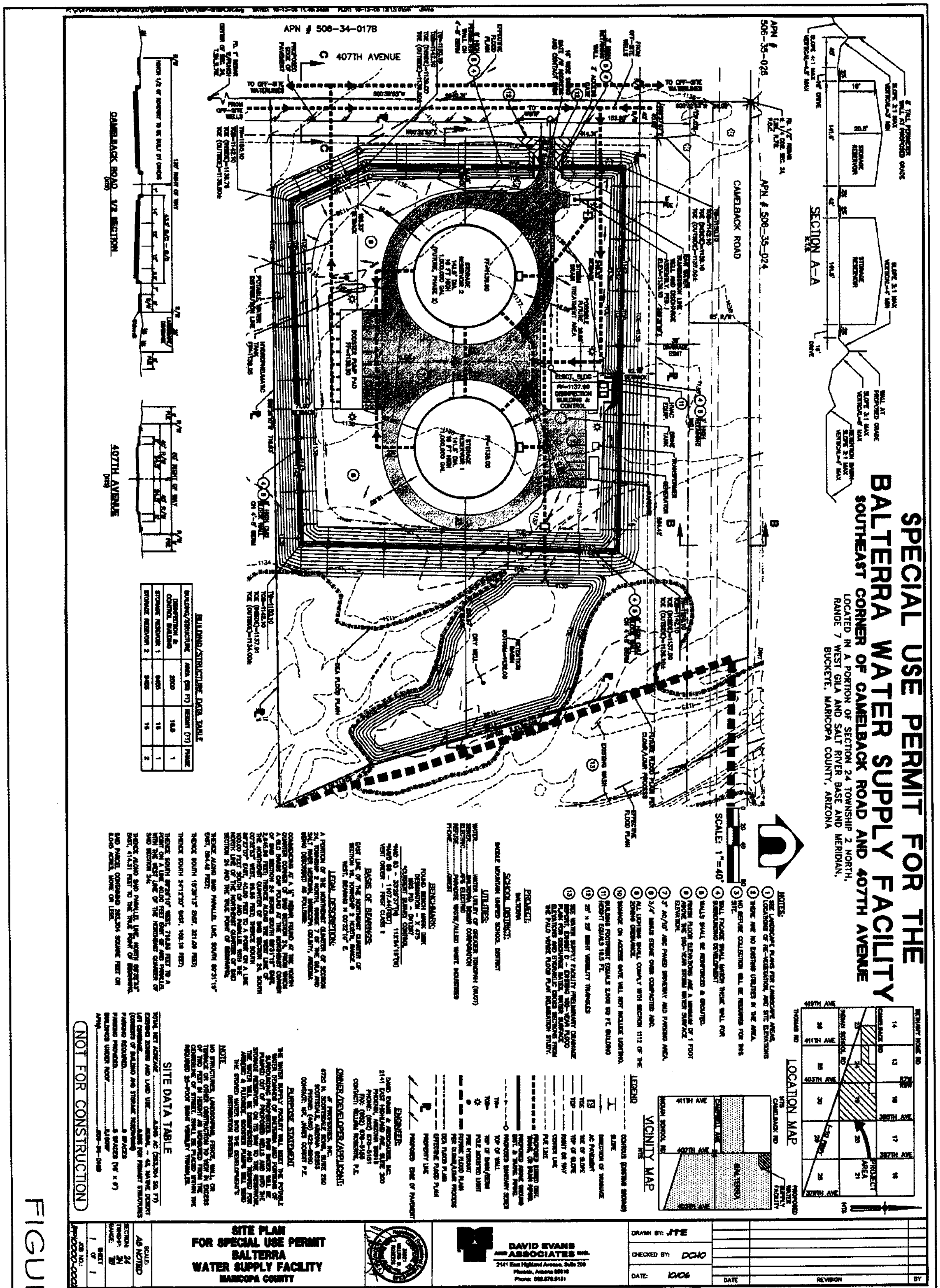

FIGURE 11

GLOBAL WATER RELIABLE · RENEWABLE · REUSABLE 21410 N. 19th Ave. · Ste. 201 · Phoenix, AZ 85027 Ph: 623.580.9600 · Fx: 623.580.9659 www.gwresources.com	BALTERRA SITE PLAN FOR SPECIAL USE PERMIT	Drawn By: BB	Date: 1/07	Sheet: 1 OF 1
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		Scale: NTS		

be provided to ensure arsenic removal, as the extent of arsenic removal by activated alumina has not been pilot tested in this area.

Figure 2 – Preliminary Water Campus for Entire Balterra Development provides the location details for these facilities.

It will be necessary to address the waste streams generated by the fluoride (activated alumina) and arsenic (GFH) treatment system. The waste streams are generated through backwashing and possible regeneration of the media. Because no process waste will be discharged to the sewer, the treatment process will be required to evaporate its waste stream.

Arsenic treatment systems (GFH) can be operated with as little as 0.5 % wastewater produced, significantly less than that generated by an activated alumina system.

The activated alumina treatment system for fluoride requires the regeneration of the media. As a result this system generates more wasted water. The following design requirements were used to generate the estimated waste stream volumes from both processes:

- Arsenic Media Treatment Waste Stream — 0.5% of treated water
- Activated Alumina System
  - Time between regenerations — 2 weeks
  - Backwash rate — 5 times design capacity
  - Caustic flush duration — 15 minutes
  - CO_2 neutralization flush duration — 15 minutes
- Standard Reverse Osmosis Recovery Rate — 80%
- Assumed Evaporation Rate in Phoenix, AZ — 70 inches/year

Table 9 – Waste Generation and Evaporation Calculations for the Entire Balterra Development presents the process calculations utilized to estimate the waste stream produced by the treatment system.

Table 9 – Waste Generation and Evaporation Calculations for the Entire Balterra Development	
Description	**Cumulative Year 5 Requirements**
Treatment Required (gpd) - Based on Avg. Day Demand	997,200
Treatment Required (gpm)	1,000
Arsenic Waste Stream(gpd) @ 0.5%	4,986
Activated Alumina Waste Stream	
Backwash Flow Rate (gpm)	5,000
Backwash Duration (NaOH&CO2) (min)	30
Activated Alumina Waste Stream per Regeneration (gal)	150,000
Regenerations per year	26
Yearly Waste Stream from Activated Alumina (gal)	3,900,000
Yearly Waste Stream from Arsenic Treatment (gal)	1,819,890
Total Waste Generated per year (gal)	5,719,890
Total Waste Generated per year (ft^3)	764,691
Evaporation Rate in Phoenix (inches)	70
Acre required to evaporate waste stream without RO (acres)	3.0
Standard RO Recovery Rate (%)	80
Waste Generated with RO Waste Treatment (gal)	1,143,978
Waste Generated with RO Waste Treatment (ft^3)	152,938
Acres required to evaporate waste stream with RO (acres)	0.6

Based on the calculations, the waste stream will require treatment by a reverse osmosis (RO) unit to reduce the volume of water to be evaporated. The concentrated waste stream will contain arsenic and fluoride and will be evaporated. The permeate generated by the RO unit can be utilized for drinking water.

In order to implement this waste stream treatment, it will be necessary to install a 0.60-acre evaporation pond, a 235,000-gallon storage tank, and a small RO unit to treat the waste generated by the backwash and regeneration processes. The backwash tank is oversized to account for the cumulative effect of storing water. The following costs were added to the treatment system costs (as previously presented in **Tables 6 and 8**):

• 235,000-Gallon Storage Tank	$200,000
• 0.60 -acre Evaporation Pond	$300,000
• Small 50 gpm RO Unit	$100,000
Total Waste Stream Treatment Costs	$600,000

F. RESPONSES TO QUESTIONS POSED BY DOROTHY HAINS ON 12-11-06

1) *Is the well production rate adequate to supply growth?*

The Potable Water Master Plan for the Tonopah Desert Area estimated the well capacity in the area at 1,000 gpm (Table 3.4, Page 22 of 51). This capacity is adequate to supply growth as indicated in **Table 4 – Cumulative Infrastructure Requirements for the Entire Balterra Development** of this document.

2) *What is the size of the pressure tank?*

The pressure tank provided for the water campus will be sized to handle system surges. The booster station will utilize variable speed drives to address varying demands within the distribution system; therefore, the pressure tank will be designed with the booster station, but has been estimated to be 5,000 gallons.

3) *Is there adequate space to install a treatment plant at the water distribution campus?*

Yes, preliminary plans for the water campus include two, one million gallon reservoirs as presented in **Figure 2 – Preliminary Water Campus for Entire Balterra Development.** Construction of the second, one million gallon reservoir will not be required within the first five years of development construction. Therefore, the evaporation pond will be located in the area planned for the second, one million gallon reservoir. Future expansions of the site may require additional treatment of the waste stream generated by the arsenic/fluoride treatment system.

4) *Provide a cost estimate for the proposed treatment facility.*

The estimated costs for the CCN expansion area are provided in **Table 8 – Infrastructure Costs for CCN Expansion Area,** and include the cost of the wells, storage reservoirs, booster stations and treatment systems.