

ORIGINAL

RECEIVED



0000147384

2013 AUG 16 A 10:36

Paul D. Levie, P.C.  
P.O. Box 350  
Chino Valley, AZ 86323  
(928) 778-2600  
pdl@leviegroupp.com

ARIZONA CORPORATION COMMISSION  
DOCKET CONTROL

BEFORE THE ARIZONA CORPORATION COMMISSION

Arizona Corporation Commission

DOCKETED

AUG 26 2013

COMMISSIONERS

BOB STUMP, CHAIRMAN  
GARY PIERCE  
BRENDA BURNS  
BOB BURNS  
SUSAN BITTER SMITH

DOCKETED BY *nr*

IN THE MATTER OF THE APPLICATION OF  
GRANITE MOUNTAIN WATER COMPANY, INC.,  
FOR APPROVAL OF RATE INCREASE.

DOCKET NO. W-02467A-09-0333

IN THE MATTER OF THE APPLICATION OF  
GRANITE MOUNTAIN WATER COMPANY, INC.,  
FOR APPROVAL OF FINANCINGS.

DOCKET NO. W-02467A-09-0334

IN THE MATTER OF THE APPLICATION OF  
GRANITE MOUNTAIN WATER COMPANY,  
INC., FOR AUTHORITY TO INCUR LONG-  
TERM DEBT.

DOCKET NO. W-02467A-10-0483

**SUPPLEMENT TO AMENDED REQUEST TO  
MODIFY DECISIONS**

Granite Mountain Water Company ("GMWC") hereby files this Additional information to our Request to Modify . . . dated July 31st, 2013 and filed with the Arizona Corporation Commission ("ACC") on August 5<sup>th</sup>, 2013, to add the following documents referenced in the Request to Modify . . . which were not available at the time of filing:

1. (Drinking Water Source Approval Form)
2. (Drinking Water Radionulides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report)

In addition, GMWC, hereby submits the following documents that have been updated and revised pursuant to the request of Dorothy Haines of the ACC:

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

- 1. (Revised Water Flow Design Report for GMWC)
- 2. (Updated Central Yavapai Fire District, Granite Mountain Homesites Fire Flow Requirements)

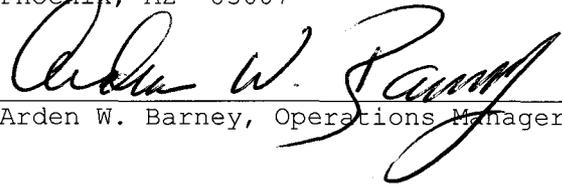
RESPECTFULLY SUBMITTED this 14th day of August, 2013.



Paul D. Levie  
Attorney for Granite Mountain Water  
Company, Inc.

Original and 13 copies filed on  
The 14th day of August, 2013, with:

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



Arden W. Barney, Operations Manager

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
**DRINKING WATER SOURCE APPROVAL FORM**  
SAMPLES TO BE TAKEN AT SOURCE ONLY

Yavapai Water Production, LLC

System ID

System Name

07/15/2013

Sample date

10:00 (24 hr clock)

Sample time

55-210719

ADEQ Project Number

Well ID Number

NEW SYSTEM YES \_\_\_ NO \_\_\_

NEW P.O.E. YES \_\_\_ NO \_\_\_

Surface Water Intake ID Number

Kimble McClymonds

Owner / Contact Person Name

(928) 899-3794

Owner / Contact Person Phone Number

(928) 771-9461

Owner / Contact Fax Number

Short Spur Well (Granite Mtn)

SAMPLING SITE ID

SAMPLE TYPE

Compliance Monitoring

SAMPLE COLLECTION POINT/ID

Point of Entry #

This form is intended to be completely filled out and ALL pages submitted together for all microbiological and chemical tests detailed on this form. If more than one laboratory participated in the analysis, please attach a copy of the original laboratory report, signed by the performing laboratory, to the back of this form.

ALL RESULTS SHALL BE REPORTED IN MILLIGRAMS PER LITER (mg/L) UNLESS OTHERWISE SPECIFIED.

**Please note:**

The Arsenic MCL is currently 0.05 mg/L. However, on Jan. 23, 2006, the Arsenic MCL will be 0.01 mg/L.

**PLEASE MAIL THIS COMPLETED FORM TO:**

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
TECHNICAL REVIEW UNIT  
DRINKING WATER SECTION (5415B-2)  
1110 W. Washington St.  
Phoenix, AZ 85007

**\*\*\*Inorganic Chemical Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
EPA 200.8	0.01	0.01	Arsenic	1005	07/23/2013 12:25	0.0042	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.7	2	2	Barium	1010	07/22/2013 15:20	0.02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EPA 200.8	0.005	0.005	Cadmium	1015	07/23/2013 12:25	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.7	0.1	0.1	Chromium	1020	07/22/2013 15:20	<0.005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.7	1.3*	0.050	Copper	1022	07/22/2013 15:20	<0.01	<input type="checkbox"/>	<input type="checkbox"/>
SM 4500 F C	4.0	2.0	Fluoride	1025	07/19/2013 15:45	0.43	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.8	0.015*	0.0025	Lead	1030	07/23/2013 12:25	<0.0010	<input type="checkbox"/>	<input type="checkbox"/>
EPA 245.1	0.002	0.002	Mercury	1035	07/18/2013 16:56	<0.0002	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Calculation	10	5	Nitrate (as N)	1040	07/23/2013 14:35	1.66	<input type="checkbox"/>	<input type="checkbox"/>
SM 4500 NO2 B	1	0.5	Nitrite	1041	07/15/2013 16:55	<0.10	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.8	0.05	0.05	Selenium	1045	07/23/2013 12:25	0.0022	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.8	0.006	0.006	Antimony	1074	07/23/2013 12:25	<0.0005	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EPA 200.7	0.004	0.004	Beryllium	1075	07/22/2013 15:20	<0.002	<input type="checkbox"/>	<input type="checkbox"/>
SM 4500 CN E	0.2	0.2	Cyanide (as free cyanide)	1024	07/16/2013 15:18	<0.010	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.7	0.1	0.1	Nickel	1036	07/22/2013 15:20	<0.02	<input type="checkbox"/>	<input type="checkbox"/>
EPA 200.8	0.002	0.002	Thallium	1085	07/23/2013 12:25	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



\* Action Level

**\*\*\*Physical Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result
EPA 300.0			Sulfate	1055	07/18/2013 9:14	10.9
EPA 200.7			Sodium	1052	07/22/2013 15:20	13
SM 4500H B			pH	1925	07/15/2013 16:55	7.7
SM 2320 B			Alkalinity	1927	07/16/2013 16:00	195
SM2340B			Hardness/Calcium	1918	07/22/2013 15:20	195
Miscellaneous			Langelier Index	1997	07/24/2013 8:57	0.130
SM 2540 C			Total Dissolved Solids-TDS	1930	07/21/2013 10:00	261

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



**\*\*\*Synthetic Organic Chemical Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
EPA 515.3	0.07	0.0001	2,4-D	2105	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 515.3	0.05	0.0002	2,4,5-TP (Silvex)	2110	07/19/2013 0:00	<0.0002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.002	0.0002	Alachlor	2051	07/19/2013 0:00	<0.0002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 505	0.003	0.001	Toxaphene	2020	07/25/2013 17:19	<0.0010	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.003	0.0001	Atrazine	2050	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 531.2	0.04	0.0009	Carbofuran	2046	08/01/2013 16:00	<0.0009	<input type="checkbox"/>	<input type="checkbox"/>
EPA 515.3	0.001	0.00004	Pentachlorophenol	2326	07/19/2013 0:00	<0.00004	<input type="checkbox"/>	<input type="checkbox"/>
EPA 505	0.002	0.0002	Chlordane	2959	07/25/2013 17:19	<0.00020	<input type="checkbox"/>	<input type="checkbox"/>
EPA 504.1	0.0002	0.00002	Dibromochloropropane (DBCP)	2931	07/18/2013 0:00	<0.00002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 504.1	0.00005	0.00001	Ethylene Dibromide (EDB)	2946	07/18/2013 0:00	<0.00001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.0004	0.00004	Heptachlor	2065	07/19/2013 0:00	<0.00004	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.0002	0.00002	Heptachlor Epoxide	2067	07/19/2013 0:00	<0.00002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.0002	0.00002	Lindane	2010	07/19/2013 0:00	<0.00002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.04	0.0001	Methoxychlor	2015	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.0002	0.00002	Benzo(a)pyrene	2306	07/19/2013 0:00	<0.00002	<input type="checkbox"/>	<input type="checkbox"/>
EPA 515.3	0.2	0.001	Dalapon	2031	07/19/2013 0:00	<0.0010	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.006	0.0006	Di(2-ethylhexyl)phthalate	2039	07/19/2013 0:00	<0.0006	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.4	0.0006	Di(2-ethylhexyl)adipate	2035	07/19/2013 0:00	<0.0006	<input type="checkbox"/>	<input type="checkbox"/>
EPA 515.3	0.007	0.0002	Dinoseb	2041	07/19/2013 0:00	<0.0002	<input type="checkbox"/>	<input type="checkbox"/>
EPA-5 1613B-Tetra3 x 10(-8)	5 x 10(-9)		2,3,7,8-TCDD (Dioxin)	2063	07/23/2013 13:20	ND	<input type="checkbox"/>	<input type="checkbox"/>
EPA 549.2	0.02	0.0004	Diquat	2032	07/19/2013 0:00	<0.0004	<input type="checkbox"/>	<input type="checkbox"/>
EPA 548.1	0.1	0.009	Endothall	2033	07/19/2013 0:00	<0.0090	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.002	0.00001	Endrin	2005	07/19/2013 0:00	<0.00001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 547	0.7	0.006	Glyphosate	2034	07/25/2013 21:39	<0.006	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.001	0.0001	Hexachlorobenzene	2274	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.05	0.0001	Hexachlorocyclopentadiene	2042	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 531.2	0.2	0.002	Oxamyl	2036	08/01/2013 16:00	<0.0020	<input type="checkbox"/>	<input type="checkbox"/>
EPA 515.3	0.5	0.0001	Picloram	2040	07/19/2013 0:00	<0.0001	<input type="checkbox"/>	<input type="checkbox"/>
EPA 525.2	0.004	0.00007	Simazine	2037	07/19/2013 0:00	<0.00007	<input type="checkbox"/>	<input type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: 3071222-01

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



Aroclor Results may be submitted in lieu of PCB

Method 505 analyzed by Legend Technical Services, Inc., St. Paul, MN, #AZ0557

Methods 504, 515, 525, 547, 548 and 549 analyzed by Underwriters Laboratories, South Bend IN, #AZ0432.

Method 1613 (Dioxin) performed by Pace Analytical Services, Minneapolis, MN #AZ0014.

**\*\*\*Aroclor (PCB Screening Test)\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds Reporting Limit
EPA 505		0.00008	Aroclor 1016	2388	07/25/2013 17:19	<0.000080	<input type="checkbox"/>
EPA 505		0.02	Aroclor 1221	2390	07/25/2013 17:19	<0.020	<input type="checkbox"/>
EPA 505		0.0005	Aroclor 1232	2392	07/25/2013 17:19	<0.00050	<input type="checkbox"/>
EPA 505		0.0003	Aroclor 1242	2394	07/25/2013 17:19	<0.00030	<input type="checkbox"/>
EPA 505		0.0001	Aroclor 1248	2396	07/25/2013 17:19	<0.00010	<input type="checkbox"/>
EPA 505		0.0001	Aroclor 1254	2398	07/25/2013 17:19	<0.00010	<input type="checkbox"/>
EPA 505		0.0002	Aroclor 1260	2400	07/25/2013 17:19	<0.00020	<input type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



**\*\*\*Volatile Organic Chemical Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
EPA 524.2	0.007	0.0005	1,1-Dichloroethylene	2977	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.2	0.0005	1,1,1-Trichloroethane	2981	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	1,1,2-Trichloroethane	2985	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	1,2-Dichloroethane	2980	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	1,2-Dichloropropane	2983	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	Benzene	2990	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	Carbon Tetrachloride	2982	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.07	0.0005	cis-1,2-Dichloroethylene	2380	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.7	0.0005	Ethylbenzene	2992	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.1	0.0005	(mono) Chlorobenzene	2989	07/19/2013 12:45	<0.0005	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.6	0.0005	o-Dichlorobenzene	2968	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.075	0.0005	Para-Dichlorobenzene	2969	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.1	0.0005	Styrene	2996	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	Tetrachloroethylene	2987	07/19/2013 12:45	<0.0005	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	1	0.0005	Toluene	2991	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.1	0.0005	Trans-1,2-Dichloroethylene	2979	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	Trichloroethylene	2984	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.002	0.0005	Vinyl Chloride	2976	07/19/2013 12:45	<0.0005	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	10	0.0005	Xylenes, total	2955	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.07	0.0005	1,2,4-Trichlorobenzene	2378	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>
EPA 524.2	0.005	0.0005	Dichloromethane	2964	07/19/2013 12:45	<0.0005	<input type="checkbox"/>	<input type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



**\*\*\*Radiochemical Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL	Exceeds Reporting Limit
Calculation	5 pCi/L	1 pCi/L	Combined Radium	4010	07/18/2013 0:00	<0.4	<input type="checkbox"/>	<input type="checkbox"/>
EPA 903.1		1 pCi/L	Radium 226	4020	07/18/2013 0:00	<0.2		<input type="checkbox"/>
EPA 904.0		1 pCi/L	Radium 228	4030	07/18/2013 0:00	<0.4		<input checked="" type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



- \* Gross alpha is the value of all alpha particle emitters except for uranium and radon 222. Radium 226 is included in the reported gross alpha value. All units are reported in picocuries per liter (pCi/l) EXCEPT for gross beta which is reported in millirem per year.
- \*\* These values are assumed to produce a total body or organ dose of 4 millirem per year.

Radiochemistry performed by Radiation Safety, Chandler AZ #AZ0462.

**\*\*\*Asbestos Analysis\*\*\***

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL
EPA 100.1	7 MFL	0.2	Asbestos	1094	07/18/2013 0:00	<0.2	<input type="checkbox"/>

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



Asbestos performed by Fiberquant, Phoenix AZ #AZ0663

**\*\*\*Microbiological Analysis\*\*\***

Analysis Method	MCL	Contaminant Name	Cont. Code	Test Start Date/Time	Analysis Run Date/Time	Result
SM 9223B	Present / 1 or more Coliform	Total Coliform	3000	7/15/2013 5:10:00PM	7/15/2013 5:10:00PM	Absent

**LABORATORY INFORMATION**

Specimen Number: **3071222-01**

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_



ONLY REPORT FECAL RESULT IF TOTAL COLIFORM RESULT IS POSITIVE

Analysis Method	MCL	Contaminant Name	Cont. Code	Test Start Date/Time	Analysis Run Date/Time	Result
SM 9223B	Present / 1 or more Coliform	E. Coli or Fecal Coliform	3013	7/15/2013 5:10:00PM	7/15/2013 5:10:00PM	Absent

LABORATORY INFORMATION

Specimen Number: 3071222-01

Lab ID Number: AZ0004

Name: Legend Technical Services of Arizona

Comments: \_\_\_\_\_

Authorized Signature:  \_\_\_\_\_

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
**Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report**  
 \*\*\* Samples to be taken at Entry Point to the Distribution System (EPDS) Only \*\*\*

PWS ID#: \_\_\_\_\_ PWS Name: Yavapai Water Production, LLC

07/22/2013 14:00 (24 hr clock) Kimble McClymonds

Sample date Sample time Owner / Contact Person Name

(928) 771-9461 (928) 899-3794

Owner / Contact Fax Number Owner / Contact Person Phone Number

Sample Collection Point

EPDS #

Granite Mtn (New)

Sampling Site ID \_\_\_\_\_

Date Q1 Collected \_\_\_\_\_

Date Q2 Collected \_\_\_\_\_

Date Q3 Collected \_\_\_\_\_

Date Q4 Collected \_\_\_\_\_

**Compliance Sample Type:**

Reduced Monitoring

Quarterly

Composite of four quarterly samples

**\*\*\*RADIONUCLIDE ANALYSIS\*\*\***

>>>To be filled out by laboratory personnel<<<

\*\*\*Combined Uranium must be reported in micrograms per liter\*\*\*

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analysis Run Date	Result	Exceeds MCL
EPA 600/00-02		3 pCi/L	Gross Alpha	4002	07/29/2013 0:00	2.1 ± 0.7	

>>>> LABORATORY INFORMATION <<<<<

To be filled out by laboratory personnel

Specimen Number: 3072002-01

Lab ID Number: AZ0004

Lab Name: Legend Technical Services of Arizona

Printed Name and Phone Number of Lab Contact: Cory Lund (602) 324-6100

Comments: \_\_\_\_\_

Authorized Signature: 

Date Public Water System Notified: \_\_\_\_\_

Methods EPA 600/00-02, 900.0, 903.0, 904.0, 7500-RN, & 00-07 performed by Radiation Safety, Chandler, AZ, AZDHS# AZ0462

# **WATER SUPPLY AND FIRE FLOW DESIGN REPORT**

## **FOR GRANITE MOUNTAIN WATER COMPANY**

**GRANITE MOUNTAIN WATER COMPANY**

**P.O. BOX 350**

**CHINO VALLEY, AZ 86323**

**928-776-9641**

**CONTACT PERSON: ARDEN BARNEY**

**REPORT PREPARED BY:**

**BC ENGINEERING**

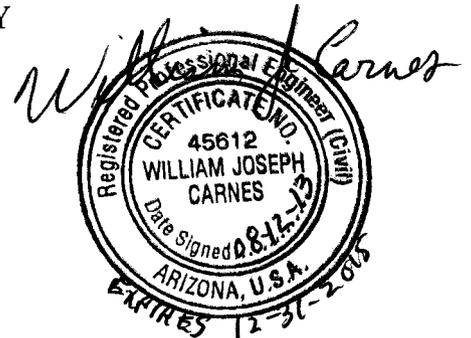
**212 S. MARINA STREET**

**PRESCOTT, AZ 86303**

**928-899-8772**

**CONTACT PERSON: WILLIAM J CARNES**

**August 12, 2013**



## **INTRODUCTION**

This report is to calculate and verify the water usage demand and the fire flow demand for the GRANITE MOUNTAIN WATER COMPANY in Prescott, Arizona. The GRANITE MOUNTAIN WATER COMPANY serves the GRANITE MOUNTAIN HOMESITES SUBDIVISION located northwest of Prescott on Williamson Valley Road.

Currently, there are 123 lots being served by the water company. At total build-out, there will be 175 lots being served by the water company. With a design capita of 2.5 persons per lot, that equates to 438 people will be served by the water company at total build-out.

Presently, there are two wells, well #3 and well #4, supplying water for the water company with construction plans being submitted for a third well to be added for water production for the company. There are currently two storage tanks serving the water company. One of 50,000 gallons capacity and the other with 12,667 gallons capacity, making a total storage capacity of 62,667 gallons storage.

## **WATER DEMAND FOR WATER DISTRICT**

As stated above, at total build-out, the water district will have 175 lots being served by the water company. Historic water usage data collected for the water district for the year of 2012 for the presently occupied 123 lots gives the average daily usage of 27,992 gallons per day for the 123 lots. This gives an average monthly water usage of:

$$27,992 \text{ gal/day for 123 lots} \times 31 \text{ days/month} = 867,752 \text{ gal/month for 123 lots.}$$

For total build-out of 175 lots, this would give a average daily usage of:

$$27,992 \text{ average gal/day for 123 lots} \times 175 \text{ lots} / 123 \text{ lots} = 39,826 \text{ gal/day for 175 lots}$$

This would give an average monthly usage for total build-out of 175 lots of:

$$39,826 \text{ gal/day for 175 lots} \times 31 \text{ days/month} = 1,234,607 \text{ gal/month for 175 lots.}$$

Now, we have to convert this average monthly water usage to an average daily usage for each lot. The calculation for this would be:

$$1,234,607 \text{ average gal/month} \div (31 \text{ days/month} \times 175 \text{ lots}) = 228 \text{ gpd/lot average daily usage}$$

This historic calculated water data for the year of 2012 will be used to calculate the daily demand factors for the water district at total build-out. Therefore, at total build-out, the water demand for the district will be:

### **AVERAGE DAILY DEMAND**

$$175 \text{ lots} \times 228 \text{ gpd/lot} = 39,826 \text{ gallons per day water demand or } 28 \text{ gpm}$$

### **MAXIMUM DAILY DEMAND**

$$1.8 \times \text{average daily demand} = 1.8 \times 39,826 \text{ gallons} = 71,687 \text{ gallons per day}$$

or 50 gpm

## **PEAK HOURLY DEMAND**

$$1.7 \times \text{maximum daily demand} = 1.7 \times 71,687 \text{ gallons} = 121,868 \text{ gallons per day}$$

or 85 gpm

## **WATER SUPPLY FOR WATER DISTRICT**

As stated above, the water company has two wells, well #3 and well #4, that currently supply water for the water district, and a third proposed well, well #6 that will be added shortly to supply water for the water district. The quantity of water that each well can produce is:

Well #3 produces	22 gpm	or	31,680 gallons per day
Well #4 produces	60 gpm	or	86,400 gallons per day
Well #6 will produce	35 gpm	or	50,400 gallons per day

Water from the wells is pumped to two existing storage tanks, one of 50,000 gallons storage capacity and one of 12,667 gallons storage capacity. Water is supplied throughout the water district through a 2,000 gallon hydroneumatic tank and two 15 hp booster pumps, each having a pumping capacity of 250 gpm.

## **OPERATIONAL STORAGE REQUIREMENTS**

Operational storage requirements for the water district are based on the water demand at total build-out of 175 lots which has, as calculated above, the average daily demand of 39,826 gallons per day. The current storage capacity of the water system is 62,667 gallons with the two existing storage tanks. This is greater than the average daily demand of 39,826 gallons, so therefore the operational daily storage requirements are met.

Fire flow storage requirements are based on the approved fire flows and fire suppression systems required for the lots at the time the various units of Granite Mountain Homesites were platted and approved by Yavapai County. The required fire flow for these platted units of Granite Mountain Homesites is 500 gpm for a duration of 2 hours which is equal to 60,000 gallons. Along with this required fire flow of 500 gpm is a note called "Fire Suppression" on the cover of the plats that states each home within the subdivision will be built with fire sprinklers or other approved fire suppression system. These two fire suppression requirements were a condition of the approval for each platted unit of Granite Mountain Homesites with Yavapai County and is stated as a part of the Department of Real Estate Public Report that is filed with each plat.

**Also, in contacting the Central Yavapai Fire District fire marshal, the current fire code used by the fire district for the Granite Mountain Homesites subdivision is stated thusly:**

**B105.1 One and Two family dwellings: The minimum fire flow and flow duration requirements for one and two family dwellings having a fire flow calculation area which does not exceed 3,600 square feet shall be 1,000 gallons per minute for 1 hour. A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system. A letter from the Central Yavapai Fire District fire marshal stating the fire flow requirements is enclosed with this report.**

Therefore, fire flow storage requirements for the water district are:

$$500 \text{ gpm} \times 60 \text{ minutes duration} = 30,000 \text{ gallons}$$

The storage capacity of the two existing storage tanks is 62,667 gallons, which is greater than the required fire flow storage of 30,000 gallons, therefore the fire storage capacity for the water system is met.

## CONCLUSIONS AND RECOMMENDATIONS

Granite Mountain Water Company is putting into service a third high production well for their water district, and construction plans for the connection of this third well to the subdivision domestic water system are being submitted along with this water report. The three wells will work together or alternate to pump water to the storage tanks. The two storage tanks have a total capacity of 62,667 gallons.

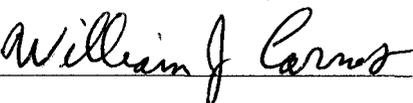
At present, there are 123 lots being served by the water company. At total build-out, there will be 175 lots with service connections to the water company system. At a Granite Mountain Water Company historic water usage demand for each lot of 228 gallons per day, that gives a water demand of  $228 \text{ gpd/lot} \times 175 \text{ lots} = 39,826 \text{ gallons per day}$ . With the existing storage capacity of 62,667 gallons, this is more than the daily demand of 39,826 gallons and provides adequate daily storage capacity.

The fire flow storage capacity requirement for the Granite Mountain Homesite Subdivision is 500 gpm for a duration of 1 hours and that each house built in the subdivision be sprinkled or have another approved fire suppression system as recorded on the approved plat and as stated within the filed Department of Real Estate Public Report. The fire storage capacity requirement is therefore:

$$500 \text{ gpm} \times 60 \text{ minutes} = 30,000 \text{ gallons.}$$

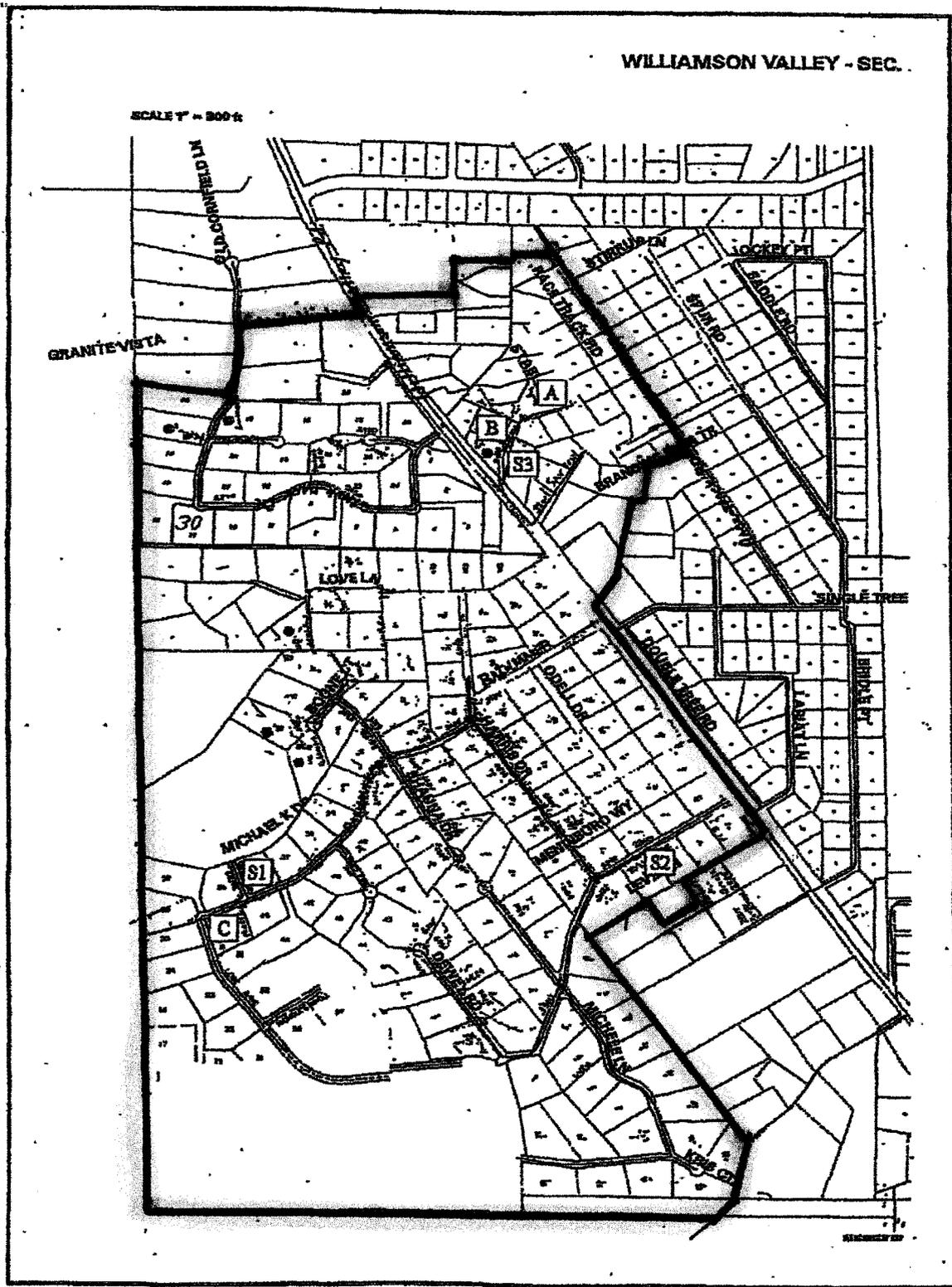
The capacity of the existing two storage tanks is 62,667 gallons, which is greater than the required 30,000 gallons and the fire flow storage capacity requirement is met.

With the addition of a third well, which will nearly double the water production for the Granite Mountain Water Company, and showing, with the above calculations, that the daily demand storage and the fire flow storage is adequate for the subdivision, I recommend that the Granite Mountain Water Company water system is adequate to provide the needed water demand for the subdivision at total build-out. Thank you for your time and effort in the review of this water report and accompanying new well construction plans.

  
\_\_\_\_\_  
William J Carnes, P.E.

# GRANITE MOUNTAIN WATER COMPANY

## SERVICE AREA



**FIRE SUPPRESSION NOTE FROM COVER OF GRANITE MOUNTAIN HOMESITES, UNIT 5, PHASE 3 SUBDIVISION PLAT RECORDED IN BOOK 55, PAGE 84:**

**THIS IS AN EXAMPLE OF THE FIRE FLOW AND FIRE SUPPRESSION THAT WAS REVIEWED AND APPROVED WHEN THE CONSTRUCTION PLANS AND THE FINAL PLAT OF EACH UNIT OF GRANITE MOUNTAIN HOMESITES WERE APPROVED BY YAVAPAI COUNTY.**

**ASSURANCE**

SATISFACTORY ASSURANCE IN THE FORM OF A CONSTRUCTION AGREEMENT FROM WELLS FARGO IN THE AMOUNT OF \$250,000 HAS BEEN PROVIDED IN THE FULL AMOUNT NECESSARY TO GUARANTEE THE INSTALLATION OF STREETS, WATER, AND ALL REQUIRED IMPROVEMENTS IN THIS SUBDIVISION (ELECTRIC) (PHONE) UTILITY SERVICES HAVE BEEN ASSURED BY LETTER FROM THE APPROPRIATE UTILITY COMPANIES

BY: [Signature]  
CHAIRMAN

1/24/06  
DATE

ATTEST: [Signature]  
CLERK OF THE BOARD

1/24/06  
DATE



**FIRE SUPPRESSION NOTE**

ALL RESIDENTIAL STRUCTURES WITHIN THIS SUBDIVISION SHALL BE CONSTRUCTED WITH FIRE SUPPRESSIONS SYSTEMS (SPRINKLERS OR OTHER ACCEPTABLE METHOD) APPROVED BY THE CENTRAL YAVAPAI FIRE DISTRICT.

**CC & R's**

THE DECLARATION OF RESTRICTIONS FOR THIS SUBDIVISION IS BY ANNEXATION DECLARATION RECORDED IN BOOK 4357 OF OFFICIAL RECORDS, PAGE 812, INCORPORATING THAT CERTAIN DECLARATION COVENANTS, CONDITIONS AND RESTRICTIONS FOR GRANITE MOUNTAIN HOMESITES, UNIT V, PHASE 2, DATED JUNE 8, 2005 AND RECORDED JUNE 23, 2005 IN BOOK 4278, PAGE 373 OF THE OFFICIAL RECORDS OF YAVAPAI COUNTY, ARIZONA



August 7, 2013

William J Carnes, P.E.  
212 S Marina Street  
Prescott AZ 86303

Re: **Granite Mountain Homesites**  
**Fire Flow Requirements**

Dear Mr. Carnes:

The fire flow requirements for the homes in the Granite Mountain Homesites subdivision are as follows:

*B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m<sup>2</sup>) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m<sup>2</sup>) shall not be less than that specified in Table B105.1. Exception: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.*

The Central Yavapai Fire District Fire Protection Standards, Section 5.01-3 states:

**5.01-3** Per amended Table B 105.1, any building or subdivision in the fire district shall meet fire flows. The requirement may be met by fire hydrant(s), fire alarm system and/or fire sprinkler system. All buildings over 5,000 square feet require a fire sprinkler system.

Due to the fact that there are no fire hydrants installed in this subdivision, fire sprinkler systems in each home are considered an acceptable alternative.

If you have any questions or if I can be of further assistance, please call me at (928) 759-9933.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick Chase", with a long horizontal flourish extending to the right.

Rick Chase  
Fire Marshal

Xc: Occupancy File  
File ADM 4.5.1