

Drinking Water
Board Packet
May 9, 2014

Agenda



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

Drinking Water Board
Paul Hansen, P.E., *Chair*
Betty Naylor, *Vice-Chair*
Brett Chynoweth
Tage Flint
Heather Jackson
Brad Johnson
Natasha Madsen
David Stevens, Ph.D.
Mark Stevens, M.D.
Kenneth H. Bousfield, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING

Friday, May 9, 2014

1:30 pm

Bear River Water Conservancy District Offices
102 W Forest Street
Brigham City, Utah 84302

Ken Bousfield's Cell Phone #: (801) 674-2557

1. Call to Order – Chairman Hansen
2. Roll Call – Ken Bousfield
3. Introductions – Chairman Hansen
4. Approval of the Minutes:
 - A. February 27, 2014 Board Meeting
 - B. April 16, 2014 Board Meeting
5. Financial Assistance Committee Report
 - A. Status Report – Michael Grange
 - B. Project Priority List – Michael Grange
 - C. SRF Applications
 - i. STATE:
 - a) Leamington / De-authorization – Rich Peterson
 - b) Trenton Town – Julie Cobleigh
 - ii. FEDERAL:
 - a) Big Plains – Jesse Johnson
 - b) Boulder Farmstead – Jesse Johnson
 - iii. OTHER:
6. Authorization to Initiate Rule Revision- Tammy North
 - A. R309-545 Drinking Water Storage Tanks
 - B. R309-550 Transmission and Distribution Pipelines

7. AWWA Intermountain Section Report – Alane Boyd
8. Rural Water Association Report - Dale Pierson
9. Chairman’s Report
10. Directors Report
 - A. Legislative Audits
 - B. EPA Audits
 - C. Energy Efficiency
11. Date of Next Drinking Water Board Meeting: July 18, 2014
12. Other
13. Adjourn

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Brooke Baker, Office of Human Resources, at: (801) 536-4412, TDD (801) 536-4424, at least five working days prior to the scheduled meeting.

Agenda Item

4(A)



State of Utah

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DRINKING WATER BOARD MEETING

February 27, 2014 -2:00 p.m.

Dixie Convention Center, Garden Room
1835 Convention Center Drive
St. George, Utah 84790

DRAFT MINUTES

1. Call to Order – Chairman Hansen

Paul Hansen called the meeting to order at 2:00 pm.

2. Roll Call – Ken Bousfield

Board Members present: Paul Hansen, Betty Naylor, and David Stevens.

Board Members attending telephonically: Tage Flint and Brad Johnson. Tage Flint disconnected from the meeting at approximately 2:36, after all items needing a motion were addressed.

Board Members excused: Brett Chynoweth, Heather Jackson, Natasha Madsen and Mark Stevens.

Executive Secretary: Kenneth Bousfield

3. Introductions – Chairman Hansen

Due to time constraints this item was skipped over.

4. Elections of Chairman and Vice Chairman

- Betty Naylor nominated Paul Hansen to remain as Chairman. David Stevens seconded that nomination.
- Betty Naylor moved to close nominations after no others were made. David Stevens seconded The motion was carried unanimously by the Board.
- David Stevens nominated Betty Naylor to remain as Vice Chair. Paul Hansen seconded that nomination.
- Paul Hansen moved to close nomination after no others were made. David Stevens seconded. The motion was carried unanimously by the Board.

5. Approval of the Minutes

a. January 17, 2014

b. January 30, 2014

- Betty Naylor moved to approve both sets of minutes, with a few clerical only corrections needing to be made. David Stevens seconded. The motion was carried unanimously by the Board.

6. Financial Assistance Committee Report

1. Status Report – Michael Grange

Michael Grange, Engineering Manager with the Division of Drinking Water (DDW; the Division), reported that since January of 2014 the staff, due to the Buy American provision that Congress passed, closed the Woods Cross City State Revolving Fund (SRF) loan and then split the project into two different parts. The pipeline portion of the project will be funded \$1.25 million through the Federal program and the treatment plant portion will be funded \$3.225 million through the State program. On Tuesday, February 18th, he attended the groundbreaking on behalf of the Division and the Board. It is expected to be completed by September or October of this year. Michael also stated that the staff has authorized planning advances to Willow Creek Water Company; Hildale City, Rockville Pipeline Company and the Lizard Bench Water Association.

Michael informed the Board on behalf of Sandy Pett that, after reading through the rules and policies staff has determined there is no required Board action for the Intended Use Plan (IUP). The 2014 IUP is currently being developed. There is still going to be a public comment period within the next week however, and it will be available on the Division's internet page. Michael also reminded the board of the 2011 EPA Needs survey that the Division participated in. He went on to explain that it is this survey that determines allocations or appropriations of the cap grant and due to the Division's participation Utah's allocation changed from 1.00% to a 1.04%, which resulted in an additional \$384,000 for the coming fiscal year. He then informed the Board that the cap grant for the State program is currently \$9,229,000. The Division is requesting \$922,000 in set asides and will need to have \$1.845 million in State matching funds, which means that the Division will have a bit over \$8.6 million to allocate to water systems in Utah in the coming fiscal year.

Referring the Board to the handouts in their packet, he pointed out that the State Loan Funds are currently just over \$700,000, which takes into account the roughly \$3.5 million that was recently re-allocated from the Federal fund for the Woods Cross project. He stated that in the coming year the Division is expecting to receive an additional \$6 million, for a total of \$6.7 million in the State fund for projects. Moving on to the Federal SRF Loan Funds, he noted that they are currently at around \$40 million in the bank, with 8 projects authorized, but not yet closed accounting for \$18.2 million of that. The Division is expecting another \$16 million in the coming year, bringing the total to around \$37.8 million in the Federal fund.

The Board inquired as to whether the Division had received any update on the Buy American Provision with regards to the Federal funds. Michael let them know that the Division has not yet been given any guidance from the EPA on how to implement it. He stated that there are rumored to be some movement toward a national waiver to relax some of the requirements, with regards to when the project was authorized and when the specifications were approved, but nothing official yet.

2. Project Priority List – Michael Grange

Michael Grange, Engineering Manager with DDW, informed the Board that one project, the Forest Glen A Homeowners Association (HOA), is being added to the priority list with 20.5 deficiency points, and that the project consists of screening development, a new tank, a transmission line and

water line replacement. Division staff recommends that the Board approve the updated project priority list.

- Betty Naylor moved to approve the updated project priority list. Paul Hansen seconded. The motion was carried unanimously by the Board.

3. SRF Applications

FEDERAL:

a. Forest Glen A (Rich Peterson)

Rich Peterson, Environmental Engineer with DDW, updated the Board on the Forest Glen A Homeowners Association (HOA) that was added to the project priority list. He stated that they have a significant deficiency in their storage capacity and their plan is to redo their whole system, including the transmission line, redevelopment of their spring, and replacing water lines.

There was an updated handout passed out at the meeting with the costs for the project reflecting the Buy American Provision. Rich stated that there is currently an exception letter for the fire flow requirements being drafted, which would make it possible to go with a 40,000 gallon tank instead of 145,000 gallon tank, in turn bringing down some of the cost associated with the project. The total cost of the project is currently \$1,291,280,000, of which self-contribution would be \$41,280.00. In order to keep the consistent 30% principle forgiveness, the loan would be \$881,000.00, 0% interest for 30 years, and the grant portion would be \$369,000.00. Rich also let the Board know that the Homeowners Association had approved an increase per connection to assist with covering costs on their end. Division staff recommends a combined loan of \$1,250,000 with the same interest rate as convention.

Steve Macintosh, water operator with the HOA, spoke on their behalf and thanked the Board for their help in the past and on this current project. When questioned by the Board as to whether they had considered the option of joining onto a bigger water system, he replied that right now the HOA has water agreements with Salt Lake City, but in the past when they have brought up regionalization of canyon water systems they were told “there will be no combining the systems”. Steve went on to state that he has tried again recently, even contacting city council members, but has been unable to get any response and therefore he believes that they are still not interested in allowing joining of systems. He also noted that they are not willing to modify their water agreement contracts to allow him to tie the fire station water supply in. When asked about the supply going away, Steve responded that he has often wondered that. He explained that the contracts are expungeable with a 30 day notice by either party, that approximately 2 years ago; they were told that all the water had been allocated for the contracts. He also stated that to his knowledge Salt Lake City is now buying water from Central Utah, which leads him to believe that they’re not going to take that water back.

The Board was concerned about residents existing water bill going up from \$33 to \$100 and wanted to know what kind of public feedback was received at their hearings. Steve let the board know that last year a water committee was designated to pursue options as they were aware of issues. The committee and the Board of Directors presented a master plan at an HOA meeting and had around 66% voting for the increase to improve the water system.

- Paul Hansen moved to authorize a loan of \$1.25 million at an interest rate of 0% for 30 years, with \$369,000 in principle forgiveness, and the given amount being \$881,000, with the condition that all issues be resolved. David Stevens seconded. The motion was carried unanimously by the Board.

4. OTHER:

a. Hanna Water and Sewer – Michael Grange

Michael Grange, Engineering Manager with DDW, informed the Board that the Hanna Water and Sewer Special Service District (Hanna) is requesting approval for a change in the scope of work from the May 2010 authorization. The change would allow the system to use \$180,000 remaining funds towards construction of a new 750,000 gallon drinking water storage tank. The total cost to build this tank is estimated at \$810,000; Hanna is requesting \$630,000 from the Community Impact Board. The new tank will resolve storage and pressure issues in their systems upper pressure zone. Division staff recommends the Board approve a change in scope of work authorized in May 2010 allowing Hanna Water and Sewer Special Service District to use the remaining \$180,000 in funds to build a new 700,000 gallon storage tank.

The Board commented that it is always nice to see a community use their funds wisely and commended Hanna, their project team and their staff for doing so. It was also noted that this tank was part of the original application, but was pulled back, due to fears that the cost would be more than the funds.

- Paul Hansen moved to approve a change in scope of work that would allow Hanna to utilize remaining funds toward the storage tank. Betty Naylor seconded. The motion was carried unanimously by the Board.

b. Historical use of grant/principle forgiveness in Utah’s SRF program

Michael Grange, Engineering Manager with DDW, updated the Board on the historical use of grant/principle forgiveness in the SRF program as was requested. He referred them to the print out in their packets and let them know that the information contained in them was from data taken from all construction projects authorized, not including any planning monies, the money for the large water conservancy districts, or the Wasatch Mountain Club Foundation as it was all grant monies, from January 2005 to January 2014. He reported that for the Federal program with grant/principle forgiveness, the Division authorized 40 projects totaling just over \$20.1 million, the maximum being about \$18,000 per connection, the minimum being \$6.91 per connection, with an average grant/principle forgiveness amount of \$4,200 per connection. He then went on to state that for total funding for the Federal program, the Division had authorized 94 projects totaling \$145.6 million, the maximum being just over \$42,000 per connection, the minimum being \$8.40 per connection.

Michael summed it up by saying that from a cost effective standpoint, there was no trend, no real significance to any of these statistics and that by looking at this it shows that the Board is deliberate in taking to account the needs of the projects rather than the cost effectiveness of the projects. The Board agreed and stated that it also shows there is no arbitrariness, that each community is unique, and it is all based on consideration for each system.

7. R309-545 Drinking Water Storage Tanks & R309-550 Transmission and Distribution Pipelines - Rule Revision Status & Solicitation of Informal Comments – Tammy North

Tammy North, Environmental Engineer with DDW, brought before the Board, as an informational item, upcoming updates to rules R309-545 & R309-550. She let the Board know that the Division has gone through and made updates they felt were necessary and has plans to send those out to engineers and water systems for informal review and comment, and that it will also be posted on the Division’s website for the public. The goal is to come back before the Board in May, with the updated rule revisions and ask for approval to start the rulemaking process formally.

The Board asked if this update would include the new EPA guidelines for lead-free components and if there would be public meetings for the changes. Tammy informed the Board that this would indeed include the updates from EPA. As for public meetings, she stated it is not a requirement and she doesn't foresee a need for one, however there is the option.

8. Chairman's Report

Paul Hansen, Board Chairman, took a moment to thank the Board and Division staff for the opportunity he has had to work with them and to commend them on their professionalism, courtesy, and willingness to assist the community. The Board also made note that at the Rural Water Users Association banquet held Wednesday, February 26th, Ken Bousfield was given the Friend of Rural Water Award for 38 years of service.

Dale Pearson, Executive Director of the Rural Water Association of Utah (RWAU), reported that he feels it's important to recognize the close ties that the Division, the Board, and RWAU have, and how much RWAU is appreciative of that. He also informed the Board that about 1773 people were in attendance at the RWAU Annual conference and he believes that there was a lot of good training that went on, as well as fun. He expressed appreciation to the Board and the Division, for being a part of the conference.

9. Director's Report

Ken Bousfield, Director of DDW, took a moment to recognize Heather Bobb who filled in for Linda Matulich, and did a terrific job of organizing the current Board meeting; and Marianne Booth who will be replacing Linda as the Administrative Secretary.

a. Legislative Update

Ken Bousfield, Director of DDW, informed the Board that the Divisions budget request has passed the appropriation subcommittee and the executive appropriations, and now needs to be approved by the House and Senate. Ken expressed his opinion that the legislature will have no problem doing so. This means that the Division won't be assessing fees to water systems as discussed at prior Board meetings.

b. DDW's Involvement at the RWAU Conference

Ken reported that from the Division's standpoint, the RWAU conference has been very successful and reported the following statistics:

- Staff made presentations at 15 different sessions, with Kim Dyches, Environmental Program Manager with DDW setting a record. He presented topics for Operators seeking Certification for a total of 4 hours on Monday, February 24th and 7 hours on Tuesday, February, 26th.
- 89 individuals signing up to take an Operator Certification test.
- There were three detailed discussions regarding Financial Assistance applications for State or Federal funding.
- 11 CD's were handed out, outlining the loan process and technical assistance for engineers assisting communities.
- 34 discussions relative to water systems and issues on their inventory and monitoring schedules.
- 78 consultations on disinfection by-products.
- 25 separate consultations relative to monitoring waivers and entry point sampling issues.

- 11 consultations on source protection.
- 158 water systems picked up their monitoring schedule and IPS report
- 20 consultations on significant compliance issues.
- 3 compliance meetings.
- Staff assisted 117 water systems prepare their Consumer Confidence Reports

10 Next Board Meeting:

Date: May 9, 2014
 Time: 1:00 p.m.
 Location: Bear River Water Conservancy District Offices
 102 W Forest Street
 Brigham City, Utah 84302

11. Other

a. Axtell Community Special Service District

Michael Grange, Engineering Manager with DDW, notified the Board that Axtell Community Special Service District (Axtell) was authorized \$153,000 loan at 2.71% interest for 20 years with \$30,700 forgiveness on September 6, 2012 for the purpose of stabilizing their transmission line and to install fire hydrants. Axtell has now decided they are not able to assume this initial debt and do not wish to pursue the project further, as documented in the email from their engineer. Division staff recommends the Drinking Water Board de-authorize the \$153,000 construction loan for Axtell.

After some discussion with the Board, it was decided that Michael would follow up with Axtell to ensure that any compliance issues would be mitigated.

David Stevens recommended that staff de-authorize Axtell SSD's financing of \$153,000 construction loan at 2.71% interest for 20 years with \$30,700 in forgiveness. Betty Naylor, Paul Hansen and Brad Johnson concurred

b. Discussion on going to Jordan Valley in May or July.

Betty Naylor reminded Board and Staff that the Board previously recommended that Board meeting be held in different areas of the State. The purpose of this recommendation was to enable the Board to see where and how their funding was assisting communities. Ken Bousfield, Director of DDW, mentioned that the meeting date and location in the Boards packet materials was only a place holder and that Staff would arrange water system tours in connection with Board meetings scheduled during the late spring, summer and early fall.

12. Adjourn

- Betty Naylor recommended that the Drinking Water Board Meeting be adjourned. The remaining Board members agreed.

Meeting adjourned at 2:51 p.m.

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Brooke Baker, Office of Human Resources, at: (801) 536-4412, TDD (801) 536-4424, at least five working days prior to the scheduled meeting.

Agenda Item 4(B)



State of Utah

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Department of Environmental Quality

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Kenneth H. Bousfield, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING

April 16, 2014 - 1:00 p.m.
195 North 1950 West
Salt Lake City, Utah 84116
Teleconference: 1-877-820-7831
Pin#: 878776#

DRAFT MINUTES

1. Call to Order – Chairman Hansen

Paul Hansen called the meeting to Order at 1:05

2. Roll Call – Ken Bousfield

Board Members attending telephonically: Paul Hansen, Betty Naylor, Brett Chynoweth, Tage Flint, Brad Johnson.

Board Members excused: David Stevens and Mark Stevens.

Division Staff: Kenneth Bousfield, Nathan Hall, Heather Bobb, and Marianne Booth.

3. Introductions – Chairman Hansen

Paul Hansen noted that there were representatives from Price River Water Improvement District and from Creamer and Noble Engineering attending telephonically.

4. Financial Assistance Committee Report

1. SRF Applications STATE:

a. Price River Water Improvement District (PRWID) - Nathan Hall

Nathan Hall, Environmental Engineer with the Division of Drinking Water (DDW, the Division), reported that on July 12, 2013, the Drinking Water Board authorized PRWID a \$700,000 loan with a 2.42% interest rate for 20 years for a project that included upgrading the Spring Glen distribution system in order for PRWID to absorb that system into their own. At that time the estimated project costs were \$800,000, with Spring Glen putting \$100,000 toward the project. Currently the bids are higher than originally estimated. PRWID has gone back and reexamined the project to see if anything could be changed without significantly impacting the overall scope. They have removed

some items but still do not have enough funding to cover the project with a sufficient contingency. Therefore they are requesting an additional \$100,000, an additional 5 years, and the same interest rate. This would keep the average water bill to the end user approximately the same as it was in the original authorization. The Drinking Water Financial Assistance Committee (FAC) and Division staff recommends the Board approve an \$800,000 loan with a 2.42% interest rate for 25 years.

Paul Hansen informed the Board that while loans for non-disadvantaged communities normally are not done for more than 20 years, the FAC felt that in this situation, approving a 25 year loan would not set an adverse precedent or be detrimental to the State. He went on to state that the FAC also felt it was better to do one loan, rather than have separate loans with varying terms.

It was also noted that Spring Glen will still be contributing \$100,000 toward the project and that the current bid from Johansson Construction of Sanpete County is firm for 60 days from March 24, 2014.

PRWID commented that Nathan Hall, of the Division, worked very hard assisting them with this project, making sure all their i's were dotted and their t's were crossed, and it is greatly appreciated.

- Brett Chynoweth moved to approve the loan of \$800,000 with a 2.42% interest rate for 25 years. Tague Flint seconded. The motion was carried unanimously by the Board.

5. Next Board Meeting:

Date: May 9, 2014
Time: 1:30 p.m.
Location: Bear River Water Conservancy District
102 West Forest Drive
Brigham City, Utah 84302

6. Adjourn

- Betty Naylor recommended that the Drinking Water Board Meeting be adjourned. Brett Chynoweth seconded.

Meeting adjourned at 1:15 pm.

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Agenda Item 5(A)

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF March 31, 2014

SUMMARY		
	Total State Fund:	\$6,027,921
	Total State Hardship Fund:	\$787,723
	Subtotal:	\$6,815,644
LESS AUTHORIZED	Less:	
	Authorized Loans & Closed loans in construction:	\$5,668,355
	Authorized Hardship:	\$104,225
	Subtotal:	\$5,772,580
	Total available after Authorized deducted	\$1,043,064
PROPOSED	Proposed Loan Project(s):	\$121,000
	Proposed Hardship Project(s):	\$120,150
	Subtotal:	\$241,150
AS OF:		
March 31, 2014	TOTAL REMAINING STATE LOAN FUNDS:	\$238,566
	TOTAL REMAINING STATE HARDSHIP FUNDS:	\$563,348

(see Page 2 for details)

(see Page 2 for details)

Total Balance of ALL Funds: \$801,914

Projected Receipts Next Twelve Months: and Sales Tax Revenue	
Annual Maximum Sales Tax Projection	\$3,587,500
Less State Match for 2013 Federal Grant	\$0
Less State Match for 2014 Federal Grant	(\$1,845,800)
Less Appropriation to DDW	(\$800,000)
Less Administration Fees	(\$140,200)
SUBTOTAL Sales Tax Revenue including adjustments:	\$801,500
Payment:	
Interest on Investments (Both Loan and Hardship Accounts)	\$30,000
Principal payments	\$3,426,722
Interest payments	\$983,424
Total Projections:	\$5,241,646

Receive 80% in January

Total Estimated State SRF Funds Available through 4-01-2015	\$6,043,560
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DIVISION OF DRINKING WATER
FEDERAL SRF LOAN FUNDS
AS OF March 31, 2014

	Loan Funds 1st Round	Loan Payments			TOTAL
		2nd Round		Hardship Fund	
		Principal	Interest		
Federal Capitalization Grants and State 20% match thru 2013	\$167,510,621				
Earnings on Invested 1st Round Funds			1,153,335		
Repayments (including interest earnings on 2nd round receipts)		31,890,946	8,702,768	2,752,775	212,010,445
Less:					
Closed loans and grants	-168,532,909				-168,532,909
SUBTOTAL of Funds Available	-\$1,022,288	\$31,890,946	\$9,856,103	\$2,752,775	\$43,477,536
Loans & Grants authorized but not yet closed or fully disbursed	-16,723,000	-3,505,000	-150,000	-707,703	-21,085,703
SUBTOTAL of Funds Available less Authorized	-\$17,745,288	\$28,385,946	\$9,706,103	\$2,045,072	\$22,391,833
Future Estimates:					
Proposed Loans/Grants for current board package	-83,000			0	-83,000
SUBTOTAL of Funds Available less Proposed Loans & Grants	-\$17,828,288	\$28,385,946	\$9,706,103	\$2,045,072	\$22,308,833
PROJECTIONS THRU April-2015					
2015 Grant proceeds estimate (inc state match)	0				
2014 Grant \$9,000,000 less set-asides	6,779,460				
2014 State Match for Grant	1,845,800				
Projected repayments & revenue during the next twelve months		5,664,246	1,716,122	434,143	7,814,511
Projected annual investment earnings on invested cash balance		180,000	12,000	7,200	199,200
TOTAL	-\$9,203,028	\$34,230,192	\$11,434,225	\$2,486,415	\$38,947,804

**DIVISION OF DRINKING WATER
STATE LOAN FUNDS
PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF March 31, 2014**

Community	Loan #	Cost Estimate	Date Authorized	Date Closed/Anticipated	Authorized Funding		
					Loan	Grant	Total
							0
							0
Axtell Community SSD 2.71%, 20 yr	3S174	153,700	Sep-12	Sep-14	123,000	30,700	153,700
Snowville 0% int 30 yrs (payoff \$560K)	3S182	610,000	Feb-13	Jun-14	610,000		610,000
Price Rvr WCD-Spring Glen 2.42% int 20 yr	3S188	800,000	Jul-13	May-14	700,000		700,000
Woodland Hills Water 2.92% 20 yrs	3S193	970,000	Nov-13	May-14	920,000		920,000
							0
Subtotal Loans and Grants Authorized					2,353,000	30,700	2,383,700
PLANNING LOANS / GRANTS IN PROCESS							
Eureka PI Loan 0% 5 yrs	3S172P	40,000	Jul-12	Feb-13	15,355		15,355
Eureka PI Loan 0% 5 yrs (added)	3S172P	60,000	Feb-13	Apr-13	0		0
Henrieville Town 0% int 5 yrs	3S189P	36,000	Jun-13	Sep-13	36,000		36,000
Garden City grant	3S176P	40,000	Nov-12	Feb-13		33,525	33,525
Tabiona	3S192P	32,000	Sep-13	??	32,000		32,000
Coalville pl loan 5 yrs 0% int	3S186P	32,000	Jul-13	Sep-13	32,000		32,000
Hildale pl loan 0% int 5 yrs	3S194P	40,000	Jan-14	Mar-14		40,000	40,000
					115,355	73,525	188,880
CLOSED LOANS (partially disbursed)							
Payson, 3.46% int, 20 yrs	3S170	3,404,000	Nov-11	Apr-12	908,000		908,000
Woods Cross 0% int 20 yrs	3S195	3,275,000	Jul-13	Feb-13	2,292,000		2,292,000
							0
							0
Subtotal Planning Loans/Grants Auth					3,200,000	0	3,200,000
Total authorized or closed but not yet funded					\$5,668,355	\$104,225	\$5,772,580
PROPOSED PROJECTS for May 2014							
Trenton Town	3S196	241,150			121,000	120,150	241,150
		0			0	0	0
						0	0
							0
Total Proposed Projects					121,000	120,150	241,150

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF March 31, 2014

	5235	5240	
	Loan	Interest	
	Funds	(use for Grants)	Total
Cash:	\$6,027,921	\$787,723	\$6,815,644
Less:			
Loans & Grants authorized but not yet closed (schedule attached)	(2,468,355)	(104,225)	(2,572,580)
Loans & Grants closed but not fully disbursed (schedule attached)	(3,200,000)	0	(3,200,000)
Proposed loans & grants	(121,000)	(120,150)	(241,150)
Administrative quarterly charge for entire year	(140,200)		(140,200)
Appropriation to DDW	(800,000)		(800,000)
FY 2013 Federal SRF 20% match of \$8,421,000	0		0
FY 2014 Federal SRF 20% match of \$9,000,000	(1,845,800)		(1,845,800)
	(2,547,434)	563,348	(1,984,086)
Projected repayments during the next twelve months			
Thru 04-01-2015			
Principal	3,426,722		3,426,722
Interest		983,424	983,424
Projected annual investment earnings on invested cash balance		30,000	30,000
Sales Tax allocation thru Apr-01-2015	3,587,500		3,587,500
Total	\$4,466,788	\$1,576,772	\$6,043,560
* All interest is added to the Hardship Fee account.			

DIVISION OF DRINKING WATER
FEDERAL SRF
AS OF March 31, 2014

FIRST ROUND FUND		FEDERAL SECOND ROUND FUND		Hardship Fund
1997 thru 2013 SRF Grants		Principal Repayments	Earnings on Invested Cash Balance	Total: \$2,752,775
Net Federal SRF Grants:	\$137,816,121	Principal (P):	\$31,890,946	
Total State Matches:	\$29,694,500	Interest (I):	\$8,702,768	
Closed Loans:	-\$168,532,909	Total P & I:	\$40,593,713	
Total Grant Dollars:	-\$1,022,288			Total: \$1,153,335

SUMMARY	
Total Federal State Revolving Fund:	\$40,724,761
Total Federal Hardship Fund:	\$2,752,775
Subtotal:	\$43,477,536

LESS AUTHORIZED & PARTIALLY DISBURSED	Less:		(see Page 2 for details)
	Authorized & Partially Disbursed Closed Loans:	\$20,378,000	
	Authorized Federal Hardship:	\$707,703	
	Subtotal:	\$21,085,703	

PROPOSED	Proposed Federal Project(s):	\$83,000	(see Page 2 for details)
	Proposed Federal Hardship Project(s):	\$0	
	Subtotal:	\$83,000	

AS OF:	March 31, 2014	TOTAL REMAINING LOAN FUNDS:	\$20,263,761
		TOTAL REMAINING HARDSHIP FUNDS:	\$2,045,072

Total Balance of ALL Funds after deducting proposed actions: \$22,308,833

Projected Receipts thru April 1, 2015	
2014 Fed SRF Grant	\$6,779,460
2014 State Match	\$1,845,800
Interest on Investments	\$199,200
Principal Payments	\$5,664,246
Interest	\$1,716,122
Hardship & Technical Assistance fees	\$434,143
Total:	\$16,638,971

} Receive 60% in January

Total Estimated Federal SRF Funds Available through: 4/1/2015 **\$38,947,804**

**DIVISION OF DRINKING WATER
FEDERAL STATE REVIVING FUND**

**PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF March 31, 2014**

COMMUNITY	Project			Authorized Date	Closing Date Scheduled	Authorized From Loan Funds (1st or 2nd Round)			Hardship Fund
	Total Project	Terms	Loan #			Loan	Forgiveness	Total	
Duchesne County	22,000,000	0% int 30 yrs 700K pf	3F142	Mar-10	May-14	3,300,000	700,000	4,000,000	
Herriman	8,375,000	2.25% hgf, 20 yrs	3F194	Mar-12	Sep-15	4,682,000		4,682,000	
Wooden Shoe Water	201,000	1% int, 30 yr	3F197	Jul-12	May-14	201,000		201,000	
Gunnison	2,350,000	0% int, 30 yr	3F208	Feb-13	Jun-14	2,290,000	100,000	2,390,000	
Bear River WCD-Collinston	3,700,000	.6% int, 30 yrs	3F214	Jul-13	Jul-14	2,865,000	735,000	3,600,000	
Greendale Water Co	1,385,000	3.92 int/hgf, 20 yrs	3F213	Jul-13	Mar-15	1,145,000		1,145,000	
Sheep Creek Cove HOA	90,000	4.82% int, 20 yr	3F218	Jan-14		90,000		90,000	
Pleasant View City	2,327,000	3.75% int, 20 yrs	3F219	Jan-14		1,977,000		1,977,000	
Forest Glen A	1,418,000	0% int, 30 yrs	3F222	Feb-14	Jun-14	986,000	432,000	1,418,000	
								0	
TOTAL CONSTRUCTION AUTHORIZED:						\$ 17,536,000	\$ 1,967,000	\$ 19,503,000	\$ -
COMMITTED PLANNING ADVANCES / AGREEMENTS or PARTIALLY DISBURSED CLOSED 2ND ROUND AGREEMENTS:									
					Date Closed				
								0	0
Kane Co-Zion View	1,400,000	4.71% int, 30 yrs	3F185	Mar-12	Jul-12	725,000		725,000	0
Gunnison	150,000	PF advance for well drilling??	3F208	Feb-13	Apr-14		150,000	150,000	
Rural Water Assn of Utah 2013	124,758	5 yr contract for Development Specialist	Ongoing	Nov-12	Jan-13			0	523,503
Woodland Mutual Wtr Co.	37,000	Planning Loan 0% 5 yrs	3F206P	Nov-12	May-13			0	37,000
Trenton PI Grant	39,500	Planning Grant	3F211P	Apr-13	Jun-13			0	40,000
Boulder Farmstead	40,000	100% principal forgiveness	3F215P	Sep-13	Oct-13			0	18,000
Willow Creek Water Co	37,500	Planning Grant	3F221P	Jan-14	Mar-14			0	37,500
Rockville Pipeline Co	36,700	Planning Grant	3F220P	Feb-14	Mar-14			0	36,700
Lizard Bench Wtr Association	15,000	Planning Grant	3F223P	Feb-14	Mar-14			0	15,000
TOTAL PLANNING AUTHORIZED:						\$725,000	\$150,000	\$875,000	\$707,703
TOTAL CONSTRUCTION & PLANNING:								\$20,378,000	\$707,703
AVAILABLE PROJECT FUNDS:									\$20,346,761
AVAILABLE HARDSHIP FUNDS:									\$2,045,072
PROPOSED PROJECTS FOR FEBRUARY 2014:									
Big Plains - Cedar Point	83,000	100% PF	3F224P				83,000	83,000	
Boulder Farmstead	2,000,000	?	3F225					0	
TOTAL PROPOSED PROJECTS FOR THIS MEETING:						\$0	\$83,000	\$83,000	\$0
*RWAU hardship grant is being disbursed monthly									
TOTAL FUNDS AFTER PROPOSED PROJECTS ARE FUNDED:									\$20,263,761
TOTAL FUNDS AFTER PROPOSED HS PROJECTS ARE FUNDED:									\$2,045,072
NOTES OF LOAN CLOSINGS SINCE LAST BOARD MEETING:									
Total Recent Loan Closings						\$0	\$0	\$0	\$0

Agenda Item 5(B)

Project Priority List
Presented to the Drinking Water Board
May 9, 2014

**DRINKING WATER BOARD
PACKET FOR PROJECT PRIORITY LIST
INTRODUCTION TO THE FINANCIAL ASSISTANCE COMMITTEE**

There is one new project being added to the Project Priority List:

Boulder Farmstead Water Company is being added to the project priority list with 50 points. Their project consists of waterline replacement, repairing pressure reducing stations, new transmission lines, spring collection box repair and a chlorination facility.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board approve the updated Project Priority List.

March 26, 2014

Utah Federal SRF Program

Project Priority List

Authorized

Total Unmet Needs:

\$238,641,213

Total Needs, incl. Recent funding

\$258,254,213

\$208,785,090

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
N				50.0	Boulder Farmstead	Garfield	226	Waterline, spring upgrades and chlorination	\$2,000,000	\$2,000,000	
A				75.8	Wooden Shoe Water Co.	Summit	76	Well, well house, tank	\$202,424	\$202,424	\$201,000
A				47.4	Duchesne County	Duchesne	3,585	Supply line to 3 existing districts	\$22,000,000	\$4,000,000	\$4,000,000
A				37.2	Gunnison	Sanpete	3,285	New well, Tank, Chlorination bldg, waterlines	\$6,575,000	2,500,000	\$2,500,000
A				20.5	Forest Glen A	Salt Lake	58	Spring redevelopment, tank, waterline replacement	\$1,458,780	1,417,280	\$1,418,000
A				13.7	Greendale	Daggett	500	New Water treatment system, 50,000 gal tank	\$1,384,444	\$1,144,444	\$1,145,000
A				12.5	Bear River WCD- Collinston	Box Elder	50,104	1-MG tank, transmission line, pump station	\$3,400,000	\$3,300,000	\$3,600,000
A				8.9	Herriman	Salt Lake	24,000	New 3 MG tank and pump station	\$8,325,000	\$5,000,000	\$4,682,000
A				6.0	Sheep Creek HOA	Cache	75	New source and treatment	\$90,000	\$90,000	\$90,000
A				3.4	Pleasant View	Weber	6,500	New well and reservoir	\$2,326,263	\$2,126,263	\$1,977,000

N = New Application

A = Authorized

P = Potential Project- no application

E= Energy Efficiency

W= Water Efficiency

G= Green Infrastructure

I= Environmentally Innovative

GREEN PROJECTS

EMERGENCY FUNDING

N 100 Trenton Town Cache 466 Spring Re-development \$401,150.00 241150

POTENTIAL PROJECTS

P				125.2	Soldier Summit SSD-2nd home sub	Utah	33	waterline upgrade	\$530,303	\$530,303	
P				36.4	Santa Clara (on hold)	Washington	8,000	Waterline upgrades	\$6,419,202	\$6,354,202	
P				35.0	CUWCD-Utah Valley	Utah		Treatment plant upgrades	\$39,369,500	\$36,950,000	
P				24.4	Jordan Valley WCD	Salt Lake	82,500	Treatment	\$3,200,000		
P				20.0	Pinon Forest	Duchesne	n/a	New system- residents haul water	\$21,247,000		
P				17.9	Wendover	Tooele	1,600	Waterline upgrades	\$833,000		
P				17.5	Draper City	Salt Lake	15,000	Storage and distribution upgrades	\$35,789,000		
P				17.1	East Zion SSD	Kane	49	waterline	\$128,876	\$128,876	
P				16.4	Eastland SSD	San Juan	60	New well for back up purposes	\$500,000		

March 26, 2014

Utah Federal SRF Program

Project Priority List

Authorized

Total Unmet Needs:

\$238,641,213

Total Needs, incl. Recent funding

\$258,254,213

\$208,785,090

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
P				16.4	Neola	Duchesne	840	Waterline upgrades, storage, source improvements	\$3,607,592	\$3,607,592	
P				15.3	Newton Town	Cache	799	Spring rehabilitation, waterline upgrades	\$1,581,500		
P				15.3	South Rim Water	Tooele	264	Well equipment and house, new tank	\$600,000		
P				15.2	Midvalley Estates Water Company	Iron	700	Source, storage, distribution	\$500,000		
P				15.1	Syracuse	Davis	25,200	Waterline upgrades	\$1,589,756	\$1,589,756	
P				14.7	Central Waterworks Co.	Sevier	450	Storage and distribution upgrades	\$1,400,000		
P				14.0	Herriman	Salt Lake	18,431	Booster Pump, waterline	\$2,050,000		
P				13.7	Cornish Town	Cache	300	Connect to Lewiston, rehab well	\$1,226,263		
P				13.7	Morgan City	Morgan	3,250	Waterline upgrades	\$692,026		
P				13.5	Riverdale	Weber	8,200	New well and tank, waterline upgrades	\$2,050,000		
P				13.3	Richfield City	Sevier	7,111	System repairs	\$2,722,000		
P				13.0	Uintah City	Weber	1,300	Treatment	\$1,063,000		
P				12.8	Centerfield	Sanpete	1,200	New tank, upgrade waterlines	\$3,600,000		
P				12.6	Enterprise	Washington	1,500	New tank, upgrade waterlines	\$1,917,100		
P				12.6	Price River	Carbon	7,659	New tank, waterlines, treatment	\$2,750,000		
P				11.6	Manila Culinary Water Co.	Utah	2,450	Treatment and waterline upgrades	\$700,000		
P				11.6	Jordan Valley WCD	Salt Lake	82,500	Flouride facility, well equipping	\$3,694,000	\$2,000,000	
P				11.4	Pineview West Water Company	Weber	115	Telemetry system	\$25,000		
P				11.4	North Ogden City	Weber	15,000	Waterline upgrades	\$746,000	\$746,000	
P				11.3	Farmington	Davis	15,000	New well, new tank, waterline replacement	\$2,830,000		
P				10.7	Ogden City	Weber	77,000	Source rehabilitation, treatment plant upgrades	\$26,500,000		
P				10.7	High Valley Water Company	Summit	850	Waterline upgrades	\$1,000,000		
P				10.3	City of Monticello	San Juan	2,000	Storage and distribution upgrades	\$1,200,000		
P				9.8	Gorgoza	Summit	4,200	Waterline upgrades	\$1,000,000		
P				9.7	Moutain Regional SSD	Summit	6,700	Transmission line	\$600,000		
P				9.7	Benson Culinary Water District	Cache	743	New tank, waterline replacement	\$500,000		
P				9.3	Mapleton City	Utah	7,300	Replace distribution lines	\$15,339,560		
P				9.2	Greendale Water Co.	Daggett	500	Treatment system	\$800,000		
P				9.1	Center Creek	Wasatch	200	Pump house and pump	\$80,000		
P				8.4	Nibley City	Cache	4,300	New tank	\$1,270,355		
P				8.3	Hurricane	Washington	8,000	Waterline replacement and new tank	\$5,047,899		
P				7.6	Harmony Farms Water User Assoc.	Washington	300	Waterline Replacement	\$3,000		
P				6.8	Hooper Water Improvement District	Weber	16,520	Storage, waterlines, treatment	\$2,887,000		
P				6.7	Centerville City	Davis	16,000	Replacement well, waterline upgrades	\$2,965,000		

March 26, 2014

Utah Federal SRF Program

Project Priority List

Authorized

Total Unmet Needs:

\$238,641,213

Total Needs, incl. Recent funding

\$258,254,213

\$208,785,090

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
P				6.1	Marble Hill Water Company	Box Elder	250	New storage tank	\$225,000		
P				4.5	Peterson Pipeline Association	Morgan	450	Source, storage, distribution	\$1,700,000		
P				4.5	Perry City	Box Elder	4,603	Source, storage, distribution	\$4,782,220		
P				3.9	Wolf Creek Country Club	Weber	2,000	Waterline	\$180,000		
P				3.4	Highland City	Utah	15,066	New well houses	\$650,000		

Agenda Item 5(C)(i)(a)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN**

APPLICANT'S REQUEST:

On August 28, 2013, the Town of Leamington was authorized \$56,000 construction loan at 0% interest for 20 years to help repair flood damage to their transmission line and spring, which was the result of a wildfire

Recently the Town made application to and was authorized by the CIB board to repair and redevelop all of their springs. Total project cost was estimated to be over one million dollars.

RECOMMENDATION:

The Drinking Water Board de-authorize the \$56,000 construction loan to Leamington Town at 0% interest for 20 years.



Rich Peterson <richpeterson@utah.gov>

(no subject)

toddtoley@frontiernet.net <toddtoley@frontiernet.net>

Mon, Apr 7, 2014 at 3:41 PM

Reply-To: "toddtoley@frontiernet.net" <toddtoley@frontiernet.net>

To: "richpeterson@utah.gov" <richpeterson@utah.gov>

Rich, We thank you for the consideration of loaning The Town of Leamington the money we needed to make repairs on our Spring Collection System that was damaged by floods. The damage was more extent than we thought, we went to the C I B board for funding. Again We thank you for your time and efforts.

Todd Tolley

Leamington Town

Agenda Item 5(C)(i)(b)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN
PRESENTED TO THE DRINKING WATER BOARD**

APPLICANT'S REQUEST:

Trenton Town is requesting financial assistance in the amount of \$290,075 to redevelop the Thompson Spring which has been determined to be under the direct influence of surface water. The total project cost is estimated to be \$422,139. They have a Community Development Block Grant of \$132,064. We have determined this to be an emergency project.

STAFF COMMENTS:

The Thompson Spring has been determined to be under the direct influence of surface water. Investigations have discovered deep rooted vegetation have entered into the spring collection area which is a source of contamination and is restricting the available flow of the spring.

The local MAGI for the Trenton Town is \$31,259, which is 83% of the State MAGI. They currently have a water bill of approximately \$64 per month, which is 2.47% of local MAGI. A full loan at 3.76% interest for 30 years requires an increase in their water bill to approximately \$82 per connection, which is 3.14% of the local MAGI. Based on this information, the Town qualifies to be considered for additional subsidization. A loan of \$145,000 at 1.5% for 30 years, with a grant of \$145,075 (50%), will require an increase in their water bill to approximately \$80 per connection, which is 3.09% of the local MAGI.

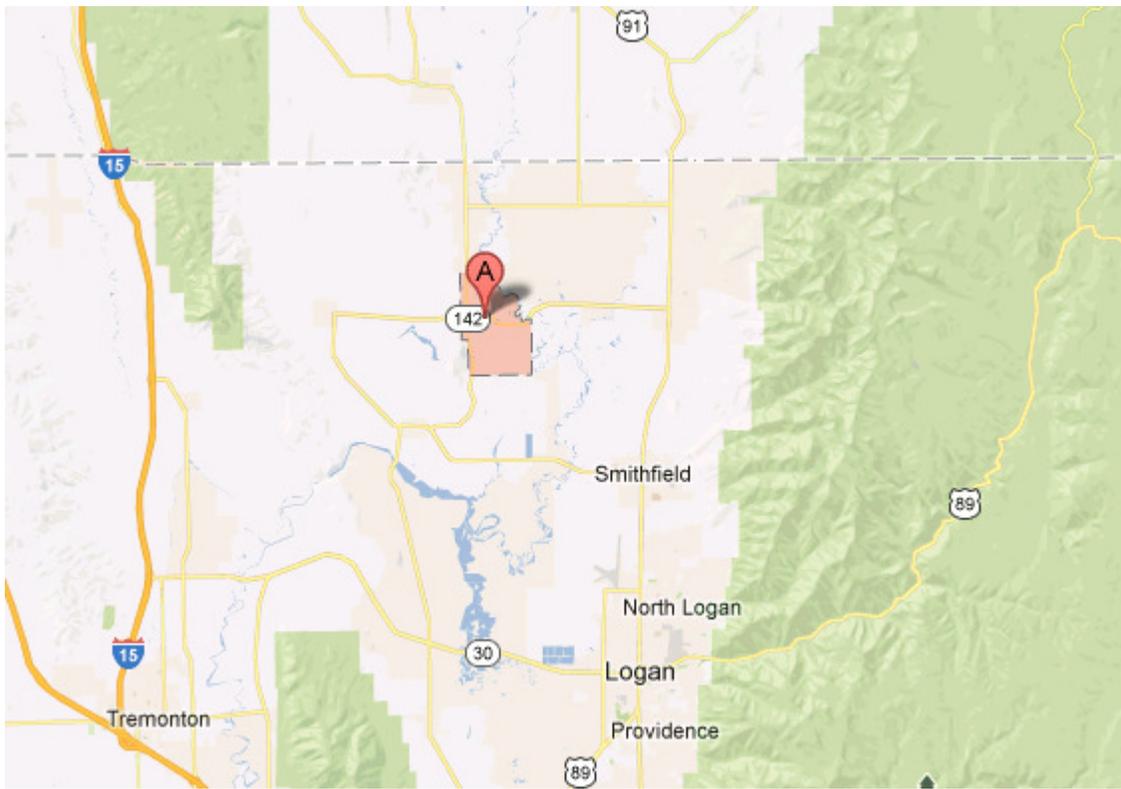
STAFF RECOMMENDATION:

The Drinking Water Board authorize a loan of \$145,000 at 1.50% interest for 30 years to the Town of Trenton with \$145,075 in grant.

APPLICANT'S LOCATION:

Trenton Town is located in Cache County.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

The Thompson Spring Redevelopment will include the following tasks:

- Prepare a Preliminary Engineering Report and complete a topographic survey of the spring area
- Evaluate and establish easements
- Design the project

The project will include installing a 40 mil, 450 Polyethylene liner and 900 CY of imported clay material. They will remove 400 feet of collection pipe from the spring, remove deep rooted vegetation and excavate the spring area. They will install 50 feet of 8-inch slotted PVC pipe, 400-feet of collection pipe from spring area to the collection box, and 6,400 feet of 8-inch PVC to replace the leaky pipe from the Thompson spring to Goody Spring and from Thompson spring to Sparks Spring. They will also import 1,000 CY of pipe bedding material and install 3 gate valves, 1 meter and telemetry, 1 concrete collection box and build a concrete cut off wall with footings.

POPULATION GROWTH:

According to the Utah State Governor’s Office of Planning and Budgeting, the anticipated growth rate for Trenton Town Water System is approximately 1.1% per year over the next 40 years

	<u>Year</u>	<u>Population</u>
Current:	2014	446
Projected:	2030	673

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	March 2014
SRF Committee Conference Call:	April 2014
DWB Funding Authorization:	May 2014
Advertise Environmental Assessment:	May 2014
Complete Design:	June 2014
Plan Approval:	July 2014
Advertise for Bids:	August 2014
Bid Opening:	August 2014
Loan Closing:	September 2014
Begin Construction:	September 2014
Complete Construction:	November 2014
Receive Operating Permit:	November 2014

COST ESTIMATE:

Legal and Bonding	\$10,000
Engineering- Design	\$30,000
Engineering- CMS	\$12,000
Engineering- Other	\$8,000
Environmental	\$15,000
Construction	\$301,860
Contingency	<u>\$45,279</u>
Total Project Cost	\$422,139

COST ALLOCATION:

The cost allocation proposed for the project is shown below.

<u>Funding Source</u>	<u>Cost Sharing</u>	<u>Percent of Project</u>
DWB Loan (1.5%, 30-yr)	\$145,000	34%
DWB Grant	\$145,075	34%
CDBG Grant	\$132,064	32%
Total Amount	\$422,139	100%

ESTIMATED ANNUAL COST OF WATER SERVICE:

Operation and Maintenance plus Depreciation: \$52,220

Existing DW Debt Service: \$93,013.75

DDW Debt Service (1.5%, 30-yrs): \$6,037.68

DDW Debt Reserve: \$603.77

Replacement Reserve Account: \$6,633.43

Annual Cost/ERC: \$966.52

Monthly Cost/ERC: \$80.54

Cost as % MAGI: 3.09%

APPLICANT: Trenton Town Water System
17 East Main
P.O. Box 77
Trenton, Utah 84338

PRESIDING OFFICIAL &
CONTACT PERSON: Marla Trowbridge
538 North Center
Trenton, UT 84338
435-563-5394
Marla.t@aggiemail.usu.edu

TREASURER/RECORDER: Macall Smith
Telephone: 435-563-9929

CONSULTING ENGINEER: Marcus Simons
JUB Engineers Inc.
1050 South 100 West Ste 180
Logan, UT 84321
Email: msimons@jub.com
435-713-9514

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Trenton Town
 COUNTY: Cache
 PROJECT DESCRIPTION: Spring Redevelopment

FUNDING SOURCE: State SRF

50 % Loan & 50 % Grant

ESTIMATED POPULATION:	466	NO. OF CONNECTIONS:	164 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$64.35 *			PROJECT TOTAL:	\$422,139
CURRENT % OF AGI:	2.47%	FINANCIAL PTS:	43	LOAN AMOUNT:	\$145,000
ESTIMATED MEDIAN AGI:	\$31,259			GRANT AMOUNT:	\$145,075
STATE AGI:	\$37,718			TOTAL REQUEST:	\$290,075
SYSTEM % OF STATE AGI:	83%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.35%		AFTER REPAYMENT PENALTY & POINTS 1.50%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.35%		1.50%
REQUIRED DEBT SERVICE:	\$4,833.33	\$9,812.09		\$6,037.68
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$483.33	\$981.21		\$603.77
ANNUAL NEW DEBT PER CONNECTION:	\$32.42	\$65.81		\$40.50
O & M + FUNDED DEPRECIATION:	\$52,220.00	\$52,220.00		\$52,220.00
OTHER DEBT + COVERAGE:	\$93,013.75	\$93,013.75		\$93,013.75
REPLACEMENT RESERVE ACCOUNT:	\$6,573.22	\$6,822.15		\$6,633.43
ANNUAL EXPENSES PER CONNECTION:	\$925.65	\$927.17		\$926.02
TOTAL SYSTEM EXPENSES	\$157,123.63	\$162,849.20		\$158,508.63
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$79.84	\$82.75		\$80.54
% OF ADJUSTED GROSS INCOME:	3.06%	3.18%		3.09%

* Equivalent Residential Connections

R309-700-5

Trenton Town
Cache
April 22, 2014

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	X
E. \$3,001 to \$5,000	4	
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	
	\$2,574	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	
C. 81 to 95% of State Median AGI	13	X
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	83%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	X
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	3.09%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	
C. Is creating or enhancing a regionalization plan	16	
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	43	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Trenton Town

PROPOSED BOND REPAYMENT SCHEDULE

50 % Loan & 50 % Grant

PRINCIPAL	\$145,000.00	ANTICIPATED CLOSING DATE	01-May-14
INTEREST	1.50%	P&I PAYMT DUE	01-Jan-15
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$6,037.68	PRINC PREPAID:	\$0.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2015	\$145,000.00		\$1,450.00 *	\$0.00	\$1,450.00	\$145,000.00	0
2016	\$145,000.00		\$6,175.00	\$4,000.00	\$2,175.00	\$141,000.00	1
2017	\$141,000.00		\$6,115.00	\$4,000.00	\$2,115.00	\$137,000.00	2
2018	\$137,000.00		\$6,055.00	\$4,000.00	\$2,055.00	\$133,000.00	3
2019	\$133,000.00		\$5,995.00	\$4,000.00	\$1,995.00	\$129,000.00	4
2020	\$129,000.00		\$5,935.00	\$4,000.00	\$1,935.00	\$125,000.00	5
2021	\$125,000.00		\$5,875.00	\$4,000.00	\$1,875.00	\$121,000.00	6
2022	\$121,000.00		\$5,815.00	\$4,000.00	\$1,815.00	\$117,000.00	7
2023	\$117,000.00		\$5,755.00	\$4,000.00	\$1,755.00	\$113,000.00	8
2024	\$113,000.00		\$5,695.00	\$4,000.00	\$1,695.00	\$109,000.00	9
2025	\$109,000.00		\$5,635.00	\$4,000.00	\$1,635.00	\$105,000.00	10
2026	\$105,000.00		\$6,575.00	\$5,000.00	\$1,575.00	\$100,000.00	11
2027	\$100,000.00		\$6,500.00	\$5,000.00	\$1,500.00	\$95,000.00	12
2028	\$95,000.00		\$6,425.00	\$5,000.00	\$1,425.00	\$90,000.00	13
2029	\$90,000.00		\$6,350.00	\$5,000.00	\$1,350.00	\$85,000.00	14
2030	\$85,000.00		\$6,275.00	\$5,000.00	\$1,275.00	\$80,000.00	15
2031	\$80,000.00		\$6,200.00	\$5,000.00	\$1,200.00	\$75,000.00	16
2032	\$75,000.00		\$6,125.00	\$5,000.00	\$1,125.00	\$70,000.00	17
2033	\$70,000.00		\$6,050.00	\$5,000.00	\$1,050.00	\$65,000.00	18
2034	\$65,000.00		\$5,975.00	\$5,000.00	\$975.00	\$60,000.00	19
2035	\$60,000.00		\$5,900.00	\$5,000.00	\$900.00	\$55,000.00	20
2036	\$55,000.00		\$5,825.00	\$5,000.00	\$825.00	\$50,000.00	21
2037	\$50,000.00		\$5,750.00	\$5,000.00	\$750.00	\$45,000.00	22
2038	\$45,000.00		\$5,675.00	\$5,000.00	\$675.00	\$40,000.00	23
2039	\$40,000.00		\$5,600.00	\$5,000.00	\$600.00	\$35,000.00	24
2040	\$35,000.00		\$6,525.00	\$6,000.00	\$525.00	\$29,000.00	25
2041	\$29,000.00		\$6,435.00	\$6,000.00	\$435.00	\$23,000.00	26
2042	\$23,000.00		\$6,345.00	\$6,000.00	\$345.00	\$17,000.00	27
2043	\$17,000.00		\$6,255.00	\$6,000.00	\$255.00	\$11,000.00	28
2044	\$11,000.00		\$5,165.00	\$5,000.00	\$165.00	\$6,000.00	29
2045	\$6,000.00		\$6,090.00	\$6,000.00	\$90.00	\$0.00	30
			\$182,540.00	\$145,000.00	\$37,540.00		

*Interest Only Payment

Utah Department of Environmental Quality Division of Drinking Water

Public Water System IPS Report

UTAH03021 TRENTON TOWN WATER SYSTEM

Run Date:
04/24/2014 01:11 pm

PWS ID: UTAH03021	Name: TRENTON TOWN WATER SYSTEM	
Legal Contact: TRENTON		Rating: Approved
	MARLA FAYE TROWBRIDGE	Rating Date: 03/12/1980
Address: P O BOX 77		Activity Status: A
	TRENTON, UT 84338	
Phone Number: 435-563-5427		
City Served (Area):		
County: CACHE COUNTY		
System Type: Community	Last Inv Update: 03/05/2014	
	Last Snty Srv Dt: 10/15/2011	
Population: 490	Surveyor: MICHAEL S MOSS	
	Oper Period: 1/1 to 12/31	

Consumptive Use Zone
Irrigation Zone Number: 4 02/15/2013

Total IPS Points: **17** **Rating Date:** 03/12/1980 **Rating:** **Approved**

Admin & Physical Facilities: 27
*** Quality & Monitoring Violations:** 0
Operator Certification: -10

* Total Admin & Physical Facilities demerit points may not agree with the detail section. The detail section shows all 'open' physical deficiencies; the Total Admin & Physical Facilities value adjusts for duplicate deficiencies

Physical Facility, Administrative, & Source Protection Deficiencies from Site Visits

Facility	Activity Status	Severity	Date Determined	Point Not Effective	Point Effective
Code Description					
M001 CURRENT EMERGENCY RESPONSE PROGRAM		REC	10/15/2011		-10
Code Description					
SS04 SPRING BOX DRAIN/OVERFLOW LACKS PROPER SCREEN		MIN	11/15/1999		5
			ALL SPRING COLLECTION BOXES ARE REQUIRED TO HAVE AN OVERFLOW LINE THAT IS SCREENED WITH A #4 MESH SCREEN		
Code Description					
SS07 DEEP ROOTED VEGETATION IN SPRING COLLECTION AREA		MIN	11/15/1999		10
			ALL HEAVY (SMALL BIRCH) AND DEP ROOTED VEGETATION MUST BE REMOVED FOR THE SPRING COLLECTION AREA		
Code Description					
SS08 ROOTS IN COLLECTION PIPES		I	6/24/2008	10	
			WS004 GOODY SPRING		

Utah Department of Environmental Quality

Division of Drinking Water

Public Water System IPS Report

UTAH03021 TRENTON TOWN WATER SYSTEM

Run Date:
04/24/2014 01:11 pm

Physical Facility, Administrative, & Source Protection Deficiencies from Site Visits

Facility	Activity Status	Severity	Date Determined	Point Not Effective	Point Effective
Code Description					
SS09 SPRING BOX LACKS SHOE BOX LID					
		MIN	10/27/2005		5
TRENTON SPRING ACCESS OPENINGS SHALL BE PROVIDED WITH A CLOSE FITTING SOLID SHOEBOX TYPE COVER AND IS FURNISHED WITH A GASKET BETWEEN THE LID AND FRAME.					
Code Description					
SS10 SPRING BOX LACKS A GASKET ON LID					
WS002 BIG BIRCH SPRING	A	MIN	10/15/2011		5
WS001 NORTH FORK SPRING	A	MIN	10/15/2011		5
Code Description					
SS12 SPRING BOX LACKS RAISED ACCESS ENTRY					
WS006 SPARKS SPRING	I	MIN	10/15/2011	5	
Code Description					
SS14 SPRING BOX DRAIN/OVERFLOW LACKS PROPER FREEFALL					
		MIN	11/15/1999		5
ALL SPRING COLLECTION BOXES ARE REQUIRED TO HAVE AN OVERFLOW LINE WITH A FREEFALL DISCHARGE 12 TO 24 INCHES ABOVE GRADE					
Code Description					
SS16 SPRING COLLECTION BOX VENT NOT DOWN-TURNED					
WS007 GARNER SPRING	A	MIN	6/24/2008		2
WS006 SPARKS SPRING	I	MIN	6/24/2008	2	
WS005 THOMPSON SPRING	I	MIN	6/24/2008	2	
WS001 NORTH FORK SPRING	A	MIN	6/24/2008		2
Code Description					
TD04 CL2 LACKS A 150 LB CHLORINE CYLINDER REPAIR KIT					
TP001 TRENTON TOWN CHLORINATOR	A	REC	6/24/2008		0
Code Description					
TD18 CL2 ROOM NOT SEALED FROM REST OF FACILITY					
TP001 TRENTON TOWN CHLORINATOR	A	MIN	10/15/2011		2

Utah Department of Environmental Quality Division of Drinking Water

Public Water System IPS Report

UTAH03021 TRENTON TOWN WATER SYSTEM

Run Date:
04/24/2014 01:11 pm

Physical Facility, Administrative, & Source Protection Deficiencies from Site Visits

Facility	Activity Status	Severity	Date Determined	Point Not Effective	Point Effective
Code	Description				
V008	STORAGE ACCESS NOT A MIN. OF 4 IN ABOVE SURFACE				
ST002 PATTON STORAGE	A	MIN	10/15/2011		3
	x SOIL HAS BEEN PLACED ON TOP OF THE TANK ROOF FOR INSULATION - IT WILL BE REMOVED ADJACENT TO THE ACCESS OPENING. NO PONDING				

Operator Certification Points

Total Admin & Physical Facility Deficiency	27
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	Distribution	Treatment
Level Required	SS	
Highest Certificate on Record	D1	
Points	-10	0

Total Points	-10
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Compliance Schedules

Type	Required Activities	Severity	Date Created	Due Date	Achieved Date
Complete Lead Copper Notice	Submit Lead/Copper Certification Notice to DDW		06/01/2011	12/29/2011	

Agenda Item 5(C)(ii)(a)

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN
INTRODUCTION TO THE FINANCIAL ASSISTANCE COMMITTEE

APPLICANT'S REQUEST:

The Big Plains Water and Sewer Special Service District (BPWSSSD) is requesting financial assistance in the amount of \$83,000 to conduct an aquifer investigation within the Cedar Point Water System, as only 2 of the 5 wells are in functioning condition, to identify a potential new source (well).

STAFF COMMENTS:

In the March 2012 Drinking Water Board Meeting, the Drinking Water Board (Board) authorized a \$3,175,000 construction loan to the BPWSSSD for the purchase and consolidation of the Apple Valley and Cedar Point water systems. At the time of purchase, both systems were out of compliance. Apple Valley had pressure issues, and Cedar Point had monitoring / reporting violations. It was BPWSSSD's understanding that the Cedar Point Water System was in good physical condition. However, after a year of owning and operating the systems, physical inadequacies in the Cedar Point water system have surfaced.

Of the five wells that were acquired from Cedar Point, only two are now in functioning condition due to mechanical failures as well as aquifer declines related to the prolonged drought in the area. With this being the case, aquifer investigation is needed to identify a new well that would provide sufficient water for both current and future needs.

Additionally, with the acquisition of the water systems, the Board required that the BPWSSSD correct the deficiencies with the respective water systems. BPWSSSD is in the process of obtaining funding from USDA-RD to construct new facilities within the Apple Valley water system to address the pressure needs. Unfortunately, due to new Census data now available, Apple Valley does not qualify for grant money from USDA-RD that they had anticipated qualifying for under the previous Census data USDA-RD uses to determine income levels for financial analysis. It is staff's understanding that while the funding will be less than anticipated, the pressure issues will be addressed and corrected with the upcoming construction project. However, Cedar Point's violations have not yet been corrected, as none of the required water samples were submitted in 2013, resulting in Cedar Point remaining as an unapproved water system. Samples for Apple Valley were also not submitted in 2013.

Based on the loan required for obtaining the water systems and the anticipated loan from USDA-RD, the estimated average water bill for the BPWSSSD is \$85.55 or 3.17% of the local MAGI, qualifying them for additional subsidization.

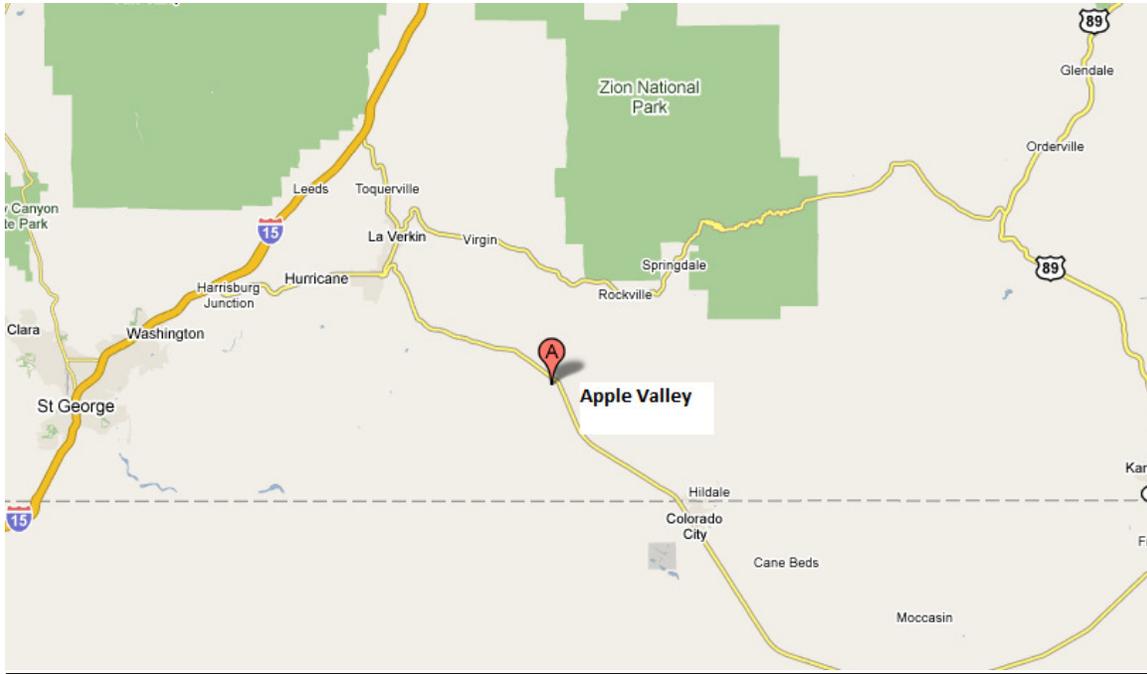
FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Financial Assistance Committee recommended that the application be forwarded to the Drinking Water Board without recommendation. The Committee felt that Big Plains Water and Sewer SSD should explain the situation in more detail to the Board before a decision is made on funding the request. A condition of the funding (if approved) would be that before any funds are to be released, BPWSSSD would be required to submit satisfactory results for all required samples that were not submitted in 2013 for both the Cedar Point and Apple Valley water systems.

APPLICANT'S LOCATION:

The Big Plains Water and Sewer SSD is located in Apple Valley.

MAP OF APPLICANT'S LOCATION:



POPULATION GROWTH:

According to the 2008 Governor's Office of Planning and Budget, Apple Valley is expected to grow at an average annual rate of change of 4.08% through 2030. However, due to recent trends staff used a growth rate of 1% in the evaluation, populations are shown in the table below:

Year	5.3% Average Growth	1% Growth
2010	826	826
2020	1371	912
2030	2036	1515
2040	2742	2249

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	March 2014
FA Committee Conference Call:	April 2014
DWB Funding Authorization:	May 2014
Complete Study:	September 2014

COST ESTIMATE:

Engineering – Environmental	\$5,000
Engineering – Study	\$78,000
Total Project Cost	\$83,000

ESTIMATED ANNUAL COST OF WATER SERVICE:

Operation and Maintenance plus Depreciation: \$115,530.00
Existing DW Debt Service: \$245,315.00
Replacement Reserve Account: \$15,589.10
Annual Cost/ERC: \$1,383.95
Monthly Cost/ERC: \$85.55
Cost as % MAGI: 3.17%

CONTACT INFORMATION:

APPLICANT: Big Plains Water and Sewer SSD
1777 North Meadowlark Dr.
Apple Valley, UT 84737
435-877-1190

PRESIDING OFFICIAL &
CONTACT PERSON: Harold Merritt, Chairman
1777 North Meadowlark Dr.
Apple Valley, UT 84737
435-877-1190

TREASURER / RECORDER: Nathan Bronemann
435-877-1190
nb@applevalleut.gov

CONSULTING ENGINEER: Kelly Crane
Ensign Engineering & Land Surveying
1870 N Main, Ste 102
Cedar City, UT 84721
435-590-0187

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Big Plains Water and Sewer SSD
 COUNTY: Washington County
 PROJECT DESCRIPTION: Planning Study

FUNDING SOURCE: Federal SRF

100 % Loan & 0 % P.F.

ESTIMATED POPULATION:	600	NO. OF CONNECTIONS:	272 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$53.71 *			PROJECT TOTAL:	\$83,000
CURRENT % OF AGI:	1.99%	FINANCIAL PTS:	67	LOAN AMOUNT:	\$83,000
ESTIMATED MEDIAN AGI:	\$32,389			PRINC. FORGIVENESS:	\$0
STATE AGI:	\$39,325			TOTAL REQUEST:	\$83,000
SYSTEM % OF STATE AGI:	82%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.30%	AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>			
ASSUMED LENGTH OF DEBT, YRS:	5	5	5
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.30%	0.00%
REQUIRED DEBT SERVICE:	\$16,600.00	\$19,330.17	\$16,600.00
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00	\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$1,660.00	\$1,933.02	\$1,660.00
ANNUAL NEW DEBT PER CONNECTION:	\$67.13	\$78.17	\$67.13
O & M + FUNDED DEPRECIATION:	\$115,530.00	\$115,530.00	\$115,530.00
OTHER DEBT + COVERAGE:	\$245,315.00	\$245,315.00	\$245,315.00
REPLACEMENT RESERVE ACCOUNT:	\$16,419.10	\$16,555.61	\$16,419.10
ANNUAL EXPENSES PER CONNECTION:	\$1,387.00	\$1,387.50	\$1,387.00
TOTAL SYSTEM EXPENSES	\$395,524.10	\$398,663.79	\$395,524.10
IMPACT FEES:	\$108,000.00	\$108,000.00	\$0.00
TAX REVENUE:	\$0.00	\$0.00	\$0.00
<u>RESIDENCE</u>			
MONTHLY NEEDED WATER BILL:	\$88.09	\$89.05	\$91.40
% OF ADJUSTED GROSS INCOME:	3.26%	3.30%	3.39%

* Equivalent Residential Connections

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Big Plains Water and Sewer SSD
 COUNTY: Washington County
 PROJECT DESCRIPTION: Planning Study

FUNDING SOURCE: Federal SRF

0 % Loan & 100 % P.F.

ESTIMATED POPULATION:	600	NO. OF CONNECTIONS:	272 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$53.71 *			PROJECT TOTAL:	\$83,000
CURRENT % OF AGI:	1.99%	FINANCIAL PTS:	67	LOAN AMOUNT:	\$0
ESTIMATED MEDIAN AGI:	\$32,389			PRINC. FORGIVENESS:	\$83,000
STATE AGI:	\$39,325			TOTAL REQUEST:	\$83,000
SYSTEM % OF STATE AGI:	82%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.30%	AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>			
ASSUMED LENGTH OF DEBT, YRS:	5	5	5
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.30%	0.00%
REQUIRED DEBT SERVICE:	\$0.00	\$0.00	\$0.00
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00	\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$0.00	\$0.00	\$0.00
ANNUAL NEW DEBT PER CONNECTION:	\$0.00	\$0.00	\$0.00
O & M + FUNDED DEPRECIATION:	\$115,530.00	\$115,530.00	\$115,530.00
OTHER DEBT + COVERAGE:	\$245,315.00	\$245,315.00	\$245,315.00
REPLACEMENT RESERVE ACCOUNT:	\$15,589.10	\$15,589.10	\$15,589.10
ANNUAL EXPENSES PER CONNECTION:	\$1,383.95	\$1,383.95	\$1,383.95
TOTAL SYSTEM EXPENSES	\$376,434.10	\$376,434.10	\$376,434.10
IMPACT FEES:	\$108,000.00	\$108,000.00	\$0.00
TAX REVENUE:	\$0.00	\$0.00	\$0.00
<u>RESIDENCE</u>			
MONTHLY NEEDED WATER BILL:	\$82.24	\$82.24	\$85.55
% OF ADJUSTED GROSS INCOME:	3.05%	3.05%	3.17%

* Equivalent Residential Connections

Big Plains Water and Sewer SSD

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	-
DWB Loan Amount:	\$	83,000
DWB Loan Term:		5
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	16,600

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	83,000
Existing Facility O&M Expense:	\$	115,530
Proposed Facility O&M Expense:	\$	115,530
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	196,252

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		272
Projected Growth Rate:		3.3%
Impact Fee/Connection Fee:	\$	12,000
Current Monthly User Charge:	\$	53.71
Needed Average Monthly User Charge:	\$	91.40

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	3.3%	9	272	175,296	108,000	-	283,296	-	-	83,000	-	-	196,252	115,530	311,782	-
1	3.3%	9	281	401,507	108,000	-	509,507	16,000	-	67,000	16,000	-	196,252	115,530	327,782	1.86
2	3.3%	9	290	411,378	108,000	-	519,378	16,000	-	51,000	16,000	-	196,252	116,685	328,937	1.90
3	3.3%	10	300	422,130	120,000	-	542,130	17,000	-	34,000	17,000	-	196,252	117,852	331,104	1.99
4	3.3%	10	310	433,098	120,000	-	553,098	17,000	-	17,000	17,000	-	196,252	119,031	332,283	2.04
5	3.3%	10	320	444,066	120,000	-	564,066	17,000	-	-	17,000	-	196,252	120,221	333,473	2.08
Total Paid in Debt Service =											83,000	-				

Utah Department of Environmental Quality

Division of Drinking Water

Public Water System IPS Report

UTAH27069 APPLE VALLEY BIG PLAINS

Run Date:
03/26/2014 02:42 pm

PWS ID: UTAH27069 **Name:** APPLE VALLEY BIG PLAINS

Legal Contact: BIG PLAINS WATER AND SEWER SSD **Rating:** Not Approved
DALE ERNEST HARRIS **Rating Date:** 05/03/2011

Address: 1477 MEADOWLARK DR **Activity Status:** A
APPLE VALLEY, UT 84737

Phone Number: 435-877-1190

City Served (Area):

County: WASHINGTON COUNTY

System Type: Community **Last Inv Update:** 06/27/2013
Last Snty Srv Dt: 10/03/2012

Population: 718 **Surveyor:** SHALLEN STERNER
Oper Period: 1/1 to 12/31

Consumptive Use Zone

Irrigation Zone Number: 5 02/15/2013

Total IPS Points: **454** **Rating Date:** 05/03/2011 **Rating:** **Not Approved**

Admin & Physical Facilities: 194
* **Quality & Monitoring Violations:** 270
Operator Certification: -10

* Total Admin & Physical Facilities demerit points may not agree with the detail section. The detail section shows all 'open' physical deficiencies; the Total Admin & Physical Facilities value adjusts for duplicate deficiencies

Physical Facility, Administrative, & Source Protection Deficiencies from Site Visits

Facility	Activity Status	Severity	Date Determined	Point Not Effective	Point Effective
Code	Description				
A150	Administrative issues - see notes for specific details				
		SIG			150
	<p>"R309-400-4(5): The Executive Secretary may at any time rate a water system not approved if an immediate threat to public health exists. This rating shall remain in place until such time as the threat is alleviated and the cause is corrected. (Emphasis added) The hydraulic model demonstrates that at fire flow conditions as low as 500 gpm, some homes within the Apple Valley Water Company service area will experience negative pressure in the water service pipeline. Negative pressure in the distribution system presents an immediate threat to public health through infiltration of contaminants into the culinary water system. The Apple Valley Water Company shall be rated 'Not Approved' until this deficiency is corrected and satisfactory documentation of the correction is provided to the Executive Secretary." MJG</p>				
Code	Description				
D003	SYSTEM FAILS TO PROVIDE 20 PSI TO ALL CONNECTIONS				
		A	SIG	7/14/2009	50
	DS001 UTAH27069 DISTRIBUTION SYSTEM				
Code	Description				
M001	CURRENT EMERGENCY RESPONSE PROGRAM				
		REC		7/14/2009	-10

Utah Department of Environmental Quality

Division of Drinking Water

Public Water System IPS Report

UTAH27069 APPLE VALLEY BIG PLAINS

Run Date:
03/26/2014 02:42 pm

Physical Facility, Administrative, & Source Protection Deficiencies from Site Visits

Facility	Activity Status	Severity	Date Determined	Point Not Effective	Point Effective
Code Description					
V004 STORAGE FACILITY INADEQUATE LADDERS OR RAILINGS					
ST001 STORAGE FACILITY ST001	A	MIN	7/14/2009		2
Code Description					
V005 STORAGE FACILITY VENT NOT TURNED DOWN					
ST002 STORAGE FACILITY ST002	A	MIN	7/14/2009		2
ST001 STORAGE FACILITY ST001	A	MIN	7/14/2009		2

Total Admin & Physical Facility Deficiency	194
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Microbial Rule Violations

Date Range Starts: 03/01/2013

Determin Date	Compliance Period	Code	Violation Type	IPS Points Assessed
09/11/2013	7/1/13 -7/31/13	22	MCL (TCR), MONTHLY	40
11/05/2013	8/1/13 -8/31/13	24	MONITORING (TCR), ROUTINE MINOR	10

Total Microbial Violation Pts:	50
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Chemical Monitoring and Quality Violations

Violation No.	Period	Code	Violation Type Analyte/ Group	Facility ID	Seasonality	IPS Points
2014-3749 9014302	01/01/11-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR Pesticides	WS003	P	20
2014-4091 9014399	01/01/11-12/31/13 01/23/2014	03	MONITORING, ROUTINE MAJOR RST	WS003	P	20
2014-3955 9014396	01/01/13-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Volatile Organics	WS003	P	20
2014-9014278 9014278	01/01/13-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR NITRATE	WS002	P	20
2014-3943 9014375	01/01/13-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Volatile Organics	WS002	P	20
2014-3844 9014339	01/01/11-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Inorganics & Metals Group	WS003	P	20
2014-4092 9014402	01/01/11-12/31/13 01/23/2014	03	MONITORING, ROUTINE MAJOR RST	WS002	P	20

Utah Department of Environmental Quality

Division of Drinking Water

Public Water System IPS Report

UTAH27069 APPLE VALLEY BIG PLAINS

Run Date:
03/26/2014 02:42 pm

Chemical Monitoring and Quality Violations

Violation No.	Period	Code	Violation Type Analyte/ Group	Facility ID	Seasonality	IPS Points
2014-9014327 9014327	01/01/13-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR NITRATE	WS003	P	20
2014-3902 9014354	01/01/11-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Radionuclides	WS002	P	20
2014-3845 9014351	01/01/11-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Inorganics & Metals Group	WS002	P	20
2014-3750 9014326	01/01/11-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR Pesticides	WS002	P	20

Total Chemical Violation Points	220
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Operator Certification Points

	<i>Distribution</i>	<i>Treatment</i>	
Level Required	D1		
Highest Certificate on Record	D2		
Points	-10	0	Total Points -10

Compliance Schedules

Type	Required Activities	Severity	Date Created	Due Date	Achieved Date
Fix Physical Deficiency	UNPROTECTED CROSS CONN PRESENT IN WELL HOUSE	SIG	12/31/2009	12/01/2009	03/02/2010
Fix Physical Deficiency	STORAGE FACILITY VENT NOT PROPERLY SCREENED	SIG	12/31/2009	12/01/2009	03/02/2010
Fix Physical Deficiency	SYSTEM FAILS TO PROVIDE 20 PSI TO ALL CONNECTIONS	SIG	12/31/2009	12/01/2009	
Fix Physical Deficiency	STORAGE FACILITY VENT NOT PROPERLY SCREENED	SIG	12/31/2009	12/01/2009	03/02/2010
Fix Physical Deficiency	ADMINISTRATIVE ISSUES - SEE NOTE FOR SPECIFIC DETAILS	SIG	04/14/2011	08/12/2011	

Utah Department of Environmental Quality

Division of Drinking Water

Public Water System IPS Report

UTAH27089 CEDAR POINT BIG PLAINS

Run Date:
03/26/2014 02:42 pm

PWS ID: UTAH27089 **Name:** CEDAR POINT BIG PLAINS

Legal Contact: BIG PLAINS WATER AND SEWER SSD **Rating:** Not Approved
DALE ERNEST HARRIS **Rating Date:** 04/20/2011

Address: 1477 MEADOWLARK DR **Activity Status:** A
APPLE VALLEY, UT 84737

Phone Number: 435-877-1190

City Served (Area):

County: WASHINGTON COUNTY

System Type: Community **Last Inv Update:** 06/27/2013
Last Snty Srv Dt: 10/19/2011

Population: 100 **Surveyor:** PAUL WRIGHT
Oper Period: 1/1 to 12/31

Consumptive Use Zone
Irrigation Zone Number: 5 02/15/2013

Total IPS Points: 110 Rating Date: 04/20/2011 Rating: Not Approved

Admin & Physical Facilities: 0
*** Quality & Monitoring Violations:** 120
Operator Certification: -10

* Total Admin & Physical Facilities demerit points may not agree with the detail section. The detail section shows all 'open' physical deficiencies; the Total Admin & Physical Facilities value adjusts for duplicate deficiencies

Chemical Monitoring and Quality Violations

Violation No.	Period	Code	Violation Type Analyte/ Group	Facility ID	Seasonality	IPS Points
2014-26248 26248	01/01/13-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR NITRATE	WS001	P	20
2014-26250 26250	10/01/13-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR Radionuclides	WS002	P	20
2014-26247 26247	07/01/13-09/30/13 11/05/2013	03	MONITORING, ROUTINE MAJOR Radionuclides	WS002	P	20
2014-26249 26249	01/01/13-12/31/13 01/21/2014	03	MONITORING, ROUTINE MAJOR NITRATE	WS002	P	20
2014-3952 26292	01/01/13-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Volatile Organics	WS001	P	20
2014-3951 26271	01/01/13-12/31/13 01/22/2014	03	MONITORING, ROUTINE MAJOR Volatile Organics	WS002	P	20

Total Chemical Violation Points 120

Utah Department of Environmental Quality
Division of Drinking Water
Public Water System IPS Report

UTAH27089 CEDAR POINT BIG PLAINS

Run Date:
03/26/2014 02:42 pm

Operator Certification Points

	<i>Distribution</i>	<i>Treatment</i>	
Level Required	SS		
Highest Certificate on Record	D2		
<i>Points</i>	-10	0	Total Points -10

Agenda Item 5(C)(ii)(b)

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

The Boulder Farmstead Water Company (BFWC) is requesting financial assistance in the amount \$2,000,000 to replace undersized waterlines, repair existing pressure reducing stations as well as construct four new stations, add new transmission lines, repair a spring collection box and construct a new chlorination facility for the Jepsen Spring.

STAFF COMMENTS:

This project is a result of a planning grant that was authorized by the Division of Drinking Water in September 2013. The project is needed to address pressure issues within the water system, as well as add chlorination and repair an existing spring. There is a small portion of the project that was needed during a previous construction project, but was not able to be addressed due to funding limitations. The previous project was co-funded between USDA-RD and the Drinking Water Board (Board), and the funding authorization was from the November 2009 Board Meeting.

As evidenced by the low MAGI below, Boulder is a hardship community and has been on previous projects. For the previous construction funding package, the Board authorized \$805,300 in principal forgiveness with no repayable loan and USDA-RD authorized \$830,700 in grant with only \$200,000 in loan. However, it is important to note that this funding was authorized during the ARRA, when there was no limit on the amount of principal forgiveness.

The local MAGI and water bill information for the town of Boulder is as follows:

- MAGI - \$19,779 (50% of State MAGI (\$39,325))
- Current water bill - \$31.79 (1.93% of local MAGI)

Any loan amount on the project would push the user's water bill even further above the 1.75% limit. The average monthly water bill post construction (using the base evaluation with 20% principal forgiveness) would be \$67.93 or 4.12% of the local MAGI.

Staff has looked at three options for the Drinking Water Board to consider in funding the project:

	Loan Amount (Interest %)	Principal Forgiveness	Average Monthly Water Bill	% of local MAGI
1	\$1,600,000 (2.27%)	\$400,000	\$67.93	4.12%
3	\$1,500,000 (0%)	\$500,000	\$55.18	3.35%
4	\$1,000,000 (0%)	\$1,000,000	\$46.37	2.81%

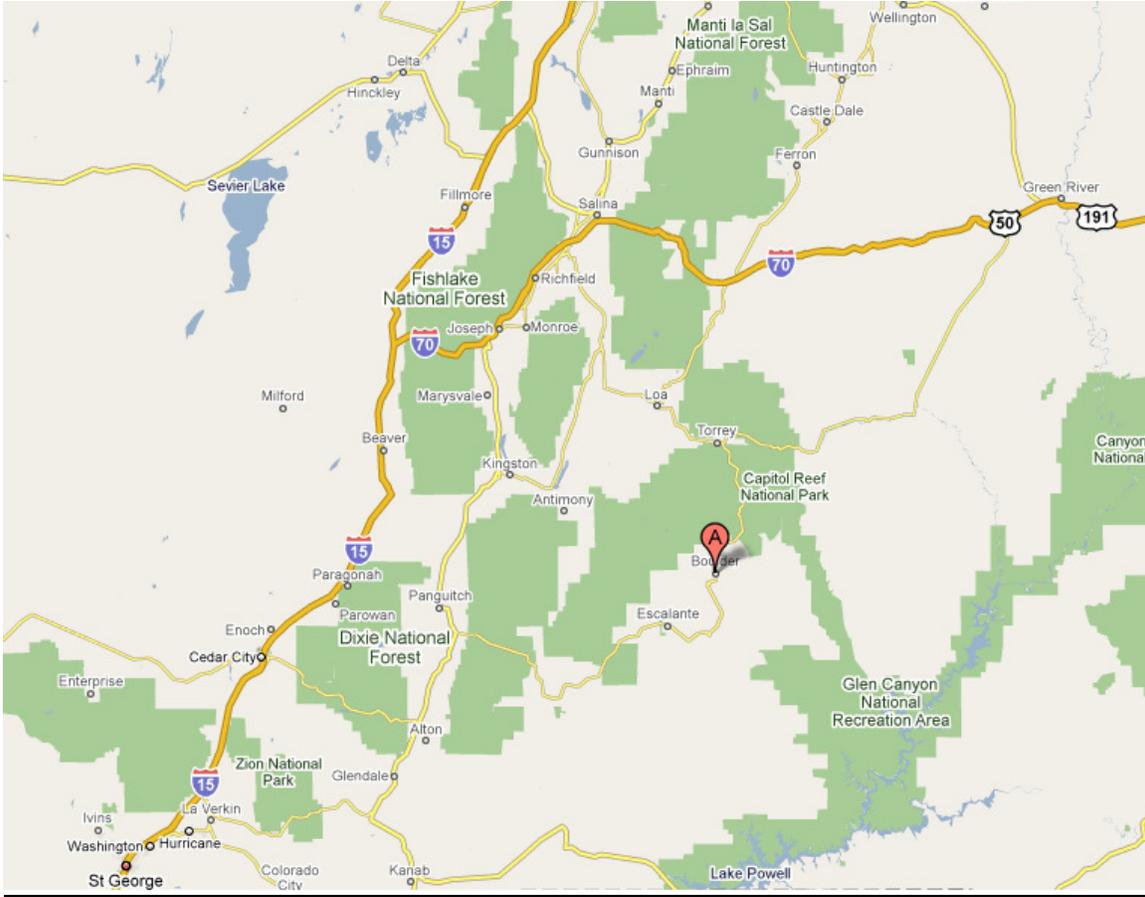
FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Financial Assistance Committee recommends that the Drinking Water Board authorize a construction loan of \$1,000,000 at 0% interest for 30 years with an additional \$1,000,000 in principal forgiveness to the Boulder Farmstead Water Company.

APPLICANT'S LOCATION:

The town of Boulder is located in Garfield County, east of Cedar City.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

The new project includes:

- Extend the existing 10-inch pipeline on SR-12 southward to the Burr Trail Road. Connect this pipeline to the existing distribution piping east of the roadway at 300 North Street by boring and jacking under the existing pavement.
- Replace approximately 2,500 feet of the existing 4-inch diameter pipeline extending along SR-12 westward from Burr Trail Road. From this point install approximately 800 feet of 8-inch diameter pipeline extending southwesterly to connect to the existing 8-inch diameter pipeline.
- Rebuild two existing pressure reducing valve stations and construct four new pressure reducing valve stations.
- Construct an 10-inch diameter pipeline extending southward approximately 7,900 feet from Burr Trail Road then eastward approximately 2,900 feet to connect with the existing waterline on Lower Boulder Road with one intermediate 8-inch diameter east-west waterline.
- Replace the existing 4-inch diameter pipe on Burr Trail Road with 8-inch diameter PVC.
- Repair the Jepsen Spring collection system.
- Construct a new chlorinator facility at Jepsen Spring.

Construction items from the previous project include:

- Construct a new 8-inch waterline in Service Area 2 extending 4,000 feet along SR-12 southward from the existing pipeline at Jepsen Spring to connect with the existing 6-inch diameter line with a flow limiter to maintain pressures in the new line.

POPULATION GROWTH:

According to the Governor's Office of Planning and Budget, Boulder is expected to grow at an average annual rate of change of 1.5% through 2030.

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	March 2014
FA Committee Conference Call:	April 2014
DWB Funding Authorization:	May 2014
Complete Design:	June 2014
Plan Approval:	July 2014
Advertise for Bids:	February 2015
Begin Construction:	February 2015
Complete Construction:	June 2015
Receive Operating Permit:	July 2015

COST ESTIMATE:

Legal – Bonding	\$20,000
Legal – Environmental	\$45,000
Engineering- Design	\$119,000
Engineering- CMS	\$119,000
Construction	\$1,587,000
Contingency	\$170,000
Total Project Cost	\$2,000,000

CONTACT INFORMATION:

APPLICANT: Boulder Farmstead Water Company
P.O. Box 1340
Boulder, UT 84716
435-335-7358

PRESIDING OFFICIAL &
CONTACT PERSON: Connie Reed, President
P.O. Box 1340
Boulder, UT 84716
435-335-7358

CONSULTING ENGINEER: Ryan Jolley
Jones & DeMille Engineering, Inc.
1535 South 100 West
Richfield, UT 84701
435-896-8266

BOND ATTORNEY: Richard Chamberlain
Chamberlain & Associates
Richfield, UT 84701
435-896-4461

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Boulder Farmstead
 COUNTY: Garfield
 PROJECT DESCRIPTION: Transmission Line, Spring Repair and Chlorinator

FUNDING SOURCE: Federal SRF

75 % Loan & 25 % P.F.

ESTIMATED POPULATION:	226	NO. OF CONNECTIONS:	197 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$31.79 *			PROJECT TOTAL:	\$2,000,000
CURRENT % OF AGI:	1.93%	FINANCIAL PTS:	67	LOAN AMOUNT:	\$1,500,000
ESTIMATED MEDIAN AGI:	\$19,779			PRINC. FORGIVENESS:	\$500,000
STATE AGI:	\$39,325			TOTAL REQUEST:	\$2,000,000
SYSTEM % OF STATE AGI:	50%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.35%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.35%		0.00%
REQUIRED DEBT SERVICE:	\$50,000.00	\$101,504.39		\$50,000.00
*PARTIAL COVERAGE (15%):	\$7,500.00	\$15,225.66		\$7,500.00
*ADD. COVERAGE AND RESERVE (10%):	\$5,000.00	\$10,150.44		\$5,000.00
ANNUAL NEW DEBT PER CONNECTION:	\$317.26	\$644.06		\$317.26
O & M + FUNDED DEPRECIATION:	\$43,867.00	\$43,867.00		\$43,867.00
OTHER DEBT + COVERAGE:	\$24,075.00	\$24,075.00		\$24,075.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$344.88	\$344.88		\$344.88
TOTAL SYSTEM EXPENSES	\$130,442.00	\$194,822.49		\$130,442.00
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$55.18	\$82.41		\$55.18
% OF ADJUSTED GROSS INCOME:	3.35%	5.00%		3.35%

* Equivalent Residential Connections

Boulder Farmstead

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	500,000
DWB Loan Amount:	\$	1,500,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	50,000

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	2,020,000
Existing Facility O&M Expense:	\$	43,867
Proposed Facility O&M Expense:	\$	43,867
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	19,260

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		197
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	5,000
Current Monthly User Charge:	\$	31.79
Needed Average Monthly User Charge:	\$	55.18

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	2	197	75,155	10,000	-	85,155	-	-	1,500,000	-	-	19,260	43,867	63,127	-
1	1.0%	2	199	131,766	10,000	-	141,766	50,000	5,000	1,450,000	50,000	-	19,260	43,867	118,127	1.41
2	1.0%	2	201	133,091	10,000	-	143,091	50,000	5,000	1,400,000	50,000	-	19,260	44,306	118,566	1.43
3	1.0%	2	203	134,415	10,000	-	144,415	50,000	5,000	1,350,000	50,000	-	19,260	44,749	119,009	1.44
4	1.0%	2	205	135,739	10,000	-	145,739	50,000	5,000	1,300,000	50,000	-	19,260	45,196	119,456	1.45
5	1.0%	2	207	137,063	10,000	-	147,063	50,000	5,000	1,250,000	50,000	-	19,260	45,648	119,908	1.46
6	1.0%	2	209	138,388	10,000	-	148,388	50,000	5,000	1,200,000	50,000	-	19,260	46,105	120,365	1.48
7	1.0%	2	211	139,712	10,000	-	149,712	50,000	5,000	1,150,000	50,000	-	19,260	46,566	120,826	1.49
8	1.0%	2	213	141,036	10,000	-	151,036	50,000	5,000	1,100,000	50,000	-	19,260	47,031	121,291	1.50
9	1.0%	2	215	142,361	10,000	-	152,361	50,000	5,000	1,050,000	50,000	-	19,260	47,502	121,762	1.51
10	1.0%	3	218	144,347	15,000	-	159,347	50,000	5,000	1,000,000	50,000	-	19,260	47,977	122,237	1.61
11	1.0%	2	220	145,671	10,000	-	155,671	50,000		950,000	50,000	-	19,260	48,456	117,716	1.55
12	1.0%	2	222	146,996	10,000	-	156,996	50,000		900,000	50,000	-	19,260	48,941	118,201	1.56
13	1.0%	2	224	148,320	10,000	-	158,320	50,000		850,000	50,000	-	19,260	49,430	118,690	1.57
14	1.0%	2	226	149,644	10,000	-	159,644	50,000		800,000	50,000	-	19,260	49,925	119,185	1.58
15	1.0%	3	229	151,631	15,000	-	166,631	50,000		750,000	50,000	-	19,260	50,424	119,684	1.68
16	1.0%	2	231	152,955	10,000	-	162,955	50,000		700,000	50,000	-	19,260	50,928	120,188	1.62
17	1.0%	2	233	154,279	10,000	-	164,279	50,000		650,000	50,000	-	19,260	51,438	120,698	1.63
18	1.0%	3	236	156,266	15,000	-	171,266	50,000		600,000	50,000	-	19,260	51,952	121,212	1.72
19	1.0%	2	238	157,590	10,000	-	167,590	50,000		550,000	50,000	-	19,260	52,471	121,731	1.66
20	1.0%	2	240	158,914	10,000	-	168,914	50,000		500,000	50,000	-	19,260	52,996	122,256	1.67
21	1.0%	3	243	160,901	15,000	-	175,901	50,000		450,000	50,000	-	19,260	53,526	122,786	1.77
22	1.0%	2	245	162,225	10,000	-	172,225	50,000		400,000	50,000	-	19,260	54,061	123,321	1.71
23	1.0%	3	248	164,211	15,000	-	179,211	50,000		350,000	50,000	-	19,260	54,602	123,862	1.80
24	1.0%	2	250	165,536	10,000	-	175,536	50,000		300,000	50,000	-	19,260	55,148	124,408	1.74
25	1.0%	3	253	167,522	15,000	-	182,522	50,000		250,000	50,000	-	19,260	55,699	124,959	1.83
26	1.0%	2	255	168,846	10,000	-	178,846	50,000		200,000	50,000	-	19,260	56,256	125,516	1.77
27	1.0%	3	258	170,833	15,000	-	185,833	50,000		150,000	50,000	-	19,260	56,819	126,079	1.86
28	1.0%	2	260	172,157	10,000	-	182,157	50,000		100,000	50,000	-	19,260	57,387	126,647	1.80
29	1.0%	3	263	174,143	15,000	-	189,143	50,000		50,000	50,000	-	19,260	57,961	127,221	1.89
30	1.0%	3	266	176,130	15,000	-	191,130	50,000		-	50,000	-	19,260	58,541	127,801	1.91

Total Paid in Debt Service = 1,500,000

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Boulder Farmstead
 COUNTY: Garfield
 PROJECT DESCRIPTION: Transmission Line, Spring Repair and Chlorinator

FUNDING SOURCE: Federal SRF

50 % Loan & 50 % P.F.

ESTIMATED POPULATION:	226	NO. OF CONNECTIONS:	197 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$31.79 *			PROJECT TOTAL:	\$2,000,000
CURRENT % OF AGI:	1.93%	FINANCIAL PTS:	67	LOAN AMOUNT:	\$1,000,000
ESTIMATED MEDIAN AGI:	\$19,779			PRINC. FORGIVENESS:	\$1,000,000
STATE AGI:	\$39,325			TOTAL REQUEST:	\$2,000,000
SYSTEM % OF STATE AGI:	50%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.35%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.35%		0.00%
REQUIRED DEBT SERVICE:	\$33,333.33	\$67,669.59		\$33,333.33
*PARTIAL COVERAGE (15%):	\$5,000.00	\$10,150.44		\$5,000.00
*ADD. COVERAGE AND RESERVE (10%):	\$3,333.33	\$6,766.96		\$3,333.33
ANNUAL NEW DEBT PER CONNECTION:	\$211.51	\$429.38		\$211.51
O & M + FUNDED DEPRECIATION:	\$43,867.00	\$43,867.00		\$43,867.00
OTHER DEBT + COVERAGE:	\$24,075.00	\$24,075.00		\$24,075.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$344.88	\$344.88		\$344.88
TOTAL SYSTEM EXPENSES	\$109,608.67	\$152,528.99		\$109,608.67
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$46.37	\$64.52		\$46.37
% OF ADJUSTED GROSS INCOME:	2.81%	3.91%		2.81%

* Equivalent Residential Connections

Boulder Farmstead

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	1,000,000
DWB Loan Amount:	\$	1,000,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	33,333

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	2,020,000
Existing Facility O&M Expense:	\$	43,867
Proposed Facility O&M Expense:	\$	43,867
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	19,260

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		197
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	5,000
Current Monthly User Charge:	\$	31.79
Needed Average Monthly User Charge:	\$	46.37

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	2	197	75,155	10,000	-	85,155	-	-	1,000,000	-	-	19,260	43,867	63,127	-
1	1.0%	2	199	110,721	10,000	-	120,721	33,000	3,333	967,000	33,000	-	19,260	43,867	99,460	1.47
2	1.0%	2	201	111,834	10,000	-	121,834	33,000	3,333	934,000	33,000	-	19,260	44,306	99,899	1.48
3	1.0%	2	203	112,947	10,000	-	122,947	33,000	3,333	901,000	33,000	-	19,260	44,749	100,342	1.50
4	1.0%	2	205	114,060	10,000	-	124,060	33,000	3,333	868,000	33,000	-	19,260	45,196	100,790	1.51
5	1.0%	2	207	115,173	10,000	-	125,173	33,000	3,333	835,000	33,000	-	19,260	45,648	101,242	1.52
6	1.0%	2	209	116,285	10,000	-	126,285	33,000	3,333	802,000	33,000	-	19,260	46,105	101,698	1.53
7	1.0%	2	211	117,398	10,000	-	127,398	33,000	3,333	769,000	33,000	-	19,260	46,566	102,159	1.55
8	1.0%	2	213	118,511	10,000	-	128,511	33,000	3,333	736,000	33,000	-	19,260	47,031	102,625	1.56
9	1.0%	2	215	119,624	10,000	-	129,624	33,000	3,333	703,000	33,000	-	19,260	47,502	103,095	1.57
10	1.0%	3	218	121,293	15,000	-	136,293	33,000	3,333	670,000	33,000	-	19,260	47,977	103,570	1.69
11	1.0%	2	220	122,406	10,000	-	132,406	34,000	-	636,000	34,000	-	19,260	48,456	101,716	1.58
12	1.0%	2	222	123,518	10,000	-	133,518	33,000	-	603,000	33,000	-	19,260	48,941	101,201	1.62
13	1.0%	2	224	124,631	10,000	-	134,631	34,000	-	569,000	34,000	-	19,260	49,430	102,690	1.60
14	1.0%	2	226	125,744	10,000	-	135,744	33,000	-	536,000	33,000	-	19,260	49,925	102,185	1.64
15	1.0%	3	229	127,413	15,000	-	142,413	34,000	-	502,000	34,000	-	19,260	50,424	103,684	1.73
16	1.0%	2	231	128,526	10,000	-	138,526	33,000	-	469,000	33,000	-	19,260	50,928	103,188	1.68
17	1.0%	2	233	129,639	10,000	-	139,639	34,000	-	435,000	34,000	-	19,260	51,438	104,698	1.66
18	1.0%	3	236	131,308	15,000	-	146,308	33,000	-	402,000	33,000	-	19,260	51,952	104,212	1.81
19	1.0%	2	238	132,421	10,000	-	142,421	34,000	-	368,000	34,000	-	19,260	52,471	105,731	1.69
20	1.0%	2	240	133,533	10,000	-	143,533	33,000	-	335,000	33,000	-	19,260	52,996	105,256	1.73
21	1.0%	3	243	135,203	15,000	-	150,203	34,000	-	301,000	34,000	-	19,260	53,526	106,786	1.82
22	1.0%	2	245	136,315	10,000	-	146,315	33,000	-	268,000	33,000	-	19,260	54,061	106,321	1.77
23	1.0%	3	248	137,985	15,000	-	152,985	34,000	-	234,000	34,000	-	19,260	54,602	107,862	1.85
24	1.0%	2	250	139,097	10,000	-	149,097	33,000	-	201,000	33,000	-	19,260	55,148	107,408	1.80
25	1.0%	3	253	140,766	15,000	-	155,766	34,000	-	167,000	34,000	-	19,260	55,699	108,959	1.88
26	1.0%	2	255	141,879	10,000	-	151,879	33,000	-	134,000	33,000	-	19,260	56,256	108,516	1.83
27	1.0%	3	258	143,548	15,000	-	158,548	34,000	-	100,000	34,000	-	19,260	56,819	110,079	1.91
28	1.0%	2	260	144,661	10,000	-	154,661	33,000	-	67,000	33,000	-	19,260	57,387	109,647	1.86
29	1.0%	3	263	146,330	15,000	-	161,330	34,000	-	33,000	34,000	-	19,260	57,961	111,221	1.94
30	1.0%	3	266	148,000	15,000	-	163,000	33,000	-	-	33,000	-	19,260	58,541	110,801	2.00

Total Paid in Debt Service = 1,000,000

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Boulder Farmstead
 COUNTY: Garfield
 PROJECT DESCRIPTION: Transmission Line, Spring Repair and Chlorinator

FUNDING SOURCE: Federal SRF

80 % Loan & 20 % P.F.

ESTIMATED POPULATION:	226	NO. OF CONNECTIONS:	197 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$31.79 *			PROJECT TOTAL:	\$2,000,000
CURRENT % OF AGI:	1.93%	FINANCIAL PTS:	67	LOAN AMOUNT:	\$1,600,000
ESTIMATED MEDIAN AGI:	\$19,779			PRINC. FORGIVENESS:	\$400,000
STATE AGI:	\$39,325			TOTAL REQUEST:	\$2,000,000
SYSTEM % OF STATE AGI:	50%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 5.35%		AFTER REPAYMENT PENALTY & POINTS 2.27%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	5.35%		2.27%
REQUIRED DEBT SERVICE:	\$53,333.33	\$108,271.35		\$74,119.28
*PARTIAL COVERAGE (15%):	\$8,000.00	\$16,240.70		\$11,117.89
*ADD. COVERAGE AND RESERVE (10%):	\$5,333.33	\$10,827.13		\$7,411.93
ANNUAL NEW DEBT PER CONNECTION:	\$338.41	\$687.00		\$470.30
O & M + FUNDED DEPRECIATION:	\$43,867.00	\$43,867.00		\$43,867.00
OTHER DEBT + COVERAGE:	\$24,075.00	\$24,075.00		\$24,075.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$344.88	\$344.88		\$344.88
TOTAL SYSTEM EXPENSES	\$134,608.67	\$203,281.19		\$160,591.10
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$56.94	\$85.99		\$67.93
% OF ADJUSTED GROSS INCOME:	3.45%	5.22%		4.12%

* Equivalent Residential Connections

R309-700-5

Boulder Farmstead
Garfield
March 26, 2014

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	X
	\$10,152	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	X
B. 71 to 80% of State Median AGI	16	
C. 81 to 95% of State Median AGI	13	
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	50%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	X
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	4.12%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	X
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	X
C. Is creating or enhancing a regionalization plan	16	X
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	67	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Boulder Farmstead

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	400,000
DWB Loan Amount:	\$	1,600,000
DWB Loan Term:		30
DWB Loan Interest:		2.27%
DWB Loan Payment:	\$	74,119

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	2,020,000
Existing Facility O&M Expense:	\$	43,867
Proposed Facility O&M Expense:	\$	43,867
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	19,260

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		197
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	5,000
Current Monthly User Charge:	\$	31.79
Needed Average Monthly User Charge:	\$	67.93

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	2	197	75,155	10,000	-	85,155	-	-	1,600,000	-	-	19,260	43,867	63,127	-
1	1.0%	2	199	162,221	10,000	-	172,221	74,320	7,412	1,562,000	38,000	36,320	19,260	43,867	144,859	1.37
2	1.0%	2	201	163,852	10,000	-	173,852	74,457	7,412	1,523,000	39,000	35,457	19,260	44,306	145,435	1.38
3	1.0%	2	203	165,482	10,000	-	175,482	74,572	7,412	1,483,000	40,000	34,572	19,260	44,749	145,993	1.39
4	1.0%	2	205	167,113	10,000	-	177,113	73,664	7,412	1,443,000	40,000	33,664	19,260	45,196	145,532	1.42
5	1.0%	2	207	168,743	10,000	-	178,743	73,756	7,412	1,402,000	41,000	32,756	19,260	45,648	146,076	1.43
6	1.0%	2	209	170,373	10,000	-	180,373	73,825	7,412	1,360,000	42,000	31,825	19,260	46,105	146,602	1.44
7	1.0%	2	211	172,004	10,000	-	182,004	73,872	7,412	1,317,000	43,000	30,872	19,260	46,566	147,110	1.45
8	1.0%	2	213	173,634	10,000	-	183,634	73,896	7,412	1,273,000	44,000	29,896	19,260	47,031	147,599	1.47
9	1.0%	2	215	175,264	10,000	-	185,264	73,897	7,412	1,228,000	45,000	28,897	19,260	47,502	148,071	1.48
10	1.0%	3	218	177,710	15,000	-	192,710	73,876	7,412	1,182,000	46,000	27,876	19,260	47,977	148,524	1.55
11	1.0%	2	220	179,340	10,000	-	189,340	73,831		1,135,000	47,000	26,831	19,260	48,456	141,548	1.51
12	1.0%	2	222	180,971	10,000	-	190,971	73,765		1,087,000	48,000	25,765	19,260	48,941	141,966	1.53
13	1.0%	2	224	182,601	10,000	-	192,601	74,675		1,037,000	50,000	24,675	19,260	49,430	143,365	1.52
14	1.0%	2	226	184,231	10,000	-	194,231	74,540		986,000	51,000	23,540	19,260	49,925	143,725	1.54
15	1.0%	3	229	186,677	15,000	-	201,677	74,382		934,000	52,000	22,382	19,260	50,424	144,066	1.62
16	1.0%	2	231	188,307	10,000	-	198,307	74,202		881,000	53,000	21,202	19,260	50,928	144,390	1.58
17	1.0%	2	233	189,938	10,000	-	199,938	73,999		827,000	54,000	19,999	19,260	51,438	144,696	1.59
18	1.0%	3	236	192,383	15,000	-	207,383	73,773		772,000	55,000	18,773	19,260	51,952	144,985	1.67
19	1.0%	2	238	194,014	10,000	-	204,014	74,524		715,000	57,000	17,524	19,260	52,471	146,256	1.62
20	1.0%	2	240	195,644	10,000	-	205,644	74,231		657,000	58,000	16,231	19,260	52,996	146,487	1.63
21	1.0%	3	243	198,090	15,000	-	213,090	73,914		598,000	59,000	14,914	19,260	53,526	146,700	1.71
22	1.0%	2	245	199,720	10,000	-	209,720	74,575		537,000	61,000	13,575	19,260	54,061	147,896	1.66
23	1.0%	3	248	202,165	15,000	-	217,165	74,190		475,000	62,000	12,190	19,260	54,602	148,052	1.74
24	1.0%	2	250	203,796	10,000	-	213,796	73,783		412,000	63,000	10,783	19,260	55,148	148,190	1.71
25	1.0%	3	253	206,241	15,000	-	221,241	74,352		347,000	65,000	9,352	19,260	55,699	149,312	1.77
26	1.0%	2	255	207,872	10,000	-	217,872	73,877		281,000	66,000	7,877	19,260	56,256	149,393	1.74
27	1.0%	3	258	210,317	15,000	-	225,317	74,379		213,000	68,000	6,379	19,260	56,819	150,458	1.80
28	1.0%	2	260	211,948	10,000	-	221,948	73,835		144,000	69,000	4,835	19,260	57,387	150,482	1.77
29	1.0%	3	263	214,393	15,000	-	229,393	74,269		73,000	71,000	3,269	19,260	57,961	151,490	1.83
30	1.0%	3	266	216,839	15,000	-	231,839	74,657		-	73,000	1,657	19,260	58,541	152,458	1.85

Total Paid in Debt Service = 1,600,000 623,887

Agenda Item 6(A)

PROPOSED SUBSTANTIVE CHANGES FOR RULE R309-545

It has been several years since Rule *R309-545, Drinking Water Storage Tanks*, was reviewed and revised as a whole. This rule contains several outdated and incorrect references to AWWA standards. Recently the DDW staff reviewed *R309-545* and the following recommendations have been suggested by the staff and others.

The proposed modifications to *R309-545* include the following:

1. Eliminate redundant references to sizing and exception requests.
2. Revise to use the same terminology throughout the rule (tank vs. reservoir, etc.).
3. Modify the rule to require a means to drain the tank.
4. Clarify recommendations versus requirements (should, shall, etc.)
5. Eliminate the requirement for tracer studies on new tanks.
6. Add requirements for curing procedures and volatile organic compound sampling for tank coating.
7. Clarify penetrations on the shoebox lid of the tank hatch.
8. Add requirement that the tank venting capacity shall exceed the water flow.
9. Eliminate the requirement for a screen protector on vent lines that are smaller than 6-inches in diameter.
10. Miscellaneous changes to correct formatting, grammar and to make the rule language more easily understood.
11. Correct numerous outdated and incorrect references.

Two versions of the R309-545 revision are enclosed:

- The Division of Administrative (DAR) Rules maintains the official version of the rules and oversees the rulemaking process. The official rulemaking document of the R309-545 revision is in a specific format required by DAR. The DAR format does not contain any indentation. And the DAR format uses strikeouts for deleted words and underlines for added words.
- In addition to the DAR version, the Division of Drinking Water (DDW) has chosen to provide a DDW version of the rule to the public. The rule content of the DDW version is the same as the DAR version. However, the DDW version is formatted for easier reading (with indentation) and contains DDW's interpretations of the rule (in the form of guidance paragraphs). These guidance paragraphs are not considered part of the official rule.

Staff Recommendation: The Staff, believing that the above mentioned changes to R309-545 are substantive, asks the Board to review the proposed changes and, if they agree, authorize the staff to start the rulemaking process and file the proposed rule amendments for publication in the Utah Bulletin.

R309. Environmental Quality, Drinking Water.

R309-545. Facility Design and Operation: Drinking Water Storage Tanks.

R309-545-1. Purpose.

The purpose of this rule is to provide specific requirements for public drinking water storage tanks. It is intended to be applied in conjunction with other rules, specifically R309-500 through R309-550. Collectively, these rules govern the design, construction, operation, and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water, which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-545-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with Title 63G, Chapter 3 of the same, known as the Administrative Rulemaking Act.

R309-545-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-545-4. General.

Storage for drinking water shall be provided as an integral part of each public drinking water system unless an exception to the rule is approved by the Director. Pipeline volume in transmission or distribution lines shall not be considered part of any storage volumes.

R309-545-5. Size of Tank(s).

~~[Required Storage Capacity: In the absence of firm water use data, at or above the 90% confidence level s]~~ Storage tanks shall be sized in accordance with the required minimums of R309-510.

R309-545-6. Tank Material and Structural Adequacy.

(1) Materials.

The materials used in drinking water storage structures shall provide stability and durability as well as protect the quality of the stored water. Steel tanks shall be constructed from new, previously unused, plates and designed in accordance with AWWA Standard D-100-11.

(2) Structural Design.

The structural design of drinking water storage structures shall be sufficient for the environment in which they are located. ~~[The design shall incorporate a careful analysis of potential seismic risks.]~~

R309-545-7. Location of Tanks.

(1) Pressure Considerations.

The location of the ~~[reservoir]~~ tank and the design of the water system shall be such that the minimum working pressure in the distribution system shall meet the minimum pressures as required in

R309-105-9.

(2) Connections.

Tanks shall be located at an elevation where present and anticipated connections can be adequately served. System connections shall not be placed at elevations such that minimum pressures as required in R309-105-9, cannot be continuously maintained.

(3) Sewer Proximity.

Sewers, drains, standing water, and similar sources of possible contamination shall be kept at least 50 horizontal feet from the [~~reservoir~~]tank.

(4) Standing Surface Water.

The area surrounding a ground-level drinking water storage structure shall be graded in a manner that will prevent surface water from standing within 50 horizontal feet of the structure.

(5) Ability to Isolate.

Drinking water storage structures shall be designed and located so that they can be isolated from the distribution system. Storage structures shall be capable of being drained for cleaning or maintenance. Where possible, tanks should be designed with the ability to be isolated without necessitating loss of pressure or service in the distribution system.

(6) Earthquake and Landslide Risks.

Potential geologic hazards shall be taken into account in selecting a tank location. Earthquake and landslide risks shall be evaluated. The design shall incorporate an analysis of potential seismic risks by a Professional Engineer or Geologist.

(7) Security.

The site location and design of a drinking water storage [~~reservoir~~]tank shall take into consideration security issues and potential for vandalism.

R309-545-8. Tank Burial.

(1) Flood Elevation.

The bottom of drinking water storage [~~reservoirs~~]tanks shall be located at least [~~three~~]3 feet above the 100-year flood level or the highest known maximum flood elevation, whichever is higher.

(2) Ground Water.

When the bottom of a drinking water storage [~~reservoir~~]tank [~~is to be~~]will be placed below the normal ground surface, it shall be placed above the local ground water table elevation.

(3) Covered Roof.

When the roof of a drinking water storage [~~reservoir~~]tank [~~is to be~~]will be covered by earth, the roof shall be sloped to drain toward the outside edge of the tank.

R309-545-9. Tank Roof and Sidewalls.

(1) Protection From Contamination.

All drinking water storage structures shall have suitable watertight roofs and sidewalls [~~which~~]that shall also exclude birds, animals, insects, and excessive dust.

(2) Openings.

Openings in the roof and sidewalls shall be kept to a minimum and comply with the following:

(a) Any pipes running through the roof or sidewall of a metal

drinking water storage structure shall be welded, or properly gasketed. In new concrete tanks, these pipes shall be connected to standard wall castings with seepage rings ~~[which]~~that have been poured in place. Vent pipes, in addition~~[s]~~ to seepage rings, shall have raised concrete curbs ~~[which]~~that direct water away from the vent pipe and are formed as a single pour with the roof deck. No roof drains or any other pipes, which may contain water of less quality than drinking water, shall ~~[ever]~~ penetrate the roof, walls, or floor of a drinking water storage tank.

(b) Openings in a storage structure roof or top, designated to accommodate control apparatus or pump columns, shall be welded, gasketed, or curbed and sleeved as above, and shall have additional proper shielding to prevent vandalism.

~~[(c) Openings shall be kept as far away as possible from the storage tank outlet and other sources of surface water.]~~

(3) Adjacent Compartments.

Drinking water shall not be stored or conveyed in a compartment adjacent to wastewater when the two compartments are separated by a single wall.

(4) ~~[Slope of]~~ Roof Drainage.

The roof of all storage structures shall be designed for drainage to eliminate water ponding. Parapets, or similar construction, which would tend to hold water and snow, shall not be utilized unless adequate waterproofing and drainage are provided. Downspout or roof drain pipes shall not enter or pass through the ~~[reservoir]~~ tank.

R309-545-10. Internal Features.

The following shall apply to internal features of drinking water storage structures:

(1) Drains.

~~[If a drain is provided, it shall not discharge to a sanitary sewer. If local authority allows discharge to a storm drain, the drain discharge shall have a physical air gap of at least two pipe diameters between the discharge end of the pipe and the overflow rim of the receiving basin.]~~

~~(a) A means shall be provided for the draining of drinking water storage tanks.~~

~~(b) Where possible, the drain shall be separate from the outlet pipeline. If a tank drain line is provided, it shall be sloped for complete drainage.~~

~~(c) If a drain is provided, it shall not discharge to a sanitary sewer.~~

~~(d) If local authority allows discharge to a storm drain, the drain discharge shall have a physical ~~[air gap]~~clearance of at least ~~[two pipe diameters]~~12 inches between the discharge end of the pipe and the overflow rim of the receiving basin.~~

(2) Internal Catwalks.

Internal catwalks, if provided and located ~~[so as to be]~~ over the drinking water, shall have a solid floor with raised edges. The edges and floor shall be ~~[so]~~ designed so that shoe scrapings or dirt will not fall into the drinking water.

(3) Inlet and Outlet.

(a) To minimize potential sediment in the flow from the

[structure]tank, the [normal] outlet pipes from all [reservoirs]tanks shall be located in a manner to provide a silt trap prior to discharge into the distribution system.

(b) Inlet and outlet pipes shall be configured to provide mixing and circulation.

(4) [Disinfection]Tank Floor.

The floor of the storage structure shall be sloped to permit complete drainage of the structure. [If the drinking water reservoir is to be utilized as a contact basin for disinfection purposes, the design engineer shall conduct tracer studies or other tests, previously approved by the Director, to determine the minimum contact time and the potential for short circuiting.]

R309-545-11. [ANSI/NSF International, Standard 61.]Internal Surfaces and Coatings.

(1) ANSI/NSF Standard 61 Certification.

All interior surfaces or coatings shall consist of products [which]that are certified [by laboratories approved by ANSI and which] to comply with ANSI/NSF Standard 61 or other standards approved by the Director. This requirement applies to any pipes and fittings, protective materials (e.g., paints, coatings, concrete admixtures, concrete release agents, or concrete sealers), joining and sealing materials (e.g., adhesives, caulks, gaskets, primers and sealants) and mechanical devices (e.g., electrical wire, switches, sensors, valves, or submersible pumps) [which]that are located so as to come into contact with the drinking water.

(2) Curing Procedures[Time] and Volatile Organic Compounds.

(a) Proper curing procedures shall be followed per manufacturer's directions, including curing time, temperature, and forced air ventilation. Drinking water shall not be introduced into the tank until proper curing has occurred.

(b) [If products which require a cure or set time are utilized in such a way as to come into contact with the drinking water, then water shall not be introduced into the vessel until any required curing time has passed.] It shall be the responsibility of the water [purveyor]system to assure that no tastes or odors, toxins, or [other compounds]contaminants, which result in MCL exceedances, are imparted to the water as a result of tank coating or repair.

(c) Prior to placing a drinking water storage tank in service, cleaning, disinfection, and flushing procedures shall be completed.

(d) Prior to placing a drinking water storage tank in service, an analysis for volatile organic compounds from water contained therein may be required to verify that no such compounds have leached into the water.

R309-545-12. Steel Tanks.

(1) Paints.

Proper protection shall be given to all metal surfaces, both internal and external, by paints or other protective coatings. Internal coatings shall comply with [ANSI/NSF Standard 61]R309-545-11.

(2) Cathodic Protection.

If installed, internal cathodic protection shall be designed,

installed and maintained by personnel trained in corrosion engineering.

R309-545-13. Tank Overflow.

All water storage structures shall be provided with an overflow ~~[which]that~~ is discharged at an elevation between 12 and 24 inches above the ground surface or the rim of the receiving basin.~~[with an appropriate air gap.]~~ The discharges shall be directed away from the tank and shall not cause erosion.

(1) Diameter.

All overflow pipes shall be of sufficient capacity to permit waste of water in excess of the filling rate.

(2) Slope.

All overflow pipes shall ~~[B]~~be sloped for complete drainage~~[7]~~.

(3) Screen.

All overflow pipes shall be screened with No. 4 mesh non-corrodible screen installed at a location least susceptible to damage by vandalism~~[7]~~.

(4) Visible Discharge.

All overflow pipes shall be located so that any discharge is visible~~[7]~~.

(5) Cross Connections.

All overflow pipes shall not be connected to, or discharge into, any sanitary sewer system.

(6) Paint.

If an overflow pipe within a ~~[reservoir]tank~~ is painted or otherwise coated, ~~[such]the~~ coating shall comply with ANSI/NSF Standard 61.

R309-545-14. Access Openings.

Drinking water storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance.

(1) Height.

There shall be at least one opening above the water line, which shall be framed at least ~~[four]~~ 4 inches above the surface of the roof at the opening; or if on a buried structure, shall be elevated at least 18 inches above any earthen cover over the structure. The frame shall be securely fastened and sealed to the tank roof ~~[so as]~~ to prevent any liquid contaminant entering the tank. Concrete drinking water storage structures shall have raised curbs around access openings, formed and poured continuous with the pouring of the roof and sloped to direct water away from the frame.

(2) Shoebox Lid.

The frame of any access opening shall be provided with a close-fitting, solid shoebox type cover ~~[which]that~~ extends down around the frame at least ~~[two]~~ 2 inches and is furnished with a gasket(s) between the lid and frame~~[7]~~. The horizontal surface of the tank lid shall not have any openings, cracks, or penetrations, such as a lock, key hole, or bolted handle that would allow contaminants to enter the tank.

(3) Locking Device.

The lid to any access opening shall have a locking device.

R309-545-15. Venting.

Drinking water storage structures shall be vented. The air venting capacity shall exceed the water inflow and the water outflow of the tank. Overflows shall not be considered or used as vents. Vents provided on drinking water storage ~~[reservoirs]~~tanks shall:

(1) Inverted Vent.

Be downturned a minimum of ~~[two]~~2 inches below any opening ~~[or]~~and shielded to prevent the entrance of ~~[surface water and rainwater]~~contaminants.

(2) Open ~~[Discharge]~~Venting.

On buried structures, ~~[have the discharge]~~the end of the vent discharge shall be a minimum of 24 inches above the earthen covering.

(3) Blockage.

Be located and sized ~~[so as]~~ to avoid blockage during winter conditions.

~~[(4) Pests.~~

~~Exclude birds and animals.~~

~~(5) Dust.~~

~~Exclude insects and dust, as much as this function can be made compatible with effective venting.]~~

~~[(6)]~~4) Screen.

Be fitted with No. 14 mesh or finer non-corrodible screen.

~~[(7)]~~5) Screen Protector.

Vents that are 6-inch diameter or greater shall b[B]e fitted with additional heavy gage screen or substantial covering, which will protect the No. 14 mesh screen against vandalism or damage. ~~[and, further, discourage purposeful attempts to contaminate the reservoir.]~~

R309-545-16. Freezing Prevention.

All drinking water storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing which may interfere with proper functioning.

R309-545-17. Level Controls.

Adequate level control devices shall be provided to maintain water levels in storage structures.

~~[R309-545-18. Security.~~

~~Locks on access manholes, and other necessary precautions shall be provided to prevent unauthorized entrance, vandalism, or sabotage.]~~

R309-545-~~[19]~~18. Safety.

(1) Utah OSHA.

The safety of employees shall be considered in the design of the storage structure. Ladders, ladder guards, platform railings, and safely located entrance hatches shall be provided where applicable. As a minimum, ~~[such matters]~~safety practices shall conform to pertinent laws and regulations of the Utah Occupational Safety and Health ~~[Administration]~~Division.

(2) Ladders.

~~[Generally,]~~Ladders having an unbroken length in excess of 20 feet shall be provided with appropriate safety ~~[devices]~~features,

such as a safety cage, a safety harness, platforms, etc. [~~This requirement shall apply both to interior and exterior reservoir ladders.~~]

(3) Requirements for Elevated Tanks.

Elevated tanks shall have railings or handholds provided [~~for~~] to [~~transfer from the~~] access [~~tube to~~] the water compartment safely.

R309-545-[20]19. Disinfection.

Drinking water storage structures shall be disinfected before being put into service for the first time, and after being entered for cleaning, repair, or painting. The [~~reservoir~~]tank shall be cleaned of all refuse and shall then be washed with [~~potable~~]drinking water prior to adding the disinfectant. AWWA Standard C652-[02]11 shall be followed for [~~reservoir~~]tank disinfection[,]. [~~with the exception there shall be no delivery of waters used in the disinfection process to the distribution system, unless specifically authorized, in writing, by the Director.~~]

Upon completing any of the three methods for storage tank chlorination, as outlined in AWWA C652-[02]11, the water system must properly dispose of residual super-chlorinated waters in the outlet pipes. Other super-chlorinated waters, which are not to be ultimately diluted and delivered into the distribution system, shall also be properly disposed. Chlorinated water discharged from the storage tank shall be disposed of in conformance with R317 of the Utah Administrative Code.

[~~Chlorinated water discharged from the storage tank shall be disposed of in an acceptable manner and in conformance with the rules of the Utah Water Quality Board (see R317 of the Utah Administrative Code).~~]

R309-545-[21]20. Incorporation by Reference.

The following list of Standards shall be considered as incorporated by reference in this specific rule. The most recent published copy of the referenced standard will apply in each case.

- (1) AWWA Standards.
 - (a) C652-[02]11, Disinfection of Water Storage Reservoirs.
 - (b) D100-[05]11, Welded Steel Tanks for Water Storage.
 - (c) D101-53[R86], Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks for Water Storage.
 - (d) D102-[03]11, Coating Steel Water-Storage Tanks.
 - (e) D103-[97]09, Factory-Coated Bolted Steel Tanks for Water Storage.
 - (f) D104-[01]11, Automatically Controlled, Impressed-Current Cathodic Protection for the Interior Submerged Surfaces of Steel Water Tanks.
 - (g) D110-[04]13, Wire- and Strand-Wound, Circular, Prestressed-Concrete Water Tanks [~~(including addendum D110a-96)~~].
 - (h) D115-[95]06, [~~Circular Prestressed Concrete Water Tanks With Circumferential Tendons~~]Tendon-Prestressed Concrete Water Tanks.
 - (i) D120-[02]09, Thermosetting Fiberglass-Reinforced Plastic Tanks.
 - (j) D130-[02]11, [~~Flexible Membrane Lining and Floating Cover Materials for Potable Water Storage~~]Geomembrane Materials for Potable

Water Applications.

- (2) NSF International Standards.
 - (a) NSF 60, Drinking Water Treatment Chemicals - Health Effects.
 - (b) NSF 61, Drinking Water System Components - Health Effects.
- (3) Utah OSHA.

Applicable standards of the Utah Occupational Safety and Health ~~[Administration]~~Division are hereby incorporated by reference.

R309-545-2[2]1. Operation and Maintenance of Storage Tanks.

- (1) Inspection and Cleaning.

Tanks ~~[which]that~~ are entered for inspection and cleaning shall be disinfected in accordance with AWWA Standard C652-~~[02]~~11 prior to being returned to service. ~~[When diver(s) enter storage tanks that have not been drained for inspection purposes, they shall comply with section five of the above standard unless the tank is constructed of steel, in which case they shall comply additionally with AWWA Standard D101-53(R86).]~~

- (2) Recoating or Repairing.

Any substance used to recoat or repair the interior of a drinking water storage tank shall be certified to conform ~~[with]to~~ ANSI/NSF Standard 61. If the tank is not drained for recoating or repairing, any substance or material used to repair the interior coatings or cracks shall be suitable for underwater application, as indicated by the manufacturer, as well as comply with both ANSI/NSF Standards 60 and 61. Recoating of the interior of a drinking water tank shall comply with the plan review requirements of R309-500-5(1)(c)(i).

- (3) Seasonal Use.

Water storage tanks which are operated seasonally shall be flushed and disinfected in accordance with AWWA Standard C652-~~[02]~~11 prior to each season's use. Certification of proper disinfection~~[as evidenced by at least one satisfactory bacteriologic sample,]~~ shall be obtained by the water system ~~[management]~~ and kept on file. ~~[for inspection by personnel of the Division.]~~ During the non-use period, care shall be taken to see that openings to the water storage tank (those which are normally closed and sealed during normal use) are closed and secured.

KEY: drinking water, storage tanks, access, overflow and drains
Date of Enactment or Last Substantive Amendment: April 27, 2009
Notice of Continuation: March 22, 2010
Authorizing, and Implemented or Interpreted Law: 19-4-104

R309-545. Facility Design and Operation: Drinking Water Storage Tanks.

R309-545-1. Purpose.

The purpose of this rule is to provide specific requirements for public drinking water storage tanks. It is intended to be applied in conjunction with other rules, specifically R309-500 through R309-550. Collectively, these rules govern the design, construction, operation, and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water, which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-545-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with Title 63G, Chapter 3 of the same, known as the Administrative Rulemaking Act.

R309-545-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-545-4. General.

Storage for drinking water shall be provided as an integral part of each public drinking water system unless an exception to the rule is approved by the Director. Pipeline volume in transmission or distribution lines shall not be considered part of any storage volumes.

R309-545-5. Size of Tank(s).

~~Required Storage Capacity: In the absence of firm water use data, at or above the 90% confidence level, s~~Storage tanks shall be sized in accordance with the required minimums of R309-510.

~~*Guidance: The storage requirements in R309-510 may be reduced or eliminated when the source and any treatment facility have sufficient capacity and reliability (e.g. dual pumps, standby power, etc.) to serve the peak hourly demands of the system plus fire flows. A request for an exception from rule, as described in R309-105-6(2)(b), shall be submitted along with records supporting the request and the exception approved, in writing, by the Director before storage can be reduced or eliminated.*~~

R309-545-6. Tank Material and Structural Adequacy.

(1) Materials.

The materials used in drinking water storage structures shall provide stability and durability as well as protect the quality of the stored water. Steel tanks shall be constructed from new, previously unused, plates and designed in accordance with AWWA Standard D-100-~~11~~.

(2) Structural Design.

The structural design of drinking water storage structures shall be sufficient for the environment in which they are located. ~~The design shall incorporate a careful analysis of potential seismic risks.~~

Guidance: Division review of plans and specifications for storage tanks does not include an evaluation of structural suitability. Certificate of structural adequacy may be requested from the design engineer before approval is granted.

R309-545-7. Location of Tanks.

(1) Pressure Considerations.

The location of the ~~reservoir tank~~ and the design of the water system shall be such that the minimum working pressure in the distribution system shall meet the minimum pressures as required in R309-105-9.

Guidance: ~~The normal working pressure shall be between 40 and 60 psi. When static pressures exceed 80 psi, pressure reducing devices shall be provided on mains in the distribution system, or individual home pressure reducing valves shall be installed per the Utah Plumbing Code.~~ The expected water level variation in the tank ~~shall~~ should be taken into account when considering minimum and maximum distribution system pressures. The maximum variation between high and low water levels in storage structures that provide pressure to a distribution system should not exceed 30 feet.

(2) Connections.

Tanks shall be located at an elevation where present and anticipated connections can be adequately served. System connections shall not be placed at elevations such that minimum pressures, as required in R309-105-9, cannot be continuously maintained.

(3) Sewer Proximity.

Sewers, drains, standing water, and similar sources of possible contamination shall be kept at least 50 horizontal feet from the ~~reservoir tank~~.

(4) Standing Surface Water.

The area surrounding a ground-level drinking water storage structure shall be graded in a manner that will prevent surface water from standing within 50 horizontal feet of the structure.

(5) Ability to Isolate.

Drinking water storage structures shall be designed and located so that they can be isolated from the distribution system. Storage structures shall be capable of being drained for cleaning or maintenance. Where possible, tanks should be designed with the ability to be isolated without necessitating loss of pressure or service in the distribution system.

~~Guidance: It is recommended that any discharge lines from tank overflow or drains be sloped for complete drainage so as to prevent any standing water in these lines. It is also recommended that these lines be separate from each other as well as separate from other discharge lines, such as from perimeter french drain system, and each be easily visible as required for the overflow line.~~

(6) Earthquake and Landslide Risks.

Potential geologic hazards shall be taken into account in selecting a tank location. Earthquake and landslide risks shall be evaluated. The design shall incorporate an analysis of potential seismic risks by a Professional Engineer or Geologist.

Guidance: The design may include special shut-off or isolation valves designed to react in the event of an earthquake.

(7) Security.

The site location and design of a drinking water storage ~~reservoir~~tank shall take into consideration security issues and potential for vandalism.

Guidance: Fencing is advisable where the tank is highly accessible to the public or livestock. Where electricity or telemetry is available, consideration should be given to the installation of electronic security equipment.

R309-545-8. Tank Burial.

(1) Flood Elevation.

The bottom of drinking water storage ~~reservoirs~~tanks shall be located at least ~~three~~3 feet above the 100~~-~~year flood level or the highest known maximum flood elevation, whichever is higher.

~~Guidance: The bottom shall be placed at the normal ground surface when ever possible.~~

(2) Ground Water.

When the bottom of a drinking water storage ~~reservoir tank is to be~~ will be placed below the normal ground surface, it shall be placed above the local ground water table elevation.

Guidance: It is recommended that a french drain system be considered around any buried storage tank, but especially if the ground water table elevation is unknown or may exhibit seasonal variations.

(3) Covered Roof.

When the roof of a drinking water storage ~~reservoir tank is to~~ will be covered by earth, the roof shall be sloped to drain toward the outside edge of the tank.

R309-545-9. Tank Roof and Sidewalls.

(1) Protection From Contamination.

All drinking water storage structures shall have suitable watertight roofs and sidewalls ~~which that~~ shall also exclude birds, animals, insects, and excessive dust.

(2) Openings.

Openings in the roof and sidewalls shall be kept to a minimum and comply with the following:

(a) Any pipes running through the roof or sidewall of a metal drinking water storage structure shall be welded, or properly gasketed. In new concrete tanks, these pipes shall be connected to standard wall castings with seepage rings ~~which that~~ have been poured in place. Vent pipes, in addition to seepage rings, shall have raised concrete curbs ~~which that~~ direct water away from the vent pipe and are formed as a single pour with the roof deck. No roof drains or any other pipes, which may contain water of less quality than drinking water, shall ~~ever~~ penetrate the roof, walls, or floor of a drinking water storage tank.

(b) Openings in a storage structure roof or top, designated to accommodate control apparatus or pump columns, shall be welded, gasketed, or curbed and sleeved as above, and shall have additional proper shielding to prevent vandalism.

Guidance: Valves and controls ~~should~~ be located outside the storage structure so that the valve stems and similar projections will not pass through the roof or top of the ~~reservoir tank~~.

~~(c) Openings shall be kept as far away as possible from the storage tank outlet and other sources of surface water.~~

(3) Adjacent Compartments.

Drinking water shall not be stored or conveyed in a compartment adjacent to wastewater when the two compartments are separated by a single wall.

(4) ~~Slope of Roof~~ Drainage.

The roof of all storage structures shall be designed for drainage to eliminate water ponding. Parapets, or similar construction, which would tend to hold water and snow, shall not be utilized unless adequate waterproofing and drainage are provided. Downspout or roof drain pipes shall not enter or pass through the ~~reservoir tank~~.

R309-545-10. Internal Features.

~~Guidance: A means shall be provided for the draining of drinking water storage structures that is separate from the normal outlet pipeline. The floor of the storage structure shall be sloped to permit complete drainage of the structure. Also the maximum variation between high and low water levels in storage structures, providing pressure to a distribution system, shall not exceed 30 feet.~~

The following shall apply to internal features of drinking water storage structures:

(1) Drains.

- (a) A means shall be provided for the draining of drinking water storage tanks.
- (b) Where possible, the drain shall be separate from the outlet pipeline. If a tank drain line is provided, it shall be sloped for complete drainage.
- (c) If a drain is provided, it shall not discharge to a sanitary sewer.
- (d) If local authority allows discharge to a storm drain, the drain discharge shall have a physical air gap clearance of at least ~~two pipe diameters~~ 12 inches between the discharge end of the pipe and the overflow rim of the receiving basin.

Guidance: A “means” to drain the storage tank can include a separate drain line, the ability to drain through a downstream hydrant or at a location with a significant elevation difference from the tank floor, or pumping out the water. It is recommended that the drain line be screened with No. 4 screen.

(2) Internal Catwalks.

Internal catwalks, if provided and located ~~so as to be~~ over the drinking water, shall have a solid floor with raised edges. The edges and floor shall be ~~so~~ designed so that shoe scrapings or dirt will not fall into the drinking water.

(3) Inlet and Outlet.

(a) To minimize potential sediment in the flow from the ~~structure~~tank, the ~~normal~~ outlet pipes from all ~~reservoirs~~tanks shall be located in a manner to provide a silt trap prior to discharge into the distribution system.

(b) Inlet and outlet pipes shall be configured to provide mixing and circulation.

Guidance: ~~Where separate drains are not provided, removable silt stops shall be provided on reservoir discharge pipes. Internal baffling, special spray nozzels, bends, or mixing valves may also be needed in order to minimize the possibility of short circuiting through the tank depending on the size and shape of the tank and the flow.~~

(4) Disinfection Tank Floor.

~~The floor of the storage structure shall be sloped to permit complete drainage of the structure. If the drinking water reservoir is to be utilized as a contact basin for disinfection purposes, the design engineer shall conduct tracer studies or other tests, previously approved by the Director, to determine the minimum contact time and the potential for short circuiting.~~

Guidance: ~~In order to minimize short circuiting and to maximize the effectiveness of any disinfection process, inlet and outlet pipes shall be as distant from one another as possible. Internal baffling may also be needed in order to minimize the possibility of short circuiting through the tank.~~

R309-545-11. ANSI/NSF International, Standard 61. Internal Surfaces and Coatings

(1) ANSI/NSF Standard 61 Certification.

All interior surfaces or coatings shall consist of products ~~which~~that are certified by ~~laboratories approved by ANSI and which~~to comply with ANSI/NSF Standard 61 or other standards approved by the Director. This requirement applies to any pipes and fittings, protective materials (e.g., paints, coatings, concrete admixtures, concrete release agents, or concrete sealers), joining and sealing materials (e.g., adhesives, caulks, gaskets, primers and sealants) and mechanical devices (e.g., electrical wire, switches, sensors, valves, or submersible pumps) ~~which~~that are located so as to come into contact with the drinking water.

Guidance: ~~If it can be shown to the satisfaction of the Director that flushing, swabbing, cleaning and disinfection procedures will adequately flush a coating (e.g. release agents, curing compounds, etc.) from the tank leaving no residual exceeding any MCL, the Director may accept it's use. Prior to placing a drinking water storage reservoir back in service, where products not certified to ANSI/NSF Standard 61 are utilized, the Director may require sampling and testing for a specific compound or ingredient based~~

~~upon the product used.~~

(2) Curing ProceduresTime and Volatile Organic Compounds.

- (a) Proper curing procedures shall be followed per manufacturer's directions, including curing time, temperature, and forced air ventilation. Drinking water shall not be introduced into the tank until proper curing has occurred.
- (b) ~~If products which require a cure or set time are utilized in such a way as to come into contact with the drinking water, then water shall not be introduced into the vessel until any required curing time has passed.~~ It shall be the responsibility of the water purveyor system to assure that no tastes or odors, toxins, or ~~other compounds~~contaminants, which result in MCL exceedances, are imparted to the water as a result of tank coating or repair.
- (c) Prior to placing a drinking water storage tank in service, cleaning, disinfection, and flushing procedures shall be completed.
- (d) Prior to placing a drinking water storage tank in service, an analysis for volatile organic compounds from water contained therein may be required to verify that no such compounds have leached into the water.

~~*Guidance: Prior to placing a drinking water storage reservoir back in service, an analysis for volatile organic compounds from water contained therein is advisable to establish that no such compounds have leached into the water.*~~

R309-545-12. Steel Tanks.

(1) Paints.

Proper protection shall be given to all metal surfaces, both internal and external, by paints or other protective coatings. Internal coatings shall comply with ~~ANSI/NSF Standard 61~~R309-545-11.

(2) Cathodic Protection.

If installed, internal cathodic protection shall be designed, installed, and maintained by personnel trained in corrosion engineering.

Guidance: Cathodic Protection should be considered if an external structure, such as a communication tower, is added to the tank.

R309-545-13. Tank Overflow.

All water storage structures shall be provided with an overflow ~~which that~~ is discharged at an elevation between 12 and 24 inches above the ground surface or the rim of the receiving basin. ~~with an appropriate air gap.~~ The discharges shall be directed away from the tank and shall not

R309-545 Facility Design and Operation: Drinking Water Storage Tanks

cause erosion.

(1) Diameter.

All overflow pipes shall be of sufficient capacity to permit waste of water in excess of the filling rate.

(2) Slope.

All overflow pipes shall ~~b~~Be sloped for complete drainage.

(3) Screen.

All overflow pipes shall be screened with No. 4 mesh non-corrodible screen installed at a location least susceptible to damage by vandalism.

(4) Visible Discharge.

All overflow pipes shall be located so that any discharge is visible.

(5) Cross Connections.

All overflow pipes shall not be connected to, or discharge into, any sanitary sewer system.

(6) Paint.

If an overflow pipe within a ~~reservoir tank~~ is painted or otherwise coated, ~~such the~~ coating shall comply with ANSI/NSF Standard 61.

R309-545-14. Access Openings.

Drinking water storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance.

Guidance: When considering what is reasonably convenient, ~~the design engineer shall consider that~~ it may be necessary for one individual to open the access. The access shall be hinged at one side, and counter-weighted if the lid is in excess of 60 pounds. The safety of the operator shall be considered when designing and locating access openings. Factors to be considered shall include the placement of the locking mechanism, the location of the hinges for the hatch, etc.

(1) Height.

There shall be at least one opening above the water line, which shall be framed at least ~~four~~4 inches above the surface of the roof at the opening; or if on a buried structure, shall be elevated at least 18 inches above any earthen cover over the structure. The frame shall be securely fastened and sealed to the tank roof ~~so as~~ to prevent any liquid contaminant entering the tank. Concrete drinking water storage structures shall have raised curbs around access openings, formed and poured continuous with the pouring of the roof and

sloped to direct water away from the frame.

Guidance: It is preferable that access openings ~~be~~ are framed higher than the ~~four~~ 4 inches required above, and more if located in areas subject to heavy snows. ~~be more in the area of 24 to 36 inches.~~

(2) Shoebox Lid.

The frame of any access opening shall be provided with a close-fitting, solid shoebox-type cover ~~which~~ that extends down around the frame at least ~~two~~ 2 inches and is furnished with a gasket(s) between the lid and frame. The horizontal surface of the tank lid shall not have any openings, cracks, or penetrations, such as a lock, key hole, or bolted handle that would allow contaminants to enter the tank.

Guidance: ~~By “solid” the Division means having no opening, cracks or other penetrations of the lid which could allow liquid contaminants to enter the tank. Designers~~ Those wishing to utilize pre-manufactured roof ~~shutters~~ hatches as access lids for drinking water storage structures ~~shall~~ should contact the distributor of such and make clear that any penetrations through the lid is not acceptable.

(3) Locking Device.

The lid to any access opening shall have a locking device.

R309-545-15. Venting.

Drinking water storage structures shall be vented. The air venting capacity shall exceed the water inflow and the water outflow of the tank. Overflows shall not be considered or used as vents.

Vents provided on drinking water storage ~~reservoirs~~ tanks shall:

(1) Inverted Vent.

Be downturned a minimum of ~~two~~ 2 inches below any opening ~~or~~ and shielded to prevent the entrance of ~~surface water and rainwater~~ contaminants.

(2) Open Discharge Venting.

On buried structures, ~~have the discharge~~ the end of the vent discharge shall be a minimum of 24 inches above the earthen covering.

Guidance: In areas of heavy snowfall, it is recommended that the vent discharge be raised.

(3) Blockage.

Be located and sized ~~so as~~ to avoid blockage during winter conditions.

~~(4) Pests.~~

~~Exclude birds and animals.~~

~~(5) Dust.~~

~~Exclude insects and dust, as much as this function can be made compatible with effective venting.~~

~~(46) Screen.~~

Be fitted with No. 14 mesh or finer non-corrodible screen.

~~(57) Screen Protector.~~

~~Vents that are 6-inch diameter or greater shall be fitted with additional heavy gage screen or substantial covering, which will protect the No. 14 mesh screen against vandalism or damage. ~~and, further, discourage purposeful attempts to contaminate the reservoir.~~~~

R309-545-16. Freezing Prevention.

All drinking water storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing, which may interfere with proper functioning.

R309-545-17. Level Controls.

Adequate level control devices shall be provided to maintain water levels in storage structures.

~~Guidance: Some tanks should have automatic flow control devices because of the size and complexity of the system, while other smaller systems may monitor the tank levels manually. Level controls should be adequate to assure that the distribution system and tank will not run out of water.~~

~~R309-545-18. Security.~~

~~Locks on access manholes, and other necessary precautions shall be provided to prevent unauthorized entrance, vandalism, or sabotage.~~

~~Guidance: Fencing is advisable where the reservoir is highly accessible to the public or livestock. Where electricity or telemetry is available, consideration shall be given to the installation of electronic security equipment.~~

R309-545-1~~89~~. Safety.

(1) Utah OSHA.

The safety of employees shall be considered in the design of the storage structure. Ladders, ladder guards, platform railings, and safely located entrance hatches shall be provided where applicable. As a minimum, ~~such matters~~ safety practices shall conform to pertinent laws and regulations of the Utah Occupational Safety and Health ~~Administration~~ Division.

(2) Ladders.

~~Generally, ladders~~ having an unbroken length in excess of 20 feet shall be provided with appropriate safety ~~devices~~ features, such as a safety cage, a safety harness, platforms, etc. ~~This requirement shall apply both to interior and exterior reservoir ladders.~~

(3) Requirements for Elevated Tanks.

Elevated tanks shall have railings or handholds provided ~~for to transfer from the~~ access ~~tube to~~ the water compartment safely.

R309-545-2~~019~~. Disinfection.

Drinking water storage structures shall be disinfected before being put into service for the first time, and after being entered for cleaning, repair, or painting. The ~~reservoir tank~~ shall be cleaned of all refuse and shall then be washed with ~~potable drinking~~ water prior to adding the disinfectant. AWWA Standard C652-~~02-11~~ shall be followed for ~~reservoir tank~~ disinfection, ~~with the exception there shall be no delivery of waters used in the disinfection process to the distribution system, unless specifically authorized, in writing, by the Director.~~

Upon completing any of the three methods for storage tank chlorination, as outlined in AWWA C652-~~0211~~, the water system must properly dispose of residual super-chlorinated waters in the outlet pipes. Other super-chlorinated waters, which are not to be ultimately diluted and delivered into the distribution system, shall also be properly disposed. Chlorinated water discharged from the storage tank shall be disposed of in conformance with R317 of the Utah Administrative Code.

~~*Guidance: The Director may require sampling and analysis of water prior to authorizing it's delivery into a distribution system.*~~

~~Chlorinated water discharged from the storage tank shall be disposed of in an acceptable manner and in conformance with the rules of the Utah Water Quality Board (see R317 of the Utah Administrative Code).~~

R309-545-2~~10~~. Incorporation by Reference.

The following list of Standards shall be considered as incorporated by reference in this specific

R309-545 Facility Design and Operation: Drinking Water Storage Tanks

rule. The most recent published copy of the referenced standard will apply in each case.

(1) AWWA Standards.

- (a) C652-~~0211~~, Disinfection of Water Storage Reservoirs.
- (b) D100-~~0511~~, Welded Steel Tanks for Water Storage.
- (c) D101-53(~~R86~~), Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks for Water Storage.
- (d) D102-~~0311~~, Coating Steel Water-Storage Tanks.
- (e) D103-~~9709~~, Factory-Coated Bolted Steel Tanks for Water Storage.
- (f) D104-~~0411~~, Automatically Controlled, Impressed-Current Cathodic Protection for the Interior Submerged Surfaces of Steel Water Tanks.
- (g) D110-~~0413~~, Wire- and Strand-Wound, Circular, Prestressed -Concrete Water Tanks (~~including addendum D110a-96~~).
- (h) D115-~~9506~~, ~~Circular Prestressed Concrete Water Tanks With Circumferential Tendons~~Tendon-Prestressed Concrete Water Tanks.
- (i) D120-~~0209~~, Thermosetting Fiberglass-Reinforced Plastic Tanks.
- (j) D130-~~0211~~, ~~Flexible Membrane Lining and Floating Cover Materials for Potable Water Storage~~Geomembrane Materials for Potable Water Applications.

(2) NSF International Standards.

- (a) NSF 60, Drinking Water Treatment Chemicals - Health Effects.
- (b) NSF 61, Drinking Water System Components - Health Effects.

(3) Utah OSHA.

Applicable standards of the Utah Occupational Safety and Health Administration Division are hereby incorporated by reference.

R309-545-221. Operation and Maintenance of Storage Tanks.

(1) Inspection and Cleaning.

Tanks ~~which that~~ are entered for inspection and cleaning shall be disinfected in accordance with AWWA Standard C652-~~02-11~~ prior to being returned to service. ~~When diver(s) enter storage tanks that have not been drained for inspection purposes, they shall comply with section five of the above standard unless the tank is constructed of steel, in which case they shall comply additionally with AWWA Standard D101-53(R86).~~

(2) Recoating or Repairing.

Any substance used to recoat or repair the interior of a drinking water storage tank shall

R309-545 Facility Design and Operation: Drinking Water Storage Tanks

be certified to conform ~~[with]~~ to ANSI/NSF Standard 61. If the tank is not drained for recoating or repairing, any substance or material used to repair the interior coatings or cracks shall be suitable for underwater application, as indicated by the manufacturer, as well as comply with both ANSI/NSF Standards 60 and 61. Recoating of the interior of a drinking water tank shall comply with the plan review requirements of R309-500-5(1)(c)(i).

(3) Seasonal Use.

Water storage tanks, which are operated seasonally, shall be flushed and disinfected in accordance with AWWA Standard C652-~~02-11~~ prior to each season's use. Certification of proper disinfection, ~~as evidenced by at least one satisfactory bacteriologic sample,~~ shall be obtained by the water system management and kept on file ~~for inspection by personnel of the Division~~. During the non-use period, care shall be taken to see that openings to the water storage tank (those which are normally closed and sealed during normal use) are closed and secured.

KEY: drinking water, storage tanks, access, overflow and drains

Date of Enactment or Last Substantive Amendment: April 27, 2009

Notice of Continuation: March 22, 2010

Authorizing, and Implemented or Interpreted Law: 19-4-104

Informal Comments to R309-545 Storage Tanks

Prior to initiating the rule making process, the Division asked for informal comments from engineering consultants, water system operators, and the public by means of email and the website. This is done in an effort to address as many concerns as possible prior to beginning the formal rulemaking process. Once the rulemaking process is initiated, a formal comment period is required by the Division of Administrative Rules.

Mark Hansen email 3/19/14:

Note: I really believe that it is time to stipulate that the hinges should be located at the outside edge of the an elevated tank with the locking mechanism located at the inner area of the tank. Most elevated tanks that I have inspected during the san. surveys assigned to me had the locking mechanisms located at the outside edge or perimeter of the tank which made the access, very unsafe and dangerous. Usually there were no safeguards to prevent an operator from falling off the tank when unlocking and opening the access hatch. Let me know what you think. It might be too costly to have all water systems make the changes to the existing tanks, but any new tanks that are built in the future should really consider the safety issues regarding the locking mechanism location... I noticed that there is a section further on that talks about safety and OSHA that I hadn't made it for review before I sent you the comments.

The following language was added into the guidance paragraph under Access Openings: "The safety of the operator in opening and accessing the tank shall be considered when designing and locating access openings."

Nathan Hall email 3/19/14:

R309-545-10(1)Drains- we say a tank drain is required in a), then in b) say, "if a drain is provided..." just kind of ironic. Suggest that b) say, "tank drains shall be sloped for complete drainage."

The language was reformatted to provide clarity. And a guidance paragraph was added to explain possible options for "means" to drain the storage tank.

R309-515-18(2)Ladders- "safety device features, such as"- take out the word *devices*.

Recommendation incorporated.

Mark Hansen email 3/26/14

R309-545-14(3) ...The lid to any access opening shall have a locking device, that is not located near the outside perimeter of the tank (maybe worded that the locking device should be located a min. of 2 ft. from the outer perimeter of the tank?)

R309-545-18(1)Utah OSHA... *ladders, ladder guards, platform railings, and entrance hatches shall be provided and safely located entrance hatches shall be provided where applicable*

R309-545-18(3) *Elevated tanks shall have railing or handholds provided to access the water compartment safely.*

Comments addressed in guidance under access hatches- see 1st comment.

Pete Keers verbal 3/31/14

R309-545-15(5) Screen Protector- suggests replacing vandalism with damage. Screen could be damaged by weight of debris or other factors unrelated to vandalism.

Recommendation incorporated- include vandalism and damage.

Ben Miner email 4/8/14:

R309-545-6(2) Structural Design: Note: I see this as two separate issues 1) Structural Design- i.e. steel and concrete which should be an engineer and 2)Seismic risks which I think could be either an Engineer or Geologist.

The second sentence was moved from Structural design to Earthquake and Landslide Risks.

R309-545-7(1) Guidance of normal working pressure that has been deleted- Note: I like this as a rule of thumb. ...*The maximum variation between high and low water levels in storage structures that provide pressure to a distribution system should generally not exceed 30 feet.*

No action- guidance of normal working pressure is still in R309-550 and “generally” does not add anything as it is already in guidance and is a recommendation.

R309-545-10(3)(b) Note: I would like to see this item defined a little more as what will be required. For many years designers would attach an elbow or 45-degree bend inside the tank in an attempt to encourage mixing. I understand that this generally isn't very effective unless the tank is small enough and the flow is essentially injected at high velocity. Some engineers may feel that this is an adequate level of mixing. Several vendors have propeller or jet mixers, or have piping or baffles which go inside the tank. These products need to be coupled with computation fluid dynamic (CFD) models to predict performance. Stand-alone CFD models can also be used to predict water quality in the tank. While I understand the water quality advantages of mixing, I wonder if these complex models or expensive equipment should be required of all tanks, or if the water utility should decide the level of equipment based on their water quality concerns. Please provide direction as to the level of analysis and design that should be included.

Mixing and circulation vary dramatically with the design of the tank. It is the design engineer's responsibility to address the issue. Guidance added to include other possible options for mixing.

R309-545-11(1) Note: Finding NFS 61 compliant equipment remains very difficult although it is very slowly getting better . Many AWWA products do not necessary have NSF 61 certification. This is especially true for high pressure pump station equipment and valve vaults, and for specific types of equipment. I would rather see the NSF 61 requirement softened in favor of the new low lead law and AWWA certification when available.

No changes. AWWA does not have a certification. NSF 61 Annex G includes the new lead law.

R309-545-11(2) *Curing Procedures ~~Time~~ and for Tanks with Volatile Organic Compound Coatings*

(d) Prior to placing a drinking water storage tank in service that has a volatile organic compound coating, an analysis for volatile organic compounds from water contained therein may be required to verify that no such compounds have leached into the water.

No changes- Implied in the content of the section.

R309-545-17 Note: For small water system, I have seen them turn on/off pumps manually. Automatic controls may not be needed in some cases.

Guidance added: "Some tanks should have automatic flow control devices because of the size and complexity of the system, while other smaller systems may monitor tank levels manually. Level controls should be adequate to assure that the distribution system and tank will not run out of water."

Agenda Item 6(B)

PROPOSED SUBSTANTIVE CHANGES FOR RULE R309-550

It has been several years since Rule *R309-550, Transmission and Distribution Pipelines*, was reviewed and revised as a whole. This rule contains several outdated and incorrect references to AWWA standards. Recently the DDW staff reviewed *R309-550* and the following recommendations have been suggested by the staff and others.

The proposed modifications to *R309-550* include the following:

1. Add the requirement for pressure reducing valves (PRV) stations on new water distribution lines when the water pressure exceeds 150 psi.
2. Revise the guidance paragraph on recommended operating pressures to be between 60 and 100 psi.
3. Modify the Hydraulic Analysis section to reflect hydraulic modeling rule requirements when applicable.
4. Clarify the minimum pipeline size by use.
5. Modify the rule language pertaining to fire protection and fire hydrants to reflect the requirements of the State Fire Marshall.
6. Add the requirement for special design on community systems in areas of geologic hazard.
7. Revise to include the new Federal requirement for “lead-free” materials.
8. Clarify the chamber drainage requirements.
9. Add a new section on Control Valve Stations including PRVs, backflow devices, and meters.
10. Revise the minimum separation standards and add specific requirements for allowing sewer and water lines to be closer together under certain circumstances.
11. Add installation standards for HDPE and steel pipes.
12. Clarify the pipe design criteria for Surface Water Crossings.
13. Add a guidance paragraph to clarify that fire sprinkler booster pumps are not considered individual home booster pumps that would be used regularly.
14. Eliminate the redundant section on exceptions.
15. Make miscellaneous changes to correct formatting, and grammar and to make the intent of the rule more easily understood.
16. Correct numerous outdated and incorrect references.

Two versions of the R309-545 revision are enclosed:

- The Division of Administrative (DAR) Rules maintains the official version of the rules and oversees the rulemaking process. The official rulemaking document of the R309-545 revision is in a specific format required by DAR. The DAR format does not contain any indentation. And the DAR format uses strikeout for deleted words and underline for added words.
- In addition to the DAR version, the Division of Drinking Water (DDW) has chosen to provide a DDW version of the rule to the public. The rule content of the DDW version is the same as the DAR version. However, the DDW version is formatted for easier reading (with

indentation) and contains DDW's interpretations of the rule (in the form of guidance paragraphs). These guidance paragraphs are not considered part of the official rule.

Staff Recommendation: The Staff, believing that the above mentioned changes to R309-550 are substantive, asks the Board to review the proposed changes and, if they agree, authorize the staff to start the rulemaking process and file the proposed rule amendments for publication in the Utah Bulletin.

R309. Environmental Quality, Drinking Water.

R309-550. Facility Design and Operation: Transmission and Distribution Pipelines.

R309-550-1. Purpose.

The purpose of this rule is to provide specific requirements for the design and installation of transmission and distribution pipelines ~~[which]~~that are utilized to deliver ~~[culinary]~~drinking water to facilities of public drinking water systems or to consumers.

It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation, and maintenance of public drinking water system facilities. These rules are intended to assure that ~~[such]~~these facilities are reliably capable of supplying adequate quantities of water, which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-550-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with Title 63G, Chapter 3 of the same, known as the Administrative Rulemaking Act.

R309-550-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-550-4. General.

Transmission and distribution pipelines shall be designed, constructed and operated to convey adequate quantities of water at ample pressure, while maintaining water quality.

R309-550-5. Water Main Design.

(1) Distribution System Pressure.

~~(a) The distribution system shall be designed to maintain minimum pressures as required in R309-105-9 ~~[+at ground level+]~~ at ~~[all]~~ points of connection, under all conditions of flow~~[7]~~. ~~[but especially during peak day flow conditions, including fire flows.]~~~~

~~(b) When static pressure exceeds 150 psi in new distribution water lines, pressure reducing devices shall be provided on mains in the distribution system where service connections exist.~~

(2) ~~[Assumed]Design~~ Flow Rates.

Flow rates ~~[to be assumed]~~used when designing or analyzing distribution systems shall ~~[be]meet the minimum requirements [as given]~~ in R309-510. ~~[of these rules.]~~

(3) ~~[Computerized Network]Hydraulic~~ Analysis.

~~(a) All water mains shall be sized ~~[after]~~following a hydraulic analysis based on flow demands and pressure requirements. ~~[If the calculations needed to conduct this hydraulic analysis are complex, a computerized network analysis shall be performed to verify that the distribution system will be capable of meeting the requirements of this rule.]~~~~

~~(b) Where improvements will upgrade more than 50% of an existing distribution system, or where a new distribution system is proposed,~~

a hydraulic analysis of the entire system shall be prepared and submitted for review prior to plan approval.

(c) Some projects require a hydraulic model. The Division may require submission of a hydraulic modeling report and/or certification, as outlined in R309-511, prior to plan approval.~~[In the analysis and design of water distribution systems, the following Hazen-William coefficients shall be used: PVC pipe = 140; Ductile Iron Pipe = 120; Cement Mortar Lined Ductile Iron Pipe = 130 to 140.]~~

(4) Minimum Water Main Size.

For water mains not connected to fire hydrants, the minimum line size shall be 4[-] inches in diameter[-], unless it serves picnic sites, parks, semi-developed camps, primitive camps, or roadway rest-stops. Minimum water main size, serving a fire hydrant lateral, shall be 8[-] inches in diameter unless a hydraulic analysis indicates that required flow and pressures can be maintained by ~~[smaller]~~ 6-inch lines.

(5) Fire Protection.

~~[If]~~ When a public water system is required to provide water for fire ~~[suppression]~~ flow by the local fire ~~[authority]~~ code official, or if the system has installed fire hydrants on existing distribution mains for that purpose:

(a) The design of the distribution system shall be consistent with the fire flow requirements as determined by the local fire code official.~~[Appendix B of the 2003 International Fire Code. As specified in this code, minimum fire-flow requirements are:]~~

~~[(i) 1000 gpm for one and two family dwellings with an area of less than 3600 square feet.]~~

~~[(ii) 1500 gpm or greater for all other buildings.]~~

(b) The location of fire hydrants shall be consistent with ~~[Appendix C of the 2003 International Fire Code. As specified in this code, average spacing between hydrants must be no greater than 500 ft.]~~ the requirements of the State adopted fire code and as determined by the local fire code official.

~~[(c) An exception to the fire protection requirements of (a) and (b) may be granted if a suitable statement is received from the local fire protection authority.~~

~~[(d) Water mains not designed to carry fire flows shall not have fire hydrants connected to them.]~~

~~[(e)]~~ (c) The pipe network design shall permit fire flows to be met at ~~[The design engineer shall verify that the pipe network design permits fire-flows to be met at]~~ [R]representative locations while minimum pressures as required in R309-105-9 are maintained at all times and at all points in the distribution system.

(d) Fire hydrant laterals shall be a minimum of 6 inches in diameter.

~~[(f) As a minimum, the flows to be assumed during a fire-flow analysis shall be the "peak day demand" plus the fire flow requirement.]~~

(6) Geologic Considerations.

The character of the soil through which water mains are to be laid shall be considered. ~~[This information shall accompany any submittal for a pipeline project.]~~ Special design and burial techniques shall be employed for Community water systems in areas of geologic hazard (e.g., slide zones, fault zones, river crossings,

etc.)

(7) Dead Ends.

(a) In order to provide increased reliability of service and reduce head loss, dead ends shall be minimized by making appropriate tie-ins whenever practical.

(b) Where dead-end mains occur, they shall be provided with a fire hydrant if flow and pressure are sufficient, or with an approved flushing hydrant or blow-off for flushing purposes. Flushing devices shall be sized to provide flows ~~[which]~~that will give a velocity of at least 2.5 fps in the water main being flushed. No flushing device shall be directly connected to any sewer.

(8) Isolation Valves.

Sufficient valves shall be provided on water mains so that inconvenience and sanitary hazards will be minimized during repairs.

Valves shall be located at not more than 500 foot intervals in commercial districts and at not more than one block or 800 foot intervals in other districts. Where systems serve widely scattered customers and where future development is not expected, the valve spacing shall not exceed one mile.

(9) Corrosive Soils and Waters.

The design engineer shall consider the materials to be used when corrosive soils or waters will be encountered.

(10) Special Precautions in Areas of [Groundwater] Contamination ~~[by Organic Compounds]~~.

Where distribution systems are installed in areas of [groundwater] contamination~~[ed by organic compounds]~~:

(a) ~~[P]~~ pipe and joint materials, which are not subject to contamination such as permeation of the organic compounds, shall be used~~[-]; and,~~

(b) ~~[N]~~non-permeable materials shall be used for all portions of the system including water mains, service connections, and hydrant leads.

(11) ~~[Separation of]~~ Water Mains ~~[from]~~and Other Sources of Contamination.

Design engineers shall exercise caution when locating water mains at or near certain sites such as sewage treatment plants or industrial complexes. Individual septic tanks shall be located and avoided. The engineer shall contact the Division to establish specific design requirements for locating water mains near any source of contamination.

R309-550-6. Component Materials and Design.

(1) ANSI/NSF Standard for Health Effects.

All materials ~~[which]~~that may come in contact with drinking water, including pipes, gaskets, lubricants and O-Rings, shall be ANSI-certified as meeting the requirements of NSF Standard 61, Drinking Water System Components - Health Effects. To permit field-verification of this certification, all ~~[such]~~ components shall be appropriately stamped with the NSF logo.

(2) ~~[Restrictions on]~~Asbestos and Lead.

(a) The use of asbestos cement pipe shall not be allowed.

(b) Pipes and pipe fittings installed after January 4, 2014, ~~[containing more than 8% lead shall not be used. Lead tip gaskets shall not be used. Repairs to lead joint pipe shall be made using~~

alternative methods.] are required to be "lead free" in accordance with Section 1417 of the Federal Safe Drinking Water Act. They shall be certified as meeting ANSI/NSF 372 or Annex G of ANSI/NSF 61.

(3) [AWWA] Standards for Mechanical Properties.

Pipe, joints, fittings, valves, and fire hydrants shall conform to ANSI/NSF Standard 61 [or Standard 14], and applicable sections of [ANSI]/AWWA Standards C104-A21.4-0[3]8 through C550-05 and C900-07 through C950-07.

(4) Used Materials.

Only materials [which]that have been used previously for conveying [potable]drinking water may be reused. Used materials shall meet the above standards, be thoroughly cleaned, and be restored [practically] to their original condition.

(5) Fire Hydrants [Design].

(a) Hydrant drains shall not be connected to, or located within, 10 feet of sanitary sewers, and where possible [or] storm drains.

(b) Auxiliary valves shall be installed in all hydrant leads.

(c) Hydrant drains shall be installed with a gravel packet or dry well unless the natural soils will provide adequate drainage.

(6) Air Relief Valves and Blow-Offs.

(a) At high points in water mains where air can accumulate, provisions shall be made to remove air by means of hydrants or air relief valves. [Automatic air relief valves shall not be used in situations where flooding may occur.]

(b) The open end of the air relief vent pipe from automatic valves shall be provided with a #14 mesh, non-corrodible screen and a downward elbow, and where possible, be extended to at least one foot above grade. Alternatively, the open end of the pipe may be extended to as little as one foot above the top of the pipe if the valve's chamber is not subject to flooding, or if it meets the requirements of (7) Chamber Drainage.

(c) Blow-offs or air relief valves shall not be connected directly to any sewer.

(d) Adequate hydrants or blow-offs shall be provided to allow periodic flushing and cleaning.

(e) The air relief valve shall be placed to prevent problems due to freezing. A shut-off valve shall be provided to permit servicing of any air relief valve.

[(a) Air Relief Valve Vent Piping.]

[The open end of an air relief vent pipe from automatic valves shall, where possible as determined by public water system management, be extended to at least one foot above grade and provided with a screened (#14 mesh, non-corrodible) downward elbow. Alternately, the open end of the pipe may be extended to as little as one foot above the top of the pipe if the valve's chamber is not subject to flooding and provided with a drain-to-daylight (See (b) below). Blow-offs or air relief valves shall not be connected directly to any sewer.]

[(b)] (7) Chamber Drainage.

(a) Chambers, pits, or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be connected directly to any storm drain or sanitary sewer.

(b) ~~[They]~~ Chambers shall be provided with a drain to daylight ~~[-]~~, if possible. Where this is not possible, underground gravel-filled absorption pits may be used if the site is not subject to flooding and conditions will assure adequate drainage. Sump pumps may also be considered if a drain to daylight or absorption pit is not feasible. ~~[Where a chamber contains an air relief valve, and it is not possible to provide a drain to daylight, the vent pipe from the valve shall be extended to at least one foot above grade (See (a) above). Only when it is both impossible to extend the vent pipe above grade, and impossible to provide a drain to daylight may a gravel-filled sump be utilized to provide chamber drainage (assuming local ground conditions permit adequate drainage without ground water intrusion).]~~

(8) Control Valve Stations

(a) Pressure Reducing Valves (PRVs)

(i) Isolation Valves shall be installed on either side of the pressure reducing valve.

(ii) Where variable flow conditions will be encountered, consideration should be given to providing a low-flow and a high-flow line.

(a) Backflow Devices

Installation of Backflow devices shall conform to the State-adopted plumbing code.

(b) Meters

Meter installation shall conform to the State-adopted plumbing code and local jurisdictional standards.

R309-550-7. Separation of Water Mains and Transmission Lines from Sewers ~~[and Other Pollution Sources].~~

(1) Basic Separation Standards.

(a) The horizontal distance between ~~[pressure]~~ water ~~[mains]~~ lines and sanitary sewer lines shall be at least ~~[ten]~~ 10 feet. Where a water main and a sewer line must cross, the water main shall be at least 18 inches above the sewer line. Separation distances shall be measured edge-to-edge (i.e. from the nearest edges of the facilities).

(b) Water mains and sewer lines shall not be installed in the same trench.

~~[(2) Exceptions to Basic Separation Standards.]~~

(c) Where ~~[L]~~ local conditions make it impossible to ~~[-]~~ ~~[such as available space, limited slope, existing structures, etc., may create a situation where there is no alternative but to]~~ install water ~~[mains]~~ or sewer lines at separation distances ~~[a distance less than that]~~ required by ~~s[S]~~ subsection (~~[1]~~a), above ~~[-]~~, and the sewer pipes are in good condition, and there is not high groundwater in the area, it may be acceptable if the design includes a minimum horizontal separation of 6 feet and a minimum vertical clearance of 18 inches with the waterline being above. In order to determine whether the design is acceptable, the following information shall be submitted as part of the plans for review. ~~[Exceptions to the rule may be provided by the Director if it can be shown that the granting of such an exception will not jeopardize the public health.]~~

(i) reason for not meeting the minimum separation standard;

(ii) location where the water and sewer line separation is not being met;

(iii) horizontal and vertical clearance that will be achieved;

(iv) sewer line information including pipe material, size, age, type of joints, thickness or pressure class, whether the pipe is pressurized or not, etc.;

(v) water line information including pipe material, size, age, type of joints, thickness or pressure class, etc.;

(vi) ground water and soil conditions; and,

(vii) any mitigation efforts.

(d) If the basic separation standards as outlined in subsections (a) through (c) above cannot be met, an exception to the rule can be applied for with additional mitigation measures to protect public health, in accordance with R309-105-6(2)(b).

(3) Special Provisions.

The following special provisions apply to all situations:

(a) The basic separation standards are applicable under normal conditions for sewage collection lines and water distribution mains.

More stringent requirements may be necessary if conditions such as high groundwater exist.

~~[(b) Sewer lines shall not be installed within 25 feet horizontally of a low head (5 psi or less pressure) water main.]~~

~~(e)(b) [Sewer lines shall not be installed within 50 feet horizontally of any transmission line segment which may become unpressurized.]~~ All water transmission lines that may become unpressurized shall not be installed within 20 feet of sewer lines.

~~[(d) New water mains and sewers shall be pressure tested where the conduits are located ten feet apart or less.]~~

~~[(e)]~~ (c) In the installation of water mains or sewer lines, measures shall be taken to prevent or minimize disturbances of the existing line.

~~[(f)]~~ (d) Special consideration shall be given to the selection of pipe materials if corrosive conditions are likely to exist or where the minimum separation distances cannot be met. These conditions may be due to soil type, groundwater, and/or the nature of the fluid conveyed in the conduit, such as a septic sewage which produces corrosive hydrogen sulfide.

~~[(g)]~~ (e) Sewer Force Mains

~~[(i) Sewer force mains shall not be installed within ten feet (horizontally) of a water main.~~

~~(ii) When a sewer force main must cross a water line, the crossing shall be as close as practical to the perpendicular. The sewer force main shall be at least 18 inches below the water line.]~~

~~[(iii)]~~ (i) When a new sewer force main crosses under an existing water main, all portions of the sewer force main within ~~ten~~ 10 feet (horizontally) of the water main shall be enclosed in a continuous sleeve.

~~[(iv)]~~ (ii) When a new water main crosses over an existing sewer force main, the water main shall be constructed of pipe materials with a minimum rated working pressure of 200 psi or equivalent pressure rating.

(4) Water Service Laterals Crossing Sewer Mains and Laterals.

Water service laterals shall conform to all requirements given herein for the separation of water and sewer lines.

R309-550-8. Installation of Water Mains.

(1) Standards.

(a) The specifications shall incorporate the provisions of the manufacturer's recommended installation procedures or the following applicable standards:

(i) For ductile iron pipe, AWWA Standard C600-~~10~~[05], Installation of Ductile Iron Water Mains and Their Appurtenances;

(ii) For PVC pipe, ASTM D2774, Recommended Practice for Underground Installation of Thermoplastic Pressure Piping and PVC Pipe and AWWA Manual of Practice M23, 2003;

(iii) For HDPE pipe, ASTM D2774, Recommended Practice for Underground Installation of Thermoplastic Pressure Piping and AWWA Manual of Practice M55, 2006; and,

(iv) For Steel pipe, AWWA Standard C604-11, Installation of Buried Steel Water Pipe- 4 inch and Larger.

~~[(b)The provisions of the following publication shall be followed for PVC pipe design and installation:~~

~~—PVC Pipe — Design and Installation, AWWA Manual M23, 2002, published by the American Water Works Association]~~

(2) Bedding.

A continuous and uniform bedding shall be provided in the trench for all buried pipe. Stones larger than the backfill materials described below shall be removed for a depth of at least ~~[six]~~6 inches below the bottom of the pipe.

(3) Backfill.

Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. The material and backfill zones shall be as specified by the standards referenced in Subsection (1), above. As a minimum:

(a) ~~[F]~~for plastic pipe, backfill material with a maximum particle size of 3/4 inch shall be used to surround the pipe; and, [-]

(b) ~~[F]~~for ductile iron pipe, backfill material shall contain no stones larger than 2 inches.

(4) Dropping Pipe into Trench.

Under no circumstances shall the pipe or accessories be dropped into the trench.

(5) Burial Cover.

All water mains shall be covered with sufficient earth or other insulation to prevent freezing, unless they are part of a non-community system that can be shut-down and drained during winter months when temperatures are below freezing.

(6) Thrust Blocking.

All tees, bends, plugs, and hydrants shall be provided with ~~[reaction]~~thrust blocking, anchoring, tie rods, or restraint joints designed to prevent movement. Restraints shall be sized to withstand the forces experienced.

(7) Pressure and Leakage Testing.

All types of installed pipe shall be pressure tested and leakage tested in accordance with AWWA Standard C600-~~10~~[99].

(8) Surface Water Crossings.

(a) Above Water Crossings

The pipe shall be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement.

(b) Underwater Crossings

(i) A minimum cover of ~~[two]~~ 2 feet or greater, as local conditions may dictate, shall be provided over the pipe.

(ii) When crossing water courses ~~[which]~~ that are greater than 15 feet in width, the following shall be provided:

~~[(+)]~~ (A) ~~[The p]~~ Pipe with joints shall be of special construction, having restrained joints for any joints within the surface water course and flexible restrained joints at both edges of the water course.

~~[(+)]~~ (B) Isolating ~~[V]~~ valves shall be provided ~~[at]~~ on both ~~[ends]~~ sides of the water crossing ~~[s]~~ at locations not subject to high ground water or flooding, so that the section can be isolated for testing or repair. ~~[÷ the valves shall be easily accessible, and not subject to flooding; and the valve nearest to the supply source shall be in a manhole.]~~

~~[(+)]~~ (C) A means shall be provided, such as a sampling tap, not subject to flooding, to allow for representative water quality testing on the upstream and downstream side of the crossing. ~~[Permanent taps shall be made on each side of the valve within the manhole to allow insertion of testing equipment to determine leakage and for sampling purposes.]~~

~~[(+)]~~ (D) A means shall be provided to pressure test the underground water crossing pipe.

(9) Sealing Pipe Ends During Construction.

The open ends of all pipelines under construction shall be covered and effectively sealed at the end of the day's work.

(10) Disinfecting Water ~~[Distribution Systems]~~ Lines.

All new water mains or appurtenances shall be disinfected in accordance with AWWA Standard C651-05 or a method approved by the Director. The specifications shall include detailed procedures for the adequate flushing, disinfection and microbiological testing of all water mains. On all new and extensive distribution system construction, evidence of satisfactory disinfection shall be provided to the Division. Samples for coliform analyses shall be collected after disinfection is complete and the system is refilled with ~~[potable]~~ drinking water. A standard heterotrophic plate count is advisable. The use of water for ~~[culinary]~~ public drinking water purposes shall not commence until the bacteriologic tests indicate the water ~~[to be]~~ is free from contamination.

R309-550-9. Cross Connections and Interconnections.

(1) Physical Cross Connections.

There shall be no physical cross connections between the distribution system and pipe, pumps, hydrants, or tanks ~~[which are supplied from, or which]~~ that may be ~~[supplied or]~~ contaminated from any source, including pressurized irrigation. ~~[except as approved by the Director.]~~

(2) Recycled Water.

Neither steam condensate nor cooling water from engine jackets or other heat exchange devices shall be returned to the ~~[potable]~~ drinking water supply.

(3) System Interconnects.

The ~~[approval of the Director shall be obtained for]~~

interconnections between different ~~[potable]~~drinking water ~~[supply]~~ systems shall be reviewed and approved by the Director.

R309-550-10. Water Hauling.

(1) Community Water Systems.

Water hauling is not an acceptable permanent ~~[method]~~ source for ~~[culinary]~~drinking water distribution in community water systems.

~~[Proposals for water hauling shall be submitted to and approved by the Director.]~~

~~[(1)](2) [Exceptions.]Non-community Systems.~~

The Director may allow ~~[its]water hauling [use]~~ for non-community public water ~~[supplies]systems by special approval~~ if:

(a) ~~c[C]onsumers [could] can~~ not otherwise be supplied with good quality drinking water~~[.]; or,~~

(b) ~~t[T]he~~ nature of the development, or ground conditions, are such that the placement of a pipe distribution system is not justified.

Proposals for water hauling shall be submitted to, and approved by, the Director.

~~[(2)](3) Emergencies.~~

Water [H]hauling [may also be necessary as]may be a temporary means of providing ~~[culinary]drinking~~ water in an emergency.

R309-550-11. Service Connections and Plumbing.

(1) Service Taps.

Service taps shall ~~[be made so as to]~~ not jeopardize the ~~[sanitary]~~ quality of the system's water.

(2) Plumbing.

~~[(a) Service lines shall be capped until used.]~~

~~[(b)](a)~~ Water services and plumbing shall conform to the Utah Plumbing Code. ~~[Solders and flux containing more than 0.2% lead and pipe and pipe fittings containing more than 8% lead shall not be used.]~~

(b) Pipes and pipe fittings installed after January 4, 2014, are required to be "lead-free" in accordance with Section 1417 of the federal Safe Drinking Water Act. They shall be certified meeting the ANSI/NSF 372 or Annex G of ANSI/NSF 61.

(3) Individual Home Booster Pumps.

Individual booster pumps shall not be allowed for any individual service from the public water supply mains. Exceptions to the rule may be ~~[provided]granted~~ by the Director if it can be shown that the granting of such an exception will not jeopardize the public health.

(4) Service Lines.

(a) Service lines shall be capped until connected for service.

(b) The portion of the service line under the control of the water [supplier]system is considered to be part of the distribution system. [and shall comply with all requirements given herein.]

(5) Service Meters and Building Service Line.

Connections between the service meter and the home shall be in accordance with the Utah Plumbing Code.

~~[(6) Allowable Connections.]~~

~~—All dwellings or other facilities connected to a public water supply shall be in conformance with the Utah Plumbing Code.]~~

R309-550-12. Transmission Lines.

(1) Unpressurized Flows.

Transmission lines shall conform to all applicable requirements in this rule. Transmission line design shall minimize unpressurized flows.

(2) Proximity to Concentrated Sources of Pollution.

A water supplier shall not route an unpressurized transmission line any closer than ~~[fifty]~~20 feet to any concentrated source of pollution (~~[i.e.]~~e.g., septic tanks and drain fields, garbage dumps, pit privies, sewer lines, feed lots, etc.). Furthermore, unpressurized transmission lines shall not be placed in boggy areas or areas subject to the ponding of water.

~~[(3) Exceptions.~~

~~Where the water supplier cannot obtain a fifty foot separation distance from concentrated sources of pollution, it is permitted to use a Class 50 ductile iron pipe with joints acceptable to the Director. Reasonable assurance must be provided to assure that contamination will not be able to enter the unpressurized pipeline.]~~

R309-550-13. Operation and Maintenance.

(1) Disinfection After Line Repair.

The disinfection procedures of Section 4.7, AWWA Standard C651-05 shall be followed if any water main is cut into or repaired.

(2) Cross Connections.

The water ~~[supplier]~~ system shall not allow a connection ~~[which]~~that may jeopardize water quality. Cross connections are not allowed unless controlled by an approved and properly operating backflow prevention assembly. The requirements of the Utah Plumbing Code shall be met with respect to cross connection control and backflow prevention.

~~[Suppliers]~~Water systems shall maintain an inventory of each pressure vacuum breaker assembly, spill-resistant vacuum breaker assembly, double check valve assembly, reduced pressure principle backflow prevention assembly, and high hazard air gap used by their customers, and a service/inspection record for each such assembly.

Backflow prevention assemblies shall be inspected and tested at least once a year, by an individual certified for such work. This responsibility may be borne by the water system or the water system management may require that the customer ~~[having]~~with the backflow prevention assembly be responsible for having the device tested.

~~[Suppliers]~~Water systems serving areas also served by a pressurized irrigation system shall ~~[prevent]~~not allow cross connections between the two. ~~[Requirements for pressurized irrigation systems are outlined in Section 19-4-112 of the Utah Code.]~~

(3) ANSI/NSF Standards.

All pipe and fittings used in routine operation and maintenance shall be ANSI-certified as meeting NSF Standard 61 or Standard 14.

(4) Seasonal Operation.

Water systems operated seasonally shall be disinfected and flushed according to ~~[the techniques given in]~~ AWWA Standard C651-05 for pipelines and AWWA Standard C652-~~[02]~~11 for storage facilities prior to each season's use. A satisfactory bacteriologic sample shall be ~~[achieved]~~obtained prior to use. During the non-use period, care shall be taken to close all openings into the system.

KEY: drinking water, transmission and distribution pipelines,
connections, water hauling
Date of Enactment or Last Substantive Amendment: March 8, 2006
Notice of Continuation: March 22, 2010
Authorizing, and Implemented or Interpreted Law: 19-4-104

R309-550. Facility Design and Operation: Transmission and Distribution Pipelines.

R309-550-1. Purpose.

The purpose of this rule is to provide specific requirements for the design and installation of transmission and distribution pipelines ~~which that~~ are utilized to deliver ~~culinary~~ drinking water to facilities of public drinking water systems or to consumers. It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation, and maintenance of public drinking water system facilities. These rules are intended to assure that ~~such these~~ facilities are reliably capable of supplying adequate quantities of water, which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-550-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with Title 63G, Chapter 3 of the same, known as the Administrative Rulemaking Act.

R309-550-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

R309-550-4. General.

Transmission and distribution pipelines shall be designed, constructed, and operated to convey adequate quantities of water at ample pressure, while maintaining water quality.

R309-550-5. Water Main Design.

(1) Distribution System Pressure.

(a) The distribution system shall be designed to maintain minimum pressures as required in R309-105-9 ~~(at ground level) at all~~ points of connection, under all conditions of flow, ~~but especially during peak day flow conditions, including fire flows.~~

(b) When static pressure exceeds 150 psi in new distribution water lines, pressure reducing devices shall be provided on mains in the distribution system where service connections exist.

Guidance: The normal working pressure in the distribution system ~~shall~~should be between ~~6040~~ and ~~10060~~ psi. ~~When static pressure exceed 80 psi, pressure-reducing devices shall be provided on mains in the distribution system, or individual home pressure-reducing valves shall be installed per the Utah Plumbing Code. The requirement for PRV's to be installed when pressures exceed 150 psi only applies to new water pipelines. Systems should implement an operation program to protect water users from excessive pressures.~~

(2) Assumed Design Flow Rates.

Flow rates ~~to be assumed used~~ when designing or analyzing distribution systems shall ~~be meet the minimum requirements as given in R309-510 of these rules.~~

(3) Computerized Network Hydraulic -Analysis.

(a) All water mains shall be sized ~~after following~~ a hydraulic analysis based on flow demands and pressure requirements. ~~If the calculations needed to conduct this hydraulic analysis are complex, a computerized network analysis shall be performed to verify that the distribution system will be capable of meeting the requirements of this rule.~~

(b) Where improvements will upgrade more than 50% of an existing distribution system, or where a new distribution system is proposed, a hydraulic analysis of the entire system shall be prepared and submitted for review prior to plan approval.

(c) ~~Some projects require a hydraulic model. The Division may require submission of a hydraulic modeling report and/ or certification, as outlined in R309-511, prior to plan approval. In the analysis and design of water distribution systems, the following Hazen-William coefficients shall be used: PVC pipe = 140; Ductile Iron Pipe = 120; Cement Mortar Lined Ductile Iron Pipe = 130 to 140.~~

(4) Minimum Water Main Size.

For water mains not connected to fire hydrants, the minimum line size shall be ~~4-~~4-~~inches~~in diameter, ~~unless it serves picnic sites, parks, semi-developed camps, primitive camps or roadway rest-stops.~~ Minimum water main size, serving a fire hydrant lateral, shall be ~~8-~~8-~~inches~~in diameter unless a hydraulic analysis indicates that required flow and pressures can be maintained by ~~smaller 6-inch~~ lines.

Guidance: Generally, velocity in a water main ~~shall~~should not exceed 5 fps. Mains ~~shall~~should be designed with sufficient excess capacity to provide for anticipated future connections.

(5) Fire Protection.

~~If-When~~ a public water system is required to provide water for fire ~~suppression-flow~~ by the local fire ~~authoritycode official~~, or if the system has installed fire hydrants on existing distribution mains for that purpose:

(a) The design of the distribution system shall be consistent with ~~the fire flow requirements as determined by the local fire code official. Appendix B of the 2003 International Fire Code. As specified in this code, minimum fire flow requirements are:~~

~~(i) 1000 gpm for one and two family dwellings with an area of less than 3600 square feet.~~

~~(ii) 1500 gpm or greater for all other buildings.~~

~~*Guidance: The State Fire Marshall's office has stated that "The State adopted fire code recognizes that water mains intended for firefighting need not become subject to retroactive fire flow requirements. As such, an existing system is considered code compliant as long as it is maintained properly and new construction does not alter the fire flow requirement. Water companies are encouraged to make improvements incrementally to avoid a possible moratorium on development due to lack of water, i.e., fire flow."*~~

(b) The location of fire hydrants shall be consistent with ~~Appendix C of the 2003 International Fire Code. As specified in this code, average spacing between hydrants must be no greater than 500 ft.~~the requirements of the State adopted fire code and as determined by the local fire code official.

~~*Guidance: Generally, individual hydrant spacing may range from 350-200 to 500 feet depending on the area being served. Hydrants shall be provided at each street intersection and at intermediate points between intersection. The planning of hydrant locations shall-should be a cooperative effort between the water utility and local fire officials.*~~

~~(c) An exception to the fire protection requirements of (a) and (b) may be granted if a suitable statement is received from the local fire protection authority.~~

~~(d) Water mains not designed to carry fire flows shall not have fire hydrants connected to them.~~

~~(c)~~ The pipe network design shall permit fire flows to be met at Rrepresentative locations while minimum pressures as required in R309-105-9 are maintained at all times and at all points in the distribution system.

~~(e)~~(d) Fire hydrant laterals shall be a minimum of 6 inches in diameter.

~~*Guidance: For guidance on conducting this analysis, refer to AWWA Manual M31, Distribution System Requirements for Fire Protection.*~~

~~(f) As a minimum, the flows to be assumed during a fire flow analysis shall be the "peak day demand" plus the fire flow requirement.~~

~~*Guidance: See section R309-510-5 for information on how to estimate the "peak day demand" for various types of public water systems.*~~

(6) Geologic Considerations.

The character of the soil through which water mains are to be laid shall be considered. ~~This information shall accompany any submittal for a pipeline project. Special design and burial techniques shall be employed for Community water systems in areas of geologic hazard (e.g., slide zones, fault zones, river crossings, etc.)~~

~~*Guidance: If possible, pipelines shall not be laid in areas of unusual geologic hazard (e.g. slide zones, fault zones, etc.) Where these areas are impossible to avoid, special design and burial techniques shall be employed. IN areas of high earthquake hazard, it is recommended that pipe be of a type least vulnerable to damage by earthquake, such as ductile-iron and PVC pipe.*~~

~~*Guidance: Water supply conduits and major service lines crossing known fault areas should be either designed to accommodate significant differential movement of the ground, or be valved immediately above and below the points of the fault crossing to allow control of water flow, in case of pipe rupture during an earthquake event.*~~

~~*Guidance: Water systems should be designed to provide alternative flow paths for major conduits in regions of known geologic hazards.*~~

(7) Dead Ends.

(a) In order to provide increased reliability of service and reduce head loss, dead ends shall be minimized by making appropriate tie-ins whenever practical.

(b) Where dead-end mains occur, they shall be provided with a fire hydrant if flow and pressure are sufficient, or with an approved flushing hydrant or blow-off for flushing purposes. Flushing devices shall be sized to provide flows ~~which that~~ will give a velocity of at least 2.5 fps in the water main being flushed. No flushing device shall be directly connected to any sewer.

(8) Isolation Valves.

Sufficient valves shall be provided on water mains so that inconvenience and sanitary hazards will be minimized during repairs. Valves shall be located at not more than 500-foot intervals in commercial districts and at not more than one block or 800-foot intervals in other districts. Where systems serve widely scattered customers, and where

future development is not expected, the valve spacing shall not exceed one mile.

(9) Corrosive Soils and Waters.

The design engineer shall consider the materials to be used when corrosive soils or waters will be encountered.

~~*Guidance: Where severe corrosion is indicated, approved plastic pipe is recommended.*~~

(10) Special Precautions in Areas of Groundwater Contamination by Organic Compounds.

Where distribution systems are installed in areas of groundwater contaminationed by organic compounds:

- (a) ~~P~~pipe and joint materials, which are not subject to contamination such as permeation of the organic compounds, shall be used; and,
- (b) ~~N~~non-permeable materials shall be used for all portions of the system including water mains, service connections, and hydrant leads.

(11) Separation of Water Mains from and Other Sources of Contamination.

Design engineers shall exercise caution when locating water mains at or near certain sites such as sewage treatment plants or industrial complexes. Individual septic tanks shall be located and avoided. The engineer shall contact the Division to establish specific design requirements for locating water mains near any source of contamination.

~~*Guidance: It is recommended that utility lines are clearly identified and visually different from one another. Consideration shall be given to providing appropriate separation between water and other utilities for operational and contamination reasons.*~~

R309-550-6. Component Materials and Design.

(1) ANSI/NSF Standard for Health Effects.

All materials ~~which that~~ may come in contact with drinking water, including pipes, gaskets, lubricants and O-Rings, shall be ANSI-certified as meeting the requirements of NSF Standard 61, Drinking Water System Components - Health Effects. To permit field-verification of this certification, all ~~such~~ components shall be appropriately stamped with the NSF logo.

(2) Restrictions on Asbestos and Lead.

- (a) The use of asbestos cement pipe shall not be allowed.

~~(b) Pipes and pipe fittings installed after January 4, 2014, containing more than 8% lead shall not be used. Lead tip gaskets shall not be used. Repairs to lead joint pipe shall be made using alternative methods, are required to be “lead free” in accordance with Section 1417 of the Federal Safe Drinking Water Act. They shall be certified as meeting ANSI/NSF 372 or Annex G of ANSI/NSF 61.~~

~~***Guidance: The Community Fire Safety Act of 2013 exempts fire hydrants from the lead free requirements of Section 1417.***~~

(3) AWWA Standards for Mechanical Properties.

Pipe, joints, fittings, valves, and fire hydrants shall conform to ANSI/NSF Standard 61 ~~or Standard 14~~, and applicable sections of ANSI/AWWA Standards C104-A21.4-038 through C550-05 and C900-07 through C950-07.

(4) Used Materials.

Only materials ~~which that~~ have been used previously for conveying ~~potable drinking~~ water may be reused. Used materials shall meet the above standards, be thoroughly cleaned, and be restored ~~practically~~ to their original condition.

(5) Fire Hydrants Design.

~~***Guidance: Fire hydrants shall have a bottom valve size of at least five inches, one 4.5 inchumper nozzle and two 2.5 in nozzles.***~~

~~***Guidance: The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed in all hydrant leads.***~~

~~(a) Hydrant drains shall not be connected to, or located within, 10 feet of sanitary sewers, and where possible or storm drains.~~

~~(a)(b) Auxiliary valves shall be installed in all hydrant leads.~~

~~(c) Hydrant drains shall be installed with a gravel packet or dry well unless the natural soils will provide adequate drainage.~~

~~***Guidance: Hydrant drains shall be plugged. When the drains are plugged, the barrels shall be pumped dry after use during freezing weather. Where hydrant drains are not plugged, a gravel pocket or dry well shall be provided unless the natural soils will provide adequate drainage.***~~

(6) Air Relief Valves and Blow-offs.

(a) At high points in water mains where air can accumulate, provisions shall be made to remove air by means of hydrants or air relief valves. ~~Automatic air relief valves shall not be used in situations where flooding may occur.~~

~~(b) The open end of the air relief vent pipe from automatic valves shall be provided with a #14 mesh, non-corrodible screen and a downward elbow, and where possible, be extended to at least one foot above grade. Alternatively, the open end of the pipe may be extended to as little as one foot above the top of the pipe if the valve's chamber is not subject to flooding, or if it meets the requirements of (7) Chamber Drainage.~~

~~(c) Blow-offs or air relief valves shall not be connected directly to any sewer.~~

~~(d) Adequate hydrants or blow-offs shall be provided to allow periodic flushing and cleaning.~~

~~(e) The air relief valve shall be placed to prevent problems due to freezing. A shut-off valve shall be provided to permit servicing of any air relief valve.~~

~~*Guidance: The air relief valve shall be placed so as to prevent problems due to freezing. A shut-off valve shall be provided to permit servicing of any air relief valve.*~~

~~(a) — Air Relief Valve Vent Piping:~~

~~The open end of an air relief vent pipe from automatic valves shall, where possible as determined by public water system management, be extended to at least one foot above grade and provided with a screened (#14 mesh, non-corrodible) downward elbow. Alternately, the open end of the pipe may be extended to as little as one foot above the top of the pipe if the valve's chamber is not subject to flooding and provided with a drain to daylight (See (b) below). Blow-offs or air relief valves shall not be connected directly to any sewer.~~

~~Chamber Drainage:~~

(7) Chamber Drainage

~~(a) Chambers, pits, or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be connected directly to any storm drain or sanitary sewer.~~

~~(a)(b) They Chambers shall be provided with a drain to daylight, if possible. Where this is not possible, underground gravel-filled absorption pits may be used if the site is not subject to flooding and conditions will assure adequate drainage.~~

~~Sump pumps may also be considered if a drain to daylight or absorption pit is not feasible. Where a chamber contains an air relief valve, and it is not possible to provide a drain to daylight, the vent pipe from the valve shall be extended to at least one foot above grade (See (a) above). Only when it is both impossible to extend the vent pipe above grade, and impossible to provide a drain to daylight may a gravel-filled sump be utilized to provide chamber drainage (assuming local ground conditions permit adequate drainage without ground water intrusion).~~

~~*Guidance: PVC Pipe Considerations. Consideration shall be given to placing tracer tape on PVC pipe to permit location of the pipe by available detection equipment. Furthermore, systems subject to severe freezing episodes shall consider that a typical method for thawing pipe requires metal pipe.*~~

(8) Control Valve Stations

(a) Pressure Reducing Valves (PRV's)

(i) Isolation Valves shall be installed on either side of the pressure reducing valve.

(ii) Where variable flow conditions will be encountered, consideration should be given to providing a low-flow and a high-flow line.

(b) Backflow Devices

Installation of Backflow devices shall conform to the State-adopted plumbing code.

(c) Meters

Meter installation shall conform to the State-adopted plumbing code and local jurisdictional standards.

R309-550-7. Separation of Water Mains and Transmission Lines from Sewers ~~and Other Pollution Sources.~~

(1) Basic Separation Standards.

(a) The horizontal distance between ~~pressure-water mains-lines~~ and sanitary sewer lines shall be at least ~~ten~~10 feet. Where a water main and a sewer line must cross, the water main shall be at least 18 inches above the sewer line. Separation distances shall be measured edge-to-edge (i.e., from the nearest edges of the facilities).

(b) Water mains and sewer lines shall not be installed in the same trench.

~~(c2) Exceptions to Basic Separation Standards.~~

~~Where local conditions make it impossible to, such as available space, limited slope, existing structures, etc., may create a situation where there is no alternative but to install water mains or sewer lines at a distance less separation distances than that required by subsection (a), above, and the sewer pipes are in good condition, and there is not high groundwater in the area, it may be acceptable if the design includes a minimum horizontal separation of 6 feet and a minimum vertical clearance of 18 inches with the waterline being above. In order to determine whether the design is acceptable, the following information shall be submitted as part of the plans for review. Exceptions to the rule may be provided by the Director if it can be shown that the granting of such an exception will not jeopardize the public health.:~~

- ~~(i) reason for not meeting the minimum separation standard;~~
- ~~(ii) location where the water and sewer line separation is not being met;~~
- ~~(iii) horizontal and vertical clearance that will be achieved;~~
- ~~(iv) sewer line information including pipe material, size, age, type of joints, thickness or pressure class, whether the pipe is pressurized or not, etc.;~~
- ~~(v) water line information including pipe material, size, age, type of joints, thickness or pressure class, etc.;~~
- ~~(vi) ground water and soil conditions; and,~~
- ~~(vii) any mitigation efforts.~~

~~(d) If the basic separation standards as outlined in subsections (a) through (c) above cannot be met, an exception to the rule can be applied for with additional mitigation measures to protect public health, in accordance with R309-105-6(2)(b).~~

~~***Guidance: Consideration should be given to placing warning tape above the water lines and/ or sewer lines***~~

(3) Special Provisions.

The following special provisions apply to all situations:

(a) The basic separation standards are applicable under normal conditions for sewage collection lines and water distribution mains. More stringent requirements may be necessary if conditions such as high groundwater exist.

~~(b) Sewer lines shall not be installed within 25 feet horizontally of a low head (5 psi or less pressure) water main.~~

~~(c)(b) Sewer lines shall not be installed within 50 feet horizontally of any transmission line segment which may become unpressurized. All water~~

transmission lines that may become unpressurized shall not be installed within 20 feet of sewer lines.

~~(d) New water mains and sewers shall be pressure tested where the conduits are located ten feet apart or less.~~

~~(e)(c)~~ In the installation of water mains or sewer lines, measures shall be taken to prevent or minimize disturbances of the existing line.

~~(f)(d)~~ Special consideration shall be given to the selection of pipe materials if corrosive conditions are likely to exist or where the minimum separation distances cannot be met. These conditions may be due to soil type, groundwater, and/or the nature of the fluid conveyed in the conduit, such as a septic sewage which produces corrosive hydrogen sulfide

~~(g)(e)~~ Sewer Force Mains

~~(i) Sewer force mains shall not be installed within ten feet (horizontally) of a water main.~~

~~(ii) When a sewer force main must cross a water line, the crossing shall be as close as practical to the perpendicular. The sewer force main shall be at least 18 inches below the water line.~~

~~(iii)~~ When a new sewer force main crosses under an existing water main, all portions of the sewer force main within ~~ten~~10 feet (horizontally) of the water main shall be enclosed in a continuous sleeve.

~~(iv)~~ When a new water main crosses over an existing sewer force main, the water main shall be constructed of pipe materials with a minimum rated working pressure of 200 psi or equivalent pressure rating.

(4) Water Service Laterals Crossing Sewer Mains and Laterals.

Water service laterals shall conform to all requirements given herein for the separation of water and sewer lines.

R309-550-8. Installation of Water Mains.

(1) Standards.

(a) The specifications shall incorporate the provisions of the manufacturer's recommended installation procedures or the following applicable standards:

(i) For ductile iron pipe, AWWA Standard C600-1005, Installation of Ductile Iron Water Mains and Their Appurtenances;

(ii) For PVC pipe, ASTM D2774, Recommended Practice for Underground Installation of Thermoplastic Pressure Piping and PVC Pipe and AWWA Manual of Practice M23, 2003;

(iii) For HDPE pipe, ASTM D2774, Recommended Practice for Underground Installation of Thermoplastic Pressure Piping and AWWA Manual of Practice M55, 2006; and

(iv) For Steel pipe, AWWA Standard C604-11, Installation of Buried Steel Water Pipe- 4 inch and Larger

~~(b) The provisions of the following publication shall be followed for PVC pipe design and installation:~~

~~PVC Pipe — Design and Installation, AWWA Manual M23, 2002, published by the American Water Works Association~~

Guidance: Consideration should be given to placing tracer wire on plastic pipe to permit location of the pipe by available detection equipment.

(2) Bedding.

A continuous and uniform bedding shall be provided in the trench for all buried pipe. Stones larger than the backfill materials described below shall be removed for a depth of at least ~~six~~6 inches below the bottom of the pipe.

(3) Backfill.

Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. The material and backfill zones shall be as specified by the standards referenced in Subsection (1), above. As a minimum:

(a) ~~f~~For plastic pipe, backfill material with a maximum particle size of 3/4 inch shall be used to surround the pipe; ~~and-~~

(b) ~~f~~For ductile iron pipe, backfill material shall contain no stones larger than 2 inches.

(4) Dropping Pipe into Trench.

Under no circumstances shall the pipe or accessories be dropped into the trench.

(5) Burial Cover.

All water mains shall be covered with sufficient earth or other insulation to prevent freezing, unless they are part of a non-community system that can be shut-down and drained during winter months when temperatures are below freezing.

Guidance: Pipe ~~shall~~should be buried at least 12 inches below maximum expected frost penetration. The following is a list of reported pipe burial depths in Utah ~~which~~ that may serve as a guide in this respect:

- (A) Logan - 5ft.
- (B) Salt Lake City - 3.5 ft. (5 ft. in high benches)
- (C) Alta/Snowbird - 6 ft. (7 ft. if under roadway)
- (D) St. George - 3ft.
- (E) Park City - 5ft. (7 ft. above 7000 ft. elevation)
- (F) Richfield - 4 ft.
- (G) Moab - 4 ft.

(6) Thrust Blocking.

All tees, bends, plugs, and hydrants shall be provided with ~~reaction-thrust~~ blocking, anchoring, tie rods, or restraint joints designed to prevent movement. Restraints shall be sized to withstand the forces experienced.

(7) Pressure and Leakage Testing.

All types of installed pipe shall be pressure tested and leakage tested in accordance with AWWA Standard C600-1099.

(8) Surface Water Crossings.

Guidance: Surface water crossings, whether over or under water, present special problems. The Division shall-should be consulted before final plans are prepared.

(a) Above Water Crossings

The pipe shall be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement.

(b) Underwater Crossings

(i) A minimum cover of ~~two~~2 feet or greater, as local conditions may dictate, shall be provided over the pipe.

~~(i)~~(ii) When crossing water courses ~~which-that~~ are greater than 15 feet in width, the following shall be provided:

~~(A)~~ (A) ~~The pipe~~ with joints shall be of special construction, having restrained joints for any joints within the surface water course and flexible restrained joints at both edges of the water course.

~~(iiB) Isolation Valves shall be provided at-on both ends-sides of the water crossings at locations not subject to high ground water or flooding, so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding; and the valve nearest to the supply source shall be in a manhole.~~

~~(iiiC) -A means shall be provided, such as a sampling tap, not subject to flooding, to allow for representative water quality testing on the upstream and downstream sides of the crossing. Permanent taps shall be made on each side of the valve within the manhole to allow insertion of testing equipment to determine leakage and for sampling purposes.~~

~~(D) A means shall be provided to pressure test the underground water crossing pipe.~~

(9) Sealing Pipe Ends During Construction.

The open ends of all pipelines under construction shall be covered and effectively sealed at the end of the day's work.

(10) Disinfecting Water ~~Distribution Systems~~ Lines.

All new water mains or appurtenances shall be disinfected in accordance with AWWA Standard C651-05 or a method approved by the Director. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. On all new and extensive distribution system construction, evidence of satisfactory disinfection shall be provided to the Division. Samples for coliform analyses shall be collected after disinfection is complete and the system is refilled with potable drinking water. A standard heterotrophic plate count is advisable. The use of water for culinary-public drinking water purposes shall not commence until the bacteriologic tests indicate the water ~~to-be~~ free from contamination.

R309-550-9. Cross Connections and Interconnections.

(1) Physical Cross Connections.

There shall be no physical cross connections between the distribution system and pipe, pumps, hydrants, or tanks ~~which are supplied from, or which may be supplied or contaminated from, any source, including pressurized irrigation, except as approved by the Director.~~

(2) Recycled Water.

Neither steam condensate nor cooling water from engine jackets or other heat exchange devices shall be returned to the potable-drinking water supply.

(3) System Interconnects.

The ~~approval of the Director shall be obtained for~~ interconnections between different ~~potable drinking~~ water ~~supply~~ systems shall be reviewed and approved by the Director.

Guidance: In some situations, hydraulic modeling or capacity development calculations may be required when proposing a system interconnect.

R309-550-10. Water Hauling.

(1) Community Water Systems.

Water hauling is not an acceptable permanent ~~method source~~ for ~~culinary drinking~~ water distribution in community water systems. ~~Proposals for water hauling shall be submitted to and approved by the Director.~~

(21) Exceptions Non-community Systems.

The Director may allow ~~its water hauling use~~ for non-community public water ~~supplies systems by special approval~~ if:

- (a) ~~c~~Consumers ~~could can~~ not otherwise be supplied with good quality drinking water; ~~or,~~
- (b) ~~t~~The nature of the development, or ground conditions, are such that the placement of a pipe distribution system is not justified.

Proposals for water hauling shall be submitted to, and approved by, the Director.

(32) Emergencies.

Water hauling ~~may also be necessary as may be~~ a temporary means of providing ~~culinary drinking~~ water in an emergency.

Guidance: The guidelines for water hauling are contained in the bulletin entitled “Recommended Procedures for Hauling Culinary Water” available from the Division.

R309-550-11. Service Connections and Plumbing.

(1) Service Taps.

Service taps shall ~~be made so as to~~ not jeopardize the ~~sanitary~~ quality of the system's water.

(2) Plumbing.

~~Service lines shall be capped until used.~~

(a) Water services and plumbing shall conform to the Utah Plumbing Code.

~~(a) Solders and flux containing more than 0.2% lead and pipe and pipe fittings containing more than 8% lead shall not be used.~~

(b) Pipes and pipe fittings installed after January 4, 2014, are required to be “lead-free” in accordance with Section 1417 of the federal Safe Drinking Water Act. They shall be certified meeting the ANSI/NSF 372 or Annex G of ANSI/NSF 61.

(3) Individual Home Booster Pumps.

Individual booster pumps shall not be allowed for any individual service from the public water supply mains. Exceptions to the rule may be ~~provided~~ granted by the Director if it can be shown that the granting of such an exception will not jeopardize the public health.

~~**Guidance:** Public water systems are responsible to adequately design and maintain their systems in order to deliver an adequate quantity of clean, safe, drinking water to their customers while maintaining certain minimum pressures at all times, including peak demands (see R309-105-9).~~

Public water systems are being required to develop and operate a program to protect their systems from ~~backflow or backsiphonage~~ contaminations. An individual home booster pump, if installed ~~such so~~ that the suction side of the pump draws directly from the system’s water main rather than through an intermediate holding tank, may reduce the pressure in the main to less than 20 psi (perhaps even creating a vacuum); ~~thereby~~ This will increase the potential for contaminated water to enter the distribution system through any minor undetected leaks that may exist.

We cannot regulate the individual homeowner, but we do not want to encourage public water systems to proliferate the use of such pumps. Rule R309-105-6(2)(b) (“exceptions”) will still be available for individual cases where there is no other acceptable alternative; ~~but e~~ Each public water system shall review language included in their service agreements with customers and perhaps modify ~~such them~~ as needed to make it clear to the homeowner and any plumbing inspector that such pumps are not allowed, ~~even if stated otherwise by the Plumbing Code~~, without the permission of the supplier-public water system and authorized by the Director.

Fire sprinkler systems are increasingly required by local fire protection agencies for new buildings, including residential units. As the number of these systems increases, there will likely be instances where the water main pressure is inadequate to operate

fire sprinklers at the desired flow rate. The fire sprinkler industry has developed booster pumps integral with the sprinkler piping to meet low pressure circumstances. These integral booster pumps will only operate during fire emergencies and will not affect normal distribution system pressures. During a fire emergency, the pump should not decrease line pressure any more than a fire hydrant. Accordingly, the Division considers these fire sprinkler booster pumps outside the intent of R309-550-11(3), and does not require their installation to be approved by the Division Director, if their installation conforms to the Utah adopted Plumbing Code and National Fire Protection Association (NFPA) 13 D, Standard for the Installation of Sprinkler Systems in one and two-family dwellings and manufactured homes.

(4) Service Lines.

(a) Service lines shall be capped until connected for service.

(b) The portion of the service line under the control of the water supplier system is considered to be part of the distribution system, and shall comply with all requirements given herein.

(5) Service Meters and Building Service Line.

Connections between the service meter and the home shall be in accordance with the Utah Plumbing Code.

~~(6) Allowable Connections.~~

~~All dwellings or other facilities connected to a public water supply shall be in conformance with the Utah Plumbing Code.~~

R309-550-12. Transmission Lines.

(1) Unpressurized Flows.

Transmission lines shall conform to all applicable requirements in this rule. Transmission line design shall minimize unpressurized flows.

(2) Proximity to Concentrated Sources of Pollution.

A water supplier shall not route an unpressurized transmission line any closer than ~~fifty~~ 20 feet to any concentrated source of pollution (i.e.e.g., septic tanks and drain fields, garbage dumps, pit privies, sewer lines, feed lots, etc.). Furthermore, unpressurized transmission lines shall not be placed in boggy areas or areas subject to the ponding of water.

~~(3) Exceptions.~~

~~Where the water supplier cannot obtain a fifty foot separation distance from concentrated sources of pollution, it is permitted to use a Class 50 ductile iron pipe with joints~~

~~acceptable to the Director. Reasonable assurance must be provided to assure that contamination will not be able to enter the unpressurized pipeline.~~

~~*Guidance: To assure continued protection of the transmission line, the water supplier shall obtain a fifty foot right-of-way on each side of the transmission line.*~~

~~*Guidance: Water supply conduits and major service lines crossing known fault areas shall be either designed to accommodate significant differential movement of the ground or be valved immediately above and below the points of fault crossing to allow control of water flow in case of pipe rupture during an earthquake event.*~~

~~*Guidance: Water supply systems which receive their supply from more than one source shall be designed to provide alternative flow paths for major conduits in regions of known faults or, if such is not possible, that parallel routing of major conduits be avoided.*~~

R309-550-13. Operation and Maintenance.

(1) Disinfection After Line Repair.

The disinfection procedures of Section 4.7, AWWA Standard C651-05 shall be followed if any water main is cut into or repaired.

(2) Cross Connections.

The water ~~supplier system~~ shall not allow a connection ~~which that~~ may jeopardize water quality. Cross connections are not allowed unless controlled by an approved and properly operating backflow prevention assembly. The requirements of the Utah Plumbing Code shall be met with respect to cross connection control and backflow prevention.

~~Suppliers Water systems~~ shall maintain an inventory of each pressure vacuum breaker assembly, spill-resistant vacuum breaker assembly, double check valve assembly, reduced pressure principle backflow prevention assembly, and high hazard air gap used by their customers, and a service/inspection record for each such assembly.

Backflow prevention assemblies shall be inspected and tested at least once a year, by an individual certified for such work. This responsibility may be borne by the water system or the water system management may require that the customer ~~having with~~ the backflow prevention assembly be responsible for having the device tested.

~~Suppliers Water systems~~ serving areas also served by a pressurized irrigation system shall ~~prevent not allow~~ cross connections between the two. ~~Requirements for pressurized irrigation systems are outlined in Section 19-4-112 of the Utah Code.~~

(3) **ANSI/NSF Standards.**

All pipe and fittings used in routine operation and maintenance shall be ANSI-certified as meeting NSF Standard 61 or Standard 14.

(4) **Seasonal Operation.**

Water systems operated seasonally shall be disinfected and flushed according to ~~the techniques given in~~ AWWA Standard C651-05 for pipelines and AWWA Standard C652-02-11 for storage facilities prior to each season's use. A satisfactory bacteriologic sample shall be ~~achieved-obtained~~ prior to use. During the non-use period, care shall be taken to close all openings into the system.

*Guidance: **Emergencies***

Water systems ~~in areas subject to high earthquake hazard~~ are encouraged to develop contingency plans for obtaining pipe and appurtenances in an emergency. The stockpiling of material shall be considered.

*Guidance: **Operation and Maintenance Procedures Requiring Plan Approval.***

~~Refer to Subsection R309-500-5 to determine under what circumstances a pipeline repair or replacement procedure shall be pre-approved by the Division.~~

KEY: drinking water, transmission and distribution pipelines, connections, water hauling

Date of Enactment or Last Substantive Amendment: **March 8, 2006**

Notice of Continuation: March 22, 2010

Authorizing, and Implemented or Interpreted Law: 19-4-104

Informal Comments to R309-550 Pipelines

Prior to initiating the rule making process, the Division asked for informal comments from engineering consultants, water system operators, and the public by means of email and the website. This is done in an effort to address as many concerns as possible prior to beginning the formal rulemaking process. Once the rulemaking process is initiated, a formal comment period is required by the Division of Administrative Rules.

Mark Hansen email 3/18/14:

R309-550-6(1) ...All materials that may come in contact with the drinking water....stamped with the NSF logo approval.

Recommendation included

R309-550-6(2)(a) The use of asbestos cement pipe ~~shall~~is not be allowed, since it is considered a contaminant.

The suggestion is implied in the rule content. No action taken

R309-550-6(4) Only materials that have been used previously for conveying drinking water and that are free from contamination may be reused....

The suggestion is implied in the rule content- "meeting standards". No action taken.

R309-550-11(3) Guidance ...without the permission of the public water system and authorized by the Utah DDW Director...

The suggestion is implied in the rule content. No action taken

Nathan Hall email 3/19/14:

R309-550-5(11) separation from other contaminants: guidance states, "It is recommended that utility lines are clearly identified and different from one another"- not sure what you mean by different- maybe color?

Guidance modified to say "visually different".

R309-550-7(3)(d) Special provisions- "are likely to exist where the minimum"- add the word "or" between exist and where- "are likely to exist, or where the minimum"

Recommendation included.

John Schiess email 3/21/14:

R309-550-5(1)(b) When static pressure exceeds 120 psi in new distribution water lines, pressure reducing devices shall be provided on mains in the distribution system where service connections exist.

Guidance: The normal working pressure in the distribution system should be between 60-80 psi.

I have significant concerns with this proposed rule change. The topography in Utah does not lend itself to the perfect world of 60 to 80 psi operating pressure. Even the proposed maximum 120 psi pressure is far too restrictive. Designing new systems to meet this standard would require significantly more PRV stations than is currently the norm. The maintenance costs and headaches would go up correspondently as well.

While designing new systems with this standard would be possible in most cases it may not be possible or feasible to retrofit existing systems to meet this standard. There would be significant additional capital and maintenance costs to take care of all the new PRV stations. There may even be the need to construct new transmission and distribution lines to interconnect the new pressure zones. New tanks may need to be built in the new pressure zones if sources are located in the area and now can no longer pump to a tank.

If any maximum pressure is set it should be 150 psi since that is the pressure rating of standard indoor plumbing piping and fixtures.

The normal working pressure in the guidance paragraph has been changed to be between 60 and 100psi. The requirement for installation of a main line PRV has been changed to 150 psi.

R309-550-6(5)(a) Hydrant drains shall not be connected to, or located within, 10 feet of sanitary sewers or storm drains.

The requirement of keeping the hydrant drains 10 feet away from sewers I fine but keeping it 10 feet away from storm drain is not practical. Many times a storm drain is located along or under the curb and gutter of a street and hydrants are generally not 10 behind the curb and gutter. I question whether the requirement is necessary to protect public health.

Rule language has been changed to require 10' of separation between the sewer and "where possible" storm drains.

Randy Randall Phone Call 3/24/14:

Strong objections to 120 psi requiring a PRV. The cutoff should be based on the pressure restrictions for each component of the system. For example, the pipe is usually rated at 200 psi bu the meters might only be rated at 150 psi. 120 pounds is too low, especially in Utah. Most systems already have their pressure zones established and this rule will be extremely costly as additional zones will be required. When asked what he thought about if the requirement was applies only to new system- he still felt that requirements was too limiting and arbitrary. It also creates a false sense of security with the individual home regulators. He has the biggest problem with homes in the range of 90-120 psi who don't replace or install home regulators. The adjustment in pressure also affect fire flow. The normal working pressure in the distribution system is really between 60-150 psi.

Pressure when main line PRV's are required has been changed to 150 psi.

Ben Miner email 4/9/14

Strike through new proposed language requiring PRV. Note: This is probably okay for new construction, but it will be a huge expense for some water systems if they need to now go in and re-design the pressure zones, re-pipe and add a lot of PRVs. While most pressure zones that I have worked with have pressures less than 120 psi, I know of many that have little pockets on the downstream side which are higher and will be difficult to correct.

Pressure when main line PRV's are required has been changed to 150 psi.

R309-550-5(4) For water mains not connected to fire hydrants, the minimum line size shall be 4 inches in diameter, unless it serves picnic sites, parks, semi-developed camps, primitive camps or roadway rest-stops, in which case smaller pipes may be used...

Implied in the content of the rule. No changes made.

R309-550-5(6) ...Special design and burial techniques shall be employed for ~~Community~~ public water systems in areas of geologic hazard...

No changes made. Special design for transient and non-transient system is not required.

R309-550-6(2)(b)...pipes ..are required to be "lead free" ... ~~They shall be certified as meeting ANSI/NSF 372 or Annex G of ANSI/NSF 61.~~ Note: See my previous on NSF with my R545 comments

R309-550-6(6)...shall conform to ~~ANSI/NSF Standard 61 or Standard 14~~, and applicable sections of AWWA...

R309-550-11(2)(b)...~~They shall be certified meeting the ANSI/NSF 372 or Annex G of ANSI/NSF 61.~~

AWWA does not have a certification. NSF is still the standard.

Mike Davis phone call 4/23/14

R309-550-7 Separation of Water Mains and Transmission Lines from Sewers and Other Pollution Sources. Section only addressed separation of sewer- not other pollution sources. He considers storm drain a potential contamination source and would like separation standards written into the rules. If not, the title of the section should be revised.

"And other pollution sources" was taken out of the title of R309-550-7 and a guidance paragraph was added under R309-550-5(11) stating that consideration should be given to providing appropriate separation from other utilities.