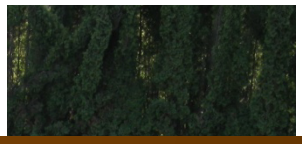
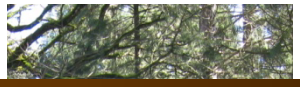
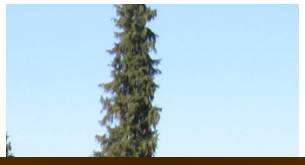
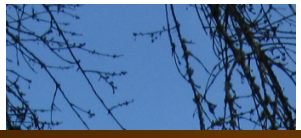
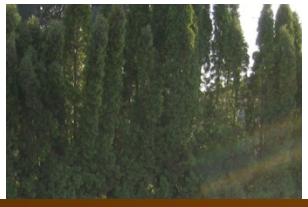
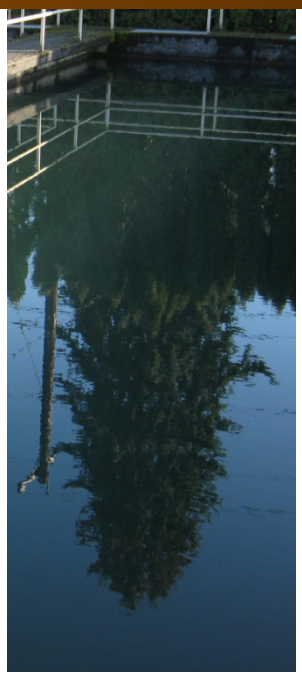






WATER MASTER PLAN



SILVERTON WATER MASTER PLAN

City of Silverton, Oregon

Adopted August 01, 2011

Ordinance 11-03

KELLER associates

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August 01, 2011

CITY OF SILVERTON

Water Master Plan

Keller Associates
131 S.W. 5th Ave.
Meridian, ID 83642

REGISTERED PROFESSIONAL ENGINEER
73464PE
OREGON
JULY 15, 2003
JAMES BLEDSOE
EXPIRATION DATE: 12/31/2011

Signed by:
James Bledsoe, P.E.
Project Manager

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DEPARTMENT OF HUMAN SERVICES
Public Health Division – Drinking Water Program
John A. Kitzhaber, MD, Governor

Oregon Health Authority

800 NE Oregon Street #640
Portland OR 97232-2162
Phone 971-673-0191
Fax 971-673-0694
971-673-0372-TTY-Nonvoice
http://public.health.oregon.gov/PHD/OEPH/DWP/Pages/index.aspx

June 6, 2011

Peter Olsen, PE
Keller Associates
780 Commercial Street
Suite 202
Salem, OR 97301

Re: **Master Plan 2011-2031 (PR#93-2011)**
City of Silverton (PWS ID#00823)
Final Approval

Dear Mr. Olsen:

Thank you for your submittal to the Oregon Health Authority's Drinking Water Program (DWP) of plan review information for the Water System Master Plan for the City of Silverton. On May 13, 2011, our office received a copy of the 2011 Water System Master Plan. A plan review fee of $750 was received on March 16, 2011.

The Master Plan represents a 20-year planning horizon out to the year 2031. The plan includes a system description, future demand estimates and CIP project lists with cost estimates. Upon review of the Master Plan, it appears the criteria listed in Oregon Administrative Rules (OAR) 333-061-0060(5) have been met. The Master Plan is approved.

If you have any questions or would like this in an alternate format, please feel free to call me at (971) 673-0191.

Sincerely,

Carrie Gentry, PE
Regional Engineer
Drinking Water Program

cc: Steve Starner, City of Silverton
Gregg Baird, OHA/DWP

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Silverton Water Master Plan

City of Silverton, Oregon

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Background 1
1.2 Purpose and Need 1
1.3 Acknowledgements 1

2.0 DESIGN CRITERIA 2

2.1 General 2
2.2 Population Projections 2
2.3 Study Area 2
2.4 Land Use and Design Densities 2
2.5 Present and Future Water Demands 3
2.6 Water Storage Criteria 6
2.7 Distribution Network Criteria 6

3.0 EXISTING FACILITIES EVALUATION AND ALTERNATIVES 8

3.1 Existing Storage Evaluation 8
3.2 Booster Pumps and Pressure Zones 11
3.3 Distribution System Evaluation 12
3.4 Distribution System Improvements 19
3.5 Regionalization and Service to Mount Angel 19

4.0 WATER TREATMENT PLANT EVALUATION 21

4.1 Overview and Background 21
4.2 Source Water 21
4.3 Treatment Facilities 25
4.4 Water System Survey 30
4.5 Treatment Considerations and Recommendations 31
4.6 Summary of Recommended Treatment Recommendations 32

5.0 RECOMMENDATIONS AND CAPITAL IMPROVEMENT PLAN 36

5.1 General 36
5.2 Summary of Recommendations 36
5.3 Capital Improvement Plan 38
5.4 Potential User Rate Impacts 39
5.5 Potential System Development Charge Impacts 40
5.6 Conclusion 41

CHARTS

Chart 2.1 Silverton 2008-2009 Monthly Metered Water Consumption (gallons)
Chart 2.2 2009 Water Usage by User Category
Chart 3.1 Demand Pattern Unit Curve and Peaking Storage
Chart 3.2 Locations not Meeting Maximum Day Demand plus Fire Requirements
Chart 3.3 Existing System Pressures under Peak Hour Demands
Chart 3.4 Sample Tuberculated Cast Iron Water Line
Chart 3.5 Silverton Water System Pipe Types
Chart 3.6 Fire Hydrant Coverage
Chart 4.1 Silverton Raw Water Turbidity
Chart 4.2 Silverton Raw Water Temperature
Chart 4.3 Raw Water and Treated Water pH for Plant 1 (OP) and Plant 2 (NP)
Chart 4.4 Alternative Future Treatment Plant Sites

TABLES

Table 2.1 Existing & Future Populations
Table 2.2 Design Densities
Table 2.3 Existing Water Consumption Breakdown (gallons per capita per day)
Table 2.4 Comparison of Per Capita Water Consumption
Table 2.5 Water Loss
Table 2.6 Future System Demands
Table 2.7 Distribution System Pressure Standards
Table 3.1 Existing Available Storage
Table 3.2 Existing and Future Storage Components
Table 3.3 Proposed Naming Convention for Pressure Zones
Table 4.1 Disinfection By-Product Sampling Results (Finished Water)
Table 4.2 Seasonal Treatment Capacity vs. Peak Day Demands
Table 5.1 Operational Improvements – Distribution System
Table 5.2 Capital Improvement Plan – Priority 1 Improvements
Table 5.3 Capital Improvement Plan – Priority 2 Improvements
Table 5.4 Capital Improvement Plan – Priority 3 Improvements (City Portion Only)
Table 5.5 Potential User Rate Impact for Priority Improvements
Table 5.6 Silverton Water System Development Charges

APPENDIX A – FIGURES

Figure 1 Study Area and Land Use
Figure 2 Existing Distribution System
Figure 3 Existing System Pressure Zones
Figure 4 Priority 1 and 2 Improvements
Figure 5 Priority 3 Improvements

APPENDIX B – WATER USAGE DATA

B1 Water Treatment Plant Production Logs
B2 Water Demand Projections
B3 Top 30 Water Users

APPENDIX C – DISTRIBUTION FACILITIES EVALUATION

APPENDIX D – WATER MODELING DATA

D1 Existing Site Specific Fire Flow Requirements
D2 Existing Maximum Day plus Fire Flow Results
D3 Existing Peak Hour Pressures

APPENDIX E – WATER QUALITY DATA

APPENDIX F – ODHS WATER SYSTEM SURVEY

APPENDIX G – CAPITAL IMPROVEMENT PLAN

APPENDIX H – USER RATE & SDC CALCULATIONS

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Silverton Water Master Plan

City of Silverton, Oregon

1.0 INTRODUCTION

1.1 BACKGROUND

The City of Silverton owns and operates a water system that serves approximately 9,600 residents primarily within Silverton's city limits. Water is conveyed from Abiqua Creek and Silver Creek to the City's water treatment plant. Water from the two sources is mixed prior to treatment. The treatment plant consists of two parallel treatment systems dating back to the 1950s and 1980s. Both treatment systems include conventional filtration, and all water is treated with an on-site chlorine generation system.

From the water treatment plant, water is delivered to city residents via a network of pipelines. Booster facilities pump water to upper pressure zones. Three reservoirs provide a total of 4.45 million gallons of storage.

1.2 PURPOSE AND NEED

This report presents findings and recommendations relating to the Silverton municipal potable water system study. This study was commissioned by the city in an effort to determine the current state of the water system and to plan for future needs. The planning study is intended to build upon previous planning efforts.

A review of the fundamental planning elements such as population, water supply and demand, development and household densities, and fire flow requirements is presented, as well as an analysis of the system followed by a summary of recommendations and a capital improvement plan. Figures and supporting data for the information presented in this report have been included in the appendices for reference.

1.3 ACKNOWLEDGEMENTS

Keller Associates gratefully recognizes all those who have provided their support and assistance in the completion of this study. Keller Associates has worked as part of a technical review committee (involving key city staff, Silverton residents, and business/institution representatives) to understand the challenges currently facing the system and develop practical, cost-effective solutions. Members of the technical review committee include the following:

- *Mike Erdman,* Home Builders Association of Marion and Polk Counties
- *Paul Miller*, Bruce Pack
- *Peter Paradis, School District*
- *Gerald Fisher*, resident and former Silverton City Engineer
- *Jeff Lorenz*, Silverton Hospital
- *John Cramer*, Silverton City Engineer
- *Steve Starner*, Silverton Public Works
- *Andy Peters*, Silverton Public Works

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2.0 DESIGN CRITERIA

2.1 GENERAL

This chapter details the design criteria used to establish standards by which the system is evaluated and serve as the basis for identifying needed improvements. These criteria include an evaluation of population, development densities, potable water demands, land use, and other factors affecting the water system.

2.2 POPULATION PROJECTIONS

The population values presented in Table 2.1 summarize existing and future populations used for this planning effort. Population projections reflect the Marion County adopted forecasts based on the published values from the Portland State University (PSU) Population Research Center dated September 2008. These values are consistent with other planning documents, including the wastewater and transportation master plans completed in recent years. In estimating the 2035 population, we assumed a growth rate of 1.5% (the growth rate assumed by PSU for the period from 2020 to 2030).

Table 2.1 – Existing & Future Populations

Year	Population
2009	9,600
2020	12,423
2030	14,418
2035	15,532

2.3 STUDY AREA

The study area was developed in close coordination with city planning staff and the technical review committee (TRC). Areas of probable residential and commercial development were identified. Figure 1 in Appendix A illustrates the study area used for this planning study. It includes a small commercial/industrial area outside the Urban Growth Boundary (UGB). For phasing, it was assumed that all areas within the existing City Limits would develop by 2020, and all remaining areas would develop by 2035.

2.4 LAND USE AND DESIGN DENSITIES

Existing and future land use assumed for the study area is also shown in Figure 1 in Appendix A. Land use assumptions for future development were developed in conjunction with the city planner, public works staff, and the TRC.

Design densities refer to anticipated development densities for residential land use within the study area, and the average household density. These densities serve as the basis for estimating potable water demands in areas yet to be developed. Table 2.2 presents design densities per gross acre of undeveloped residential zones, as well as residential household densities for the city. The residential housing densities are derived from input from the city planner, and from historical development densities. The average household density assumed for this study is consistent with the household density reported for the city in the

year 2000 US Census, and is consistent with the wastewater master plan. Using historical household densities is slightly conservative given national trends towards smaller household densities in the future.

Table 2.2 – Design Densities

	Density
Residential 1 (homes/ gross acre)	3.85
Residential R-5 (homes/ gross acre)	7.5
Residential RM-10 (homes/ gross acre)	26
Average Household Density* (People/home)	2.7

*2000 U.S. Census

2.5 PRESENT AND FUTURE WATER DEMANDS

Historical production data were used to determine the average annual, average winter, average summer, peak month, and peak day demands. Plant production data was estimated using plant influent data and typical treatment process wasting rates provided by the City. Peak hour demands were also estimated using a 24-hour demand pattern developed from actual summertime water usage patterns observed in the city's supervisory control and data acquisition (SCADA) data. Supporting data and additional details regarding the development of these system demands can be found in Appendix B.

Table 2.3 shows a breakdown of water consumption. Of the 142 gallons per capita per day (gpcd) of average annual water usage, approximately 94 gpcd can be attributed to single family and residential water usage.

Table 2.3 – Existing Water Consumption Breakdown (gallons per capita per day)

	Single Family Residential	Multi Family Residential	Commercial / Industrial (excl. Bruce Pac)	Bruce Pac	Unaccounted for Water[7]	Total
Average Annual[1]	79	15	18	12	19	142
Average Summer[2]	120	18	27	8	27	200
Average Winter[3]	49	12	27	12	16	117
Peak Month (July)[4]	147	23	29	9	32	239
Peak Day[5]	187	29	36	11	41	304

[1] Assumes 9% of water treatment plant inflow is lost to backwash/rewash (based on data from City).

[2] Include months July – Sept.

[3] Include months Nov, Dec, and Jan.

[4] Assumes 7% of water treatment plant inflow is lost to backwash/rewash during high demand period (based on data from City).

[5] Peak Day is based on 2007-2009 data and accounts actual backwash and rewash volumes.

[6] gpcd = gallons per capita per day. Breakdown for each category is based on % of total consumption.

[7] Unacounted for water is lost through leaks, illicit use, or other unmetered usage.

Table 2.4 shows a comparison of the typical water consumption to that in neighboring communities. Overall, Silverton's water consumption is within typical values seen in comparable communities.

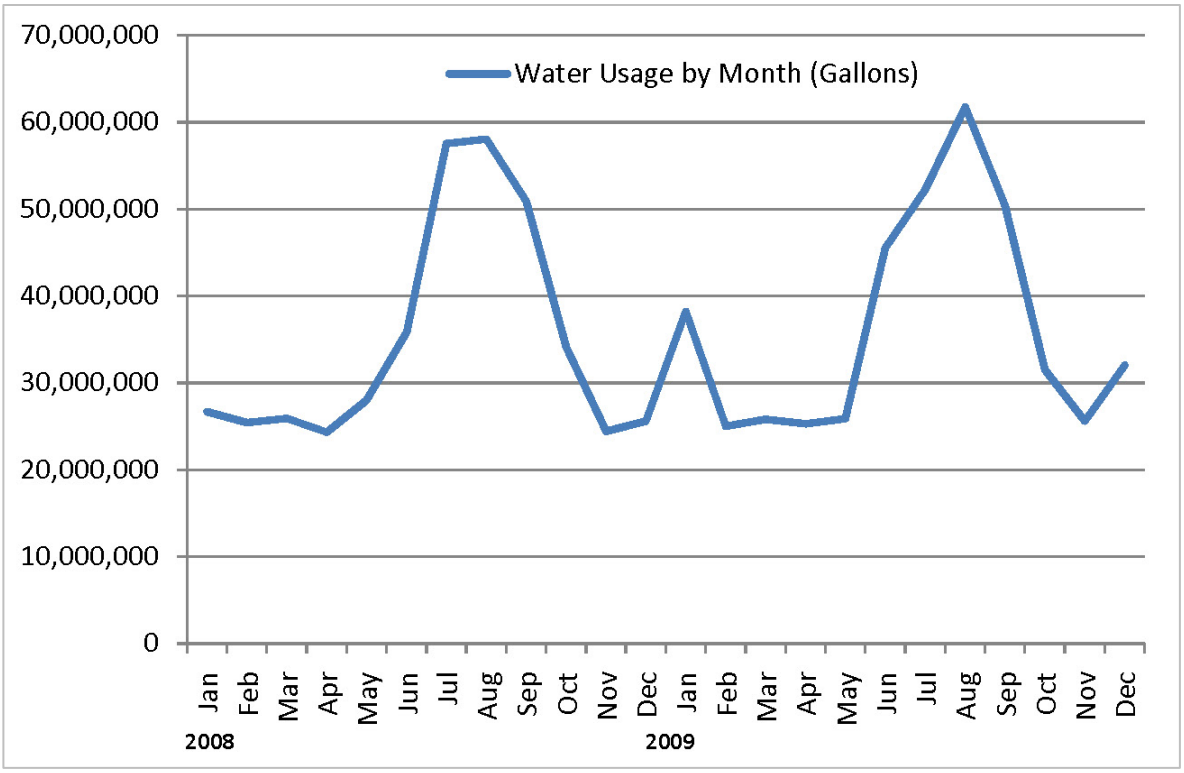
Table 2.4 – Comparison of Per Capita Water Consumption

	Residential Demands (gpcd)		Total System Demand (gpcd)			
	Silverton[4]	Stayton[1]	Silverton	Stayton[1]	Wilsonville[2]	Aumsville[3]
Average Annual[1]	94	106	142	371	167	
Average Summer[2]	138	147	200	514		134
Average Winter[3]	62	64	117	226	118	66
Peak Month (July)[4]	170		239		306	161
Peak Day[5]	216		304	890		

[1] From January 2006 Stayton Water Master Plan.
[2] From June 17, 2010 email from engineering division. Average winter assumed to be 6% higher than minimum month provided.
[3] From March 2008 Aumsville Booster Station Pre-design report.
[4] Silverton Residential Demands is based on total of the single family and multi-family components.

Chart 2.1 shows monthly water consumption usage pattern for 2008 and 2009. Peaks correspond to summer demands, where demands are a little more than twice what they are during the winter. Increases during the summer periods corresponds to irrigation usage.

Chart 2.1 Silverton 2008-2009 Monthly Metered Water Consumption (gallons)



Monthly water usage for each user category is summarized in Appendix B. Chart 2.2 shows the breakdown of water consumption by user category for 2009. A similar breakdown was observed for 2008. Approximately ¾ of all water metered can be attributed to single family and multifamily residential usage.

Chart 2.2 - 2009 Water Usage by User Category

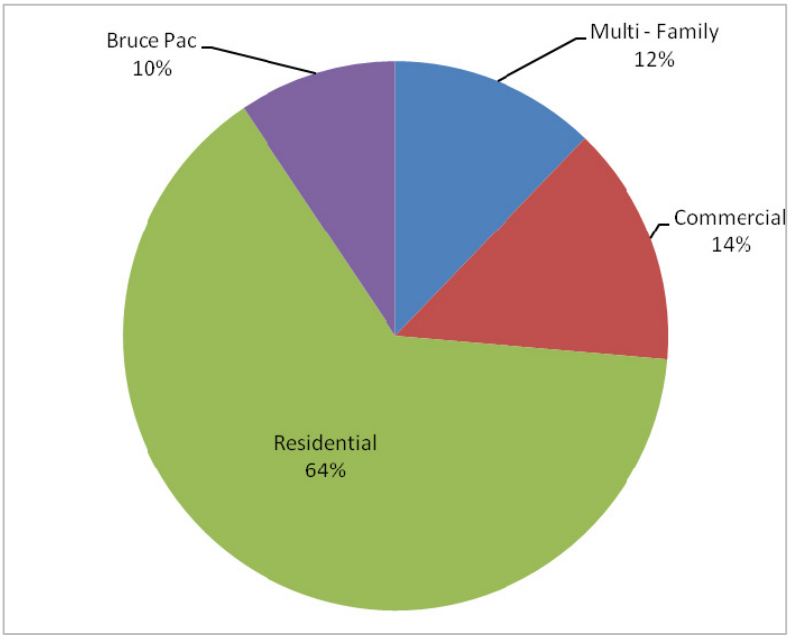


Table 2.5 compares annual water production and water consumption (from individual meter data). The difference between the two accounts for approximately 11% and 7.6% for 2008 and 2009, respectively. This represents a fairly tight water system. The low water loss is believed to be partially a result of leak detection and pipe replacement efforts completed in the 1990s.

Table 2.5 – Water Loss

	2008	2009
Annual Water Inflow, MG	540.0	546.4
% Wasted at WTP	9.0%	9.0%
Amount Wasted at WTP, MG	48.6	49.2
Amount Delivered to System, MG	491.4	497.2
Amount Sold, MG	416.7	439.1
Unaccounted for Water, MG	74.7	58.1
Unaccounted for Water	**15.2%**	**11.7%**
Unmetered Usage*, MG	20.5	20.5
Estimated Water Loss, MG	54.2	37.6
Estimated Water Loss	**11.0%**	**7.6%**

*Value taken from 2004 Water Management and Conservation Plan and includes construction, surveying, pool, city landscaping (6 acres), park fountain, public buildings, and hydrant flushing.

Future water demand projections are presented in Table 2.6. These demands were developed in coordination with input from the TRC, and assume that future demands per capita will be similar to existing demands per capita and that a future industrial demand of 0.3 MGD will be provided from the City's system. According to City staff, this projected industrial demand is consistent with previous direction given by elected officials.

Table 2.6 – Future System Demands[2]

Year (Population)	2009 (9,600)	Industry[1]	2020 (12,423)	2030 (14,418)	2035 (15,532)
Average Annual Demand	1.37	0.3	2.07	2.35	2.51
Average Summer Demand	1.92	0.3	2.78	3.18	3.40
Average Winter Demand	1.12	0.3	1.75	1.99	2.12
Peak Day Demand	2.92	0.3	4.08	4.68	5.02

[1]Assumes 0.3 mgd set-aside for future industry.
[2]Future demands are calculated by assuming the same demands per capita as presented in Table 2.3 (which includes commercial, for industry, public uses, etc.) plus a future set-aside for industry. Demands do not include backwash water at water treatment plant.

2.6 WATER STORAGE CRITERIA

A detailed storage analysis for Silverton is presented in Chapter 3 of this report. However, general recommendations and definitions for various storage components are presented here.

- *Operational Storage*: Operational storage is the volume of water drained from the reservoirs during normal operation before the water sources begin pumping to refill the reservoir. Keller Associates recommends using approximately 10% of the total storage volume for operational storage to provide appropriate pump run times and adequate tank mixing.

- *Peaking or Equalization Storage*: Peaking storage refers to the storage required to meet peak hour demands in excess of the supply capacity, or average daily demand for the peak day water usage.

- *Fire Protection Storage*: Fire protection storage provides the volume necessary to meet maximum fire demands for the specified duration.

- *Emergency Storage*: Silverton has historically planned on having 2 days of average day demand reserved for emergencies (refer to 2004 Water Management and Conservation Plan). This recommendation was felt to be a minimum for a surface water supply and was accepted by the TRC.

2.7 DISTRIBUTION NETWORK CRITERIA

Planning for the distribution network involves establishing performance standards for pressures and flows throughout the system. The design flows through the system are the largest flows reasonably anticipated to occur. For the city of Silverton, these flows result from a fire event during the system's maximum day demand.

In evaluating fire flow for existing residential areas, we assumed a minimum fire flow requirement of 1,000 gpm above 20 psi for 2 hours. It is recommended that homes built after

2009 be provided a minimum fire flow of 1,500 gpm at 20 psi. Aside from residential areas, the fire department assisted in identifying a number of structures within the City that have high fire demands. Additionally, target fire protection flows of 2500 gpm and 4000 gpm were identified by the TRC for commercially and industrial zoned areas, respectively.

In addition to design standards for the delivery of flow rates, standards for system pressures are necessary for the normal daily operation of the water system. The aim of standards for pressure is to provide safe and reliable service to water users under a variety of system conditions. If pressures are too high, damage can occur within the distribution system and at points of use. If pressures are too low, a variety of issues arise - including potential for back flow contamination, and low or no water availability. The recommended distribution pressure standards for new connections are listed in Table 2.7.

Table 2.7 – Distribution System Pressure Standards

System Scenario	Pressure (psi)
Peak Hour Demand Event - Minimum	40+
Maximum Day Demand Plus Fire - Minimum	20+
Mainline Pressures – Maximum (w/o special pipe design)	100
Pressures at service w/o Pressure Regulator – Maximum	80

3.0 EXISTING FACILITIES EVALUATION AND ALTERNATIVES

This chapter provides an analysis of Silverton's existing system components of storage, delivery, and distribution with respect to the design criteria presented in Chapter 2 of this report. Chapter 4 addresses the city's water supply and treatment.

3.1 EXISTING STORAGE EVALUATION

The city has an existing storage volume of 4.45 MG total in three storage reservoirs. The storage component volumes presented here are effective storage volumes, and thus exclude unusable or 'dead' storage.

Table 3.1 – Existing Available Storage

Site	Material	Volume (MG)
Old Clearwell	Buried Concrete	1.0
New Clearwell	Buried Concrete	1.46
High Level	Welded Steel	1.99
Total		**4.45**

In determining peaking storage needs, Keller Associates reviewed continuous SCADA data provided by the City for a high usage day in the summer of 2010. The 24-hour demand pattern below was developed from this evaluation. Chart 3.1 shows the unit demand curve for Silverton. This curve illustrates how the demands vary during a typical summer day. A value of 1 represents average flow. The area above the unit demand value of 1.0 represents periods of high demand when additional peaking storage is required. For Silverton, peak demands occur in the evening where peak hour demands can exceed two times the average demand for the day. High demands continue throughout the night and spike again in the early morning. This flow pattern is typical for communities that provide irrigation water, where residences irrigate with automatic sprinkler systems that can take advantage of efficiencies of watering at night. The peaking storage need (illustrated in blue) was calculated assuming that the peak day water supply is equal to the demand. Peaking storage needs can be partially mitigated if there is a surplus supply capacity.

Chart 3.1 – Demand Pattern Unit Curve and Peaking Storage

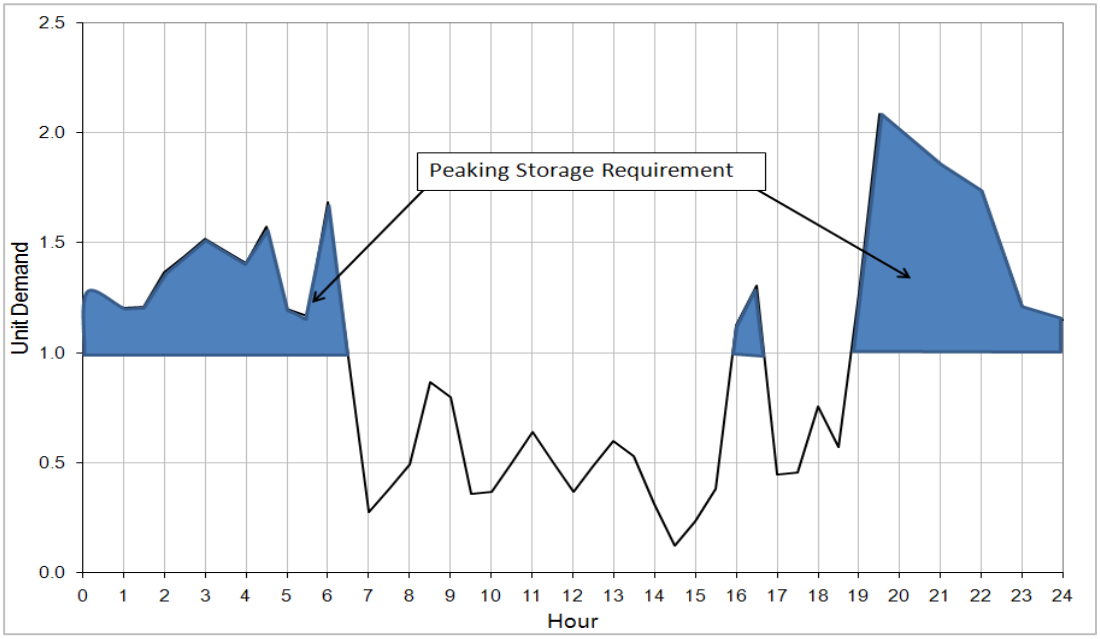


Table 3.2 summarizes the required storage volumes for existing and future conditions. The required storage volumes are based on the storage component requirements presented in Section 2.5 of this report. As can be seen, the existing storage essentially meets the requirements for the existing users. Additional storage needs are anticipated to increase to 2.9 MG by 2035. The majority of the storage requirement corresponds to the two-day average day demand for emergency storage.

Table 3.2 – Existing and Future Storage Components

Component	2009	2020	2035
Population	9,600	12,423	15,532
Peaking storage[1]	0.34	0.52	0.63
Operating storage[2]	0.45	0.63	0.74
Fire storage[3]	0.96	0.96	0.96
Emergency storage[4]	2.73	4.13	5.02
Total Need (MG)	**4.48**	**6.24**	**7.35**
Less existing	(4.45)	(4.45)	(4.45)
Deficit (MG)	**0.03**	**1.80**	**2.90**

[1]Based on water usage pattern, and assumes peak day demand is equal to the supply capacity.

[2]Assumes 10% of total storage. Typically dedicated for difference between on/off settings and freeboard.

[3]Based on 4000 gpm fire demand for 4 hours.

[4]Assumes 2 times the average day demand.

3.1.1 Alternatives for Addressing the Storage Shortfall

Alternatives for addressing the city's existing storage shortfall include: doing nothing, reducing peak hour demands, increasing supply, or constructing new storage. This section reviews options under each of these categories.

No Action

If the city were to do nothing, the equalization storage need will continue to grow over time, reducing the amount of storage available for providing fire protection and emergency supply.

Reduce Peak Hour Demands

Reducing peak hour demand could come in the form of curtailment, changing water usage patterns, and water conservation. A mandatory curtailment plan could be implemented as a means of reducing peak hour demands, which would also reduce the peaking and emergency storage components of the needed storage. Changing periods of peak water usage could be accomplished by irrigating more during daytime hours. One concern with encouraging more irrigation during the daytime (which would reduce the night-time peaking storage required) is that the total water demands could increase as a result of additional evaporation that occurs. This alternative would only slightly delay when additional storage would be required. Water conservation efforts could also postpone slightly when additional storage would be needed.

Increasing Supply

Surplus supply and treatment capacity could be used to reduce peaking storage requirements. However, this would require the plant to ramp up and down with demands,

increasing the complexities of the existing operations. This alternative would only slightly delay when additional storage would be required.

Constructing New Storage

Priority 1 Storage Improvements:
Keller Associates considered alternative tank locations and sizes. The optimum location for the additional water storage was determined to be at or near a pre-identified site located near the Edison Road Booster Pumphouse. A new tank at this location would provide a backup supply to the upper pressure zones located west of Silver Creek. Because of its elevation, it could also service all of the pressure zones in the event of an emergency. Additionally, without additional transmission and/or storage west of Silver Creek, the upper pressure zones do not currently have adequate fire protection. A new storage facility at this location will provide needed fire storage to residentially and commercially zoned areas.

Two tank sizes were considered for the new site – a 2 MG tank and a 3 MG tank. A minimum size of 2 MG was considered so that the new facility could provide the large commercial and emergency demands and meet projected 2020 storage needs. A 3 MG tank would provide projected 2035 storage needs, but was ultimately deemed to be oversized given the normal winter and summer demands for the upper pressure zones.

In connection with the new tank, a few other improvements/considerations are recommended:

- Provisions for tank mixing and re-chlorination. This is important considering the longer residence times anticipated in the tank.

- A backup pump capable of delivering backup and additional fire flow to the Edison Road Booster service area.

- A pressure sustaining valve that would protect the Edison Road Booster service area from over-pressurizing in the event that one of the larger pumps were to run unchecked. Flow could be redirected back to the new tank.

  An altitude valve at the existing High Level Reservoir site. The existing High Level Reservoir is anticipated to fill more quickly than the new tank because of its proximity to the High Level Pumphouse. Control on/off settings for the pumps in the High Level Pumphouse should be set up to run off of the new tank. The new tank elevation should match the same hydraulic grade of the existing High Level Reservoir.

Priority 2 Storage Improvements:
Two alternative tank sites for a second future tank were considered. The first location was adjacent to the existing High Level Reservoir. The primarily drawback with this alternative was the increased water age with more storage in the upper pressure zone. An alternative location near the existing water treatment plant was considered to be a more favorable location. Locating a tank near the treatment plant would provide the added benefits of more contact time, and more storage that would directly serve the pressure zone where the majority of the system demands are. It should be noted that if the City were to consider an alternative treatment plant site, then it may be worthwhile to further evaluate locating the future additional storage at the new treatment plant site.

For budget purposes, all the new storage facilities were assumed to be concrete. Concrete will be necessary for buried or partially buried tanks (such as the two existing clear wells).

Concrete tanks will also result in lower operational and maintenance costs. Further evaluation of tank materials could be completed during the pre-design phase of completing recommended storage improvements.

3.1.2 Additional Storage Improvements

As part of the planning process, Keller Associates also completed an evaluation of existing storage conditions for the High Level Reservoir. A copy of this evaluation along with recommended facility maintenance activities and upgrades can be found in Appendix C.

3.2 BOOSTER PUMPS AND PRESSURE ZONES

Booster Pumps

There are three booster pump stations Silverton's water system. These are referred to as the High Level Pumphouse, the Edison Road Booster Pumphouse, and the Main Street pump station.

The High Level Pumphouse, located at the water treatment plant, directly or indirectly serves all of the upper pressure service areas in the water system. This pump station is controlled by the levels in High Level Reservoir. Water crew members manually control the booster pumps during backwash cycles at the treatment plant.

An evaluation of the High Level Pumphouse is contained in the Technical Memo found Appendix C. The pump station is approximately 30 years old. Two pumps, each with a capacity of approximately 1450 gpm, deliver water to the high level pressure zone. Since most of the facilities are approaching the end of their design life, a new booster facility is recommended within the next five years. Peak day demands for the zones served by the booster pumps are anticipated to increase from approximately 900 gpm to approximately 1800 gpm by 2035. The new facility should have three or more pumps sized such that the future peak day demand could be met with the largest pump out of service. The facility should also have standby power, flow metering capabilities, and modern electrical and instrumentation components.

The Edison Road Booster Pumphouse pulls water from the high level pressure zone and boosts it to a small service area near Edison Road. An evaluation along with recommended improvements for this pump station can also be found in Appendix C.

The Main Street pump station is located in a below ground vault and has not been operational for several years. Originally, this facility provided water to an elevated tank that has since been abandoned. The need for this facility has been mitigated by other system improvements and will further be mitigated by Priority 1 storage, PRV, and pipeline improvements recommended as part of this master plan.

Pressure Zones

There are presently seven pressure zones in the city's water system. Most of these pressure zones have not been clearly defined in the past, and have been referred to by vague naming conventions. In an effort to clarify and clearly define these pressure zones, a new naming convention is proposed as presented in the following table and illustrated in Figure 3 in Appendix A.

Table 3.3 – Proposed Naming Convention for Pressure Zones

Previous Name	Proposed Name	Target Hydraulic Grade (ft)	Pressure Range
high high zone	Edison Booster Zone	730	38 - 100 psi
high zone	WTP[1] Booster Zone	631	42 – 81 psi
medium zone	WTP PRV[2] Zone	518	40 – 90 psi
unnamed	Ike Mooney PRV Zone	498	43 – 80 psi
unnamed	Anderson PRV Zone	490	35 – 91 psi
unnamed	Water near Peach PRV Zone	449	56 – 69 psi
low zone	WTP Clearwell Zone	409	38 – 87 psi

1. WTP = Water Treatment Plant
2. PRV = Pressure Reducing Valve

The new naming convention is based on the system component and its location that provides the required hydraulic grade (or pressure) to the specific pressure zone.

Most of the city is supplied directly from the clearwells located adjacent to the water treatment plant (WTP Clearwell Zone). This service is provided via gravity from the clearwells without pumping.

The WTP Booster Zone draws water from the WTP clearwells and is pressurized from the High Level Pumphouse (WTP booster station). The 2 MG High Level reservoir, located on Eastview Lane, serves the WTP Booster Zone directly and the down-gradient zones indirectly. Pressures are reduced from WTP Booster Zone to serve the WTP PRV Zone, the Ike Mooney PRV Zone, the water near Peach PRV Zone, and the Anderson PRV Zone. Pressures are increased from the WTP Booster Zone through the Edison Boosters to supply the Edison Booster Zone.

Each of the PRV stations that establish a grade for a zone consists of a primary PRV and a secondary PRV. The primary PRV setting is the normal operating grade for that zone. The secondary PRV setting is approximately 10 psi lower than the primary PRV, and is used in high demand scenarios (such as fire flow conditions) when the primary PRV's flow capacity is insufficient to keep up with the demand.

The Water near Peach and Ike Mooney Zones are sufficiently close in grades that the two pressure zones can be combined. The combination of these two zones has been included as part of the operational improvement recommendations.

3.3 DISTRIBUTION SYSTEM EVALUATION

A hydraulic computer model of the City's distribution system was created in conjunction with this study using data extracted from the City's existing GIS database. The hydraulic modeling software used for this study is Bentley's WaterCAD v8i.

Significant effort on the City's part was put forth to improve the attributes and integrity of the GIS database prior to the creation of the model. The City's existing 2-ft contours were used as the source for the modeled elevation. The elevation data was added to the model through an automated terrain modeling process and manually checked for accuracy. Additional model input data such as pump curves, operational controls, component set points, and other data was gathered by City staff and incorporated into the hydraulic model.

Water consumption records from City's billing database was exported and joined to the GIS water meter database. This allowed for a more accurate allocation of the existing system water demands.

The future water system demands were allocated in the water model according to the planned land use and the respective development densities of undeveloped areas within the study area. The city provided information on vacant parcels within the city limits with utility services readily available, and developable land within the city limits that may require utility and access work as part of development. These two types were assumed to be the first to be developed in the future and their cumulative area accommodated nearly all of the new population up to year 2020.

Of the 461 acres of undeveloped land outside the city limits but within the urban growth boundary, 259 acres are needed to accommodate the added population by 2035.

Water demands were allocated to these areas using Theissen polygons intersecting the land use polygons. The allocation was accomplished through an automated process in the water modeling software and the demands were back-checked for accuracy.

Upon completion of the model construction process, Keller Associates collaborated with city staff to calibrate the hydraulic model to actual field conditions. This process consisted of simultaneously collecting and recording multiple parameters from more than 60 points throughout the water system over several days of fieldwork. As discrepancies were identified between field and observed data, additional testing was conducted until the source of the discrepancies was identified and accounted for. The end result of this effort is a highly refined and very well calibrated model that will not only serve for the present evaluation and planning needs, but can be used on an ongoing basis by the city in a number of ways to assist in implementing future projects.

This calibrated computer model of the water system can continue to serve as a valuable and cost-effective system planning and management tool for the city. It is highly recommended that the city update the model every one to three years to reflect changes in the physical attributes and usage patterns of the water system. Typically these updates can be accomplished for about $5,000, depending on the amount of growth that has occurred and if additional analysis is desired. For many communities ongoing costs for updating the model and evaluating development impacts are charged to the development at the time of preliminary plat or final plat review.

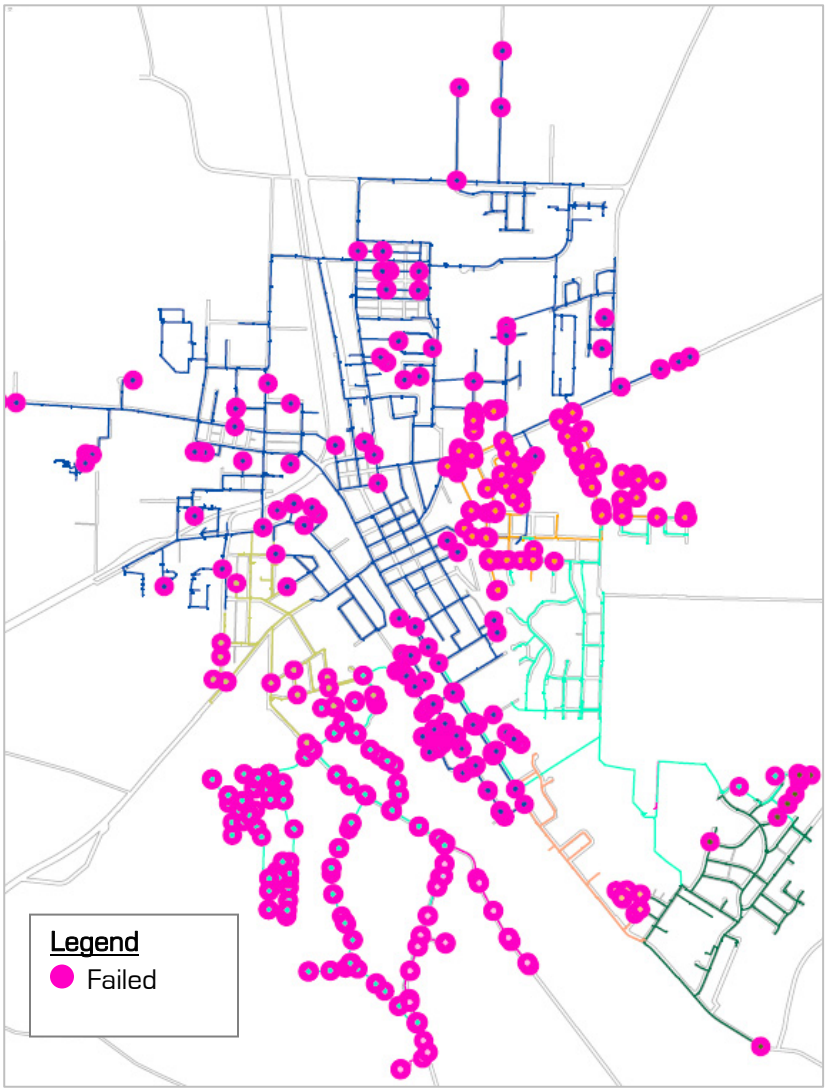
3.3.1 System Evaluation and Results

With the calibrated model, the current distribution system has been evaluated for compliance with the pressure and flow standards presented in Section 2.6 of this report. The following sections summarize the analysis results.

Maximum Day Demand plus Fire Demands: The model was populated with fire flow demands for areas with specific requirements identified by the local fire authority. These site specific fire flow requirements can be found in Appendix D. A minimum commercial fire flow of 2500 gpm at 20 psi was selected as the default for the model evaluation if no specific fire flow requirement was identified by the local fire authority. Service lines, transmission lines, or dead end lines without hydrants or within 300 ft of another node capable of providing fire flow were eliminated from the fire flow evaluation.

Under maximum day demands with the largest pump offline, and the fire flow requirements stated, the system was tested with the criterion of system pressures not dropping below 20 psi. The water model evaluates each node individually under maximum day demands with the specific fire flow requirement for that node, while considering pressures at other nodes in the system. The analysis is steady state and assumes adequate fire storage is provided to support the design durations. Chart 3.2 highlights the modeled nodes in the water system that do not meet Maximum Day Demand plus Fire requirements. Appendix D contains the detailed model results report for this and all other model evaluations discussed in this section.

Chart 3.2 – Locations not Meeting Maximum Day Demand plus Fire Requirements

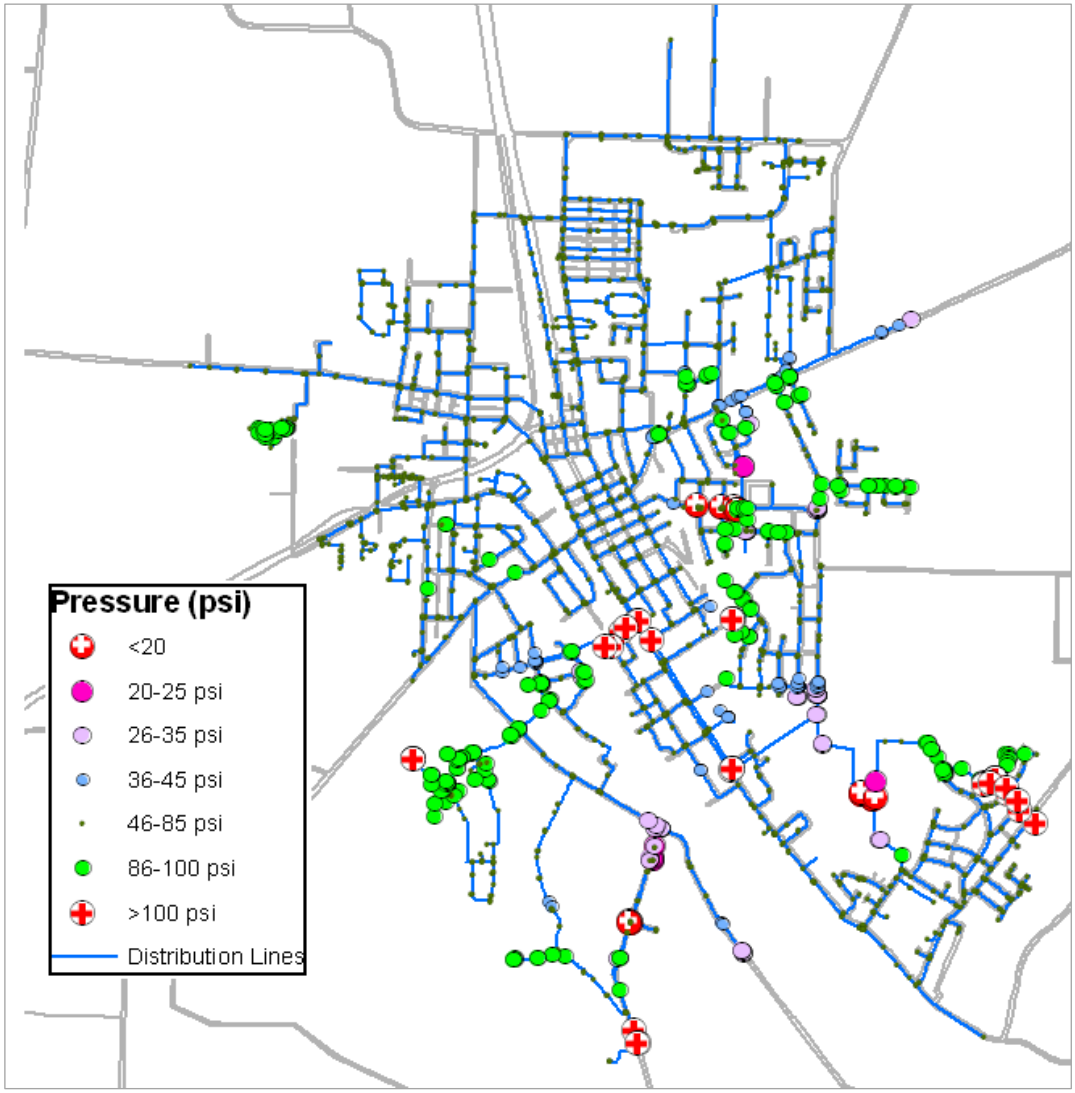


Areas of inadequate fire protection are primarily a result of undersized lines, inadequate transmission, lack of system looping, and low system pressures in some locations. Inadequate transmission and a lack of storage on the west side of Silverton account for many of the highlighted locations in Southwest Silverton. Local undersized pipelines (typically older pipelines, 2 inches to 6 inches in diameter) account for many of the areas not meeting fire protection in the downtown and lower parts of the city.

Peak Hour Demand

The system was also modeled under peak hour demands to check for pressures in the system against the selected pressure standards. Chart 3.3 highlights the system locations with various pressure ranges.

Chart 3.3 - Existing System Pressures under Peak Hour Demands



Unwanted Pipe Materials and Older Lines

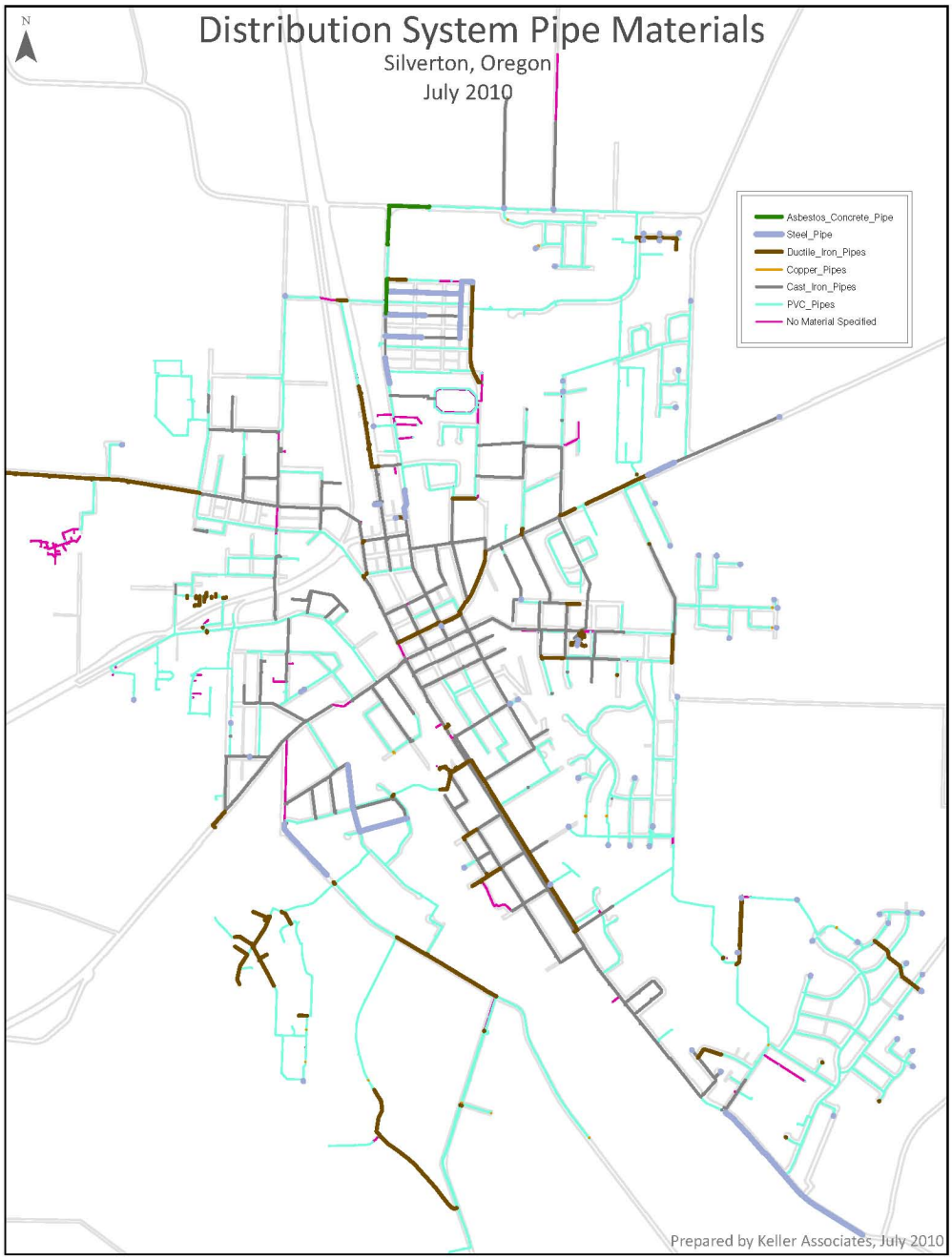
The distribution system contains problematic steel and asbestos cement pipe materials. These materials tend to cause operation and maintenance problems (low pressures, leaky pipes, poor fire protection, poor water quality) for Silverton's system and have been targeted for replacement in the capital improvement plan. Additionally, some older portions of the system (Main, Lewis, and Jersey Streets east of Water Street) with cast iron pipe material are believed to be tuberculated.

To simulate pressure losses experienced in the field, Keller Associates had to significantly restrict flows in the water model. Buildup of material in the pipeline was confirmed by field staff who report that pipe corrosion can also cause aesthetic water quality concerns. Chart 3.4 provides a sample of 50-75 year old tuberculated cast iron water pipe pulled from a water system in Big Spring, Texas. Chart 3.5 illustrates the various pipe materials throughout Silverton's distribution system.

Chart 3.4 - Sample Tuberculated Cast Iron Water Line

S. Dayton. December 2009 Municipal Sewer and Water Magazine.

Chart 3.5 - Silverton Water System Pipe Types



Hydrant Coverage

There are approximately 490 fire hydrants distributed throughout the water system. In general, there should not be more than 500 feet between hydrants in order to provide fire protection without the need to run excessive fire hoses during a fire event. This maximum distance requires a radius of 250 feet around each hydrant. The radii of the hydrants in the system should overlap for good coverage. Gaps, or areas where radii do no overlap, are areas of inadequate fire protection.

With the hydrant location data provided by the City, a 250 foot radius was created around each hydrant to check the general coverage throughout the system. This method applies only for a general check because it does not account for local obstructions that might inhibit actual coverage. Chart 3.6 illustrates the hydrant coverage based on a 250 foot radius for each hydrant. As seen in Chart 3.6, there are several gaps in hydrant coverage. As a result, some of the priority 1 capital improvements are targeted at eliminating some of the most critical coverage gaps.

Chart 3.6 - Fire Hydrant Coverage

Operation & Maintenance

The city exercises all hydrants and valves at least biannually as part of their directional flushing program. Broken valves and hydrants are placed on a list for replacement and city crews work on repairs throughout the year. All pressure reducing valves are rebuilt and set biannually. Backflow assemblies are tested and repaired if needed on an annual basis. Meter repairs/replacements are an ongoing activity consuming 5+ days per month. The city also exercises all valves bi-annually. City staff has also expressed a desire to have more funds available for distribution repairs and replacements.

3.4 DISTRIBUTION SYSTEM IMPROVEMENTS

General Improvements

In addition to system pressures and flows, an evaluation of system redundancy revealed areas of concern. Large areas (including the Anderson PRV zone, Edison booster zone, and the portion of the WTP boosters zone west of Silver Creek) in the system are currently supplied by a single line that crosses Silver Creek. In the event of a rupture at any point along that single line, numerous services would be without water until a repair could be made. The hospital area is one area in particular with this concern.

Critical redundancy needs were considered to be the highest priority among the *distribution system* improvements. Along with the storage, pumping, and operational improvements, the recommended distribution improvements are illustrated in Figures 4 and 5 in Appendix A, and are further explained in the CIP project sheets in Appendix G.

General Improvements for Fire Protection

The areas in the system with inadequate fire flow were evaluated and prioritized with input from city staff and the local fire authority. The fire flow improvements are targeted to provide target fire flows of 1,000 gpm in residential areas, 2,500 gpm in commercial areas, 4,000 gpm for industrial, and site specific fire flow requirements identified by the local fire authority. These improvements are also illustrated in Figures 4 and 5 in Appendix A.

Improvements to Address Low and High Pressures

There are currently areas throughout the distribution system that have unacceptably high or low pressures. For areas of low pressure, some operational changes to the pressure regulator valve settings or moving some services to the next higher pressure zone have been included in the priority improvements. For areas with high pressures, individual pressure regulators could be employed (Keller Associates recommends that individual pressure regulators be required on all new construction where pressures are anticipated to exceed 80 psi).

3.5 REGIONALIZATION AND SERVICE TO MOUNT ANGEL

Mt. Angel is a city approximately 3 miles north of Silverton. Mt. Angel's water supply comes from groundwater. The aquifer supplying the potable water supply has reportably been declining for many years. In 1997, Westech Engineering completed an engineer's report titled "Mt Angel – Silverton Water Intertie Preliminary Cost Estimate." The cost estimate included 3.6 miles of 16-inch pipeline and an estimated cost of approximately $1.8 million. Issues not fully resolved at the time of the cost estimate included water rights, land use, environmental requirements, and right-of-way. In June of 1998, Moore, Breithaupt & Associates subsequently completed a financial report for the intertie project. This report also summarized the potential benefits and drawbacks of the project to each community.

In August of 2010, Murray, Smith & Associates, Inc. completed a Water System Master Plan & Water Management and Conservation Plan for the City of Mt. Angel. According to this report, Mt. Angel's average day demand is anticipated to increase from 0.42 MGD in 2010 to 0.52 MGD in 2030. Similarly, the peak day demand is anticipated to increase from 0.84 MGD to 1.05 MGD.

This report concluded that "The City has adequate water rights and supply capacity to meet current and future water demands within the planning horizon of this document; therefore no additional supply sources are required in the 20-year planning horizon." However, in subsequent conversations with Mt. Angel's city manager, the city recognizes that while the existing supply may be adequate for the planning period, a surface water supply may eventually be needed for the city.

The City of Silverton should anticipate being approached by Mt. Angel in the future as Mt. Angel looks for a more long-term regional solution to their water supply. Supplying water for Mt. Angel will require that adequate supply, treatment, and water right capacity be obtained to service Mt. Angel. Delivering flow to Mt. Angel may also require additional transmission improvements within the City of Silverton.

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4.0 WATER TREATMENT PLANT EVALUATION

4.1 OVERVIEW AND BACKGROUND

This section of the Silverton Water Master Plan will complete a broad facility evaluation for the City's Water Treatment Facility (WTF). The purpose of the concept level evaluation is to approximate existing capacities based on regulatory and industry-accepted hydraulic loadings, identify bottlenecks, and discuss alternatives for meeting the anticipated needs of the system based on regulatory changes and existing and future demands. The information presented in this chapter is meant to identify and make recommendations for existing and future water quantity and quality concerns. This effort builds on available water quality data (see Appendix E), and previous studies and planning efforts, as well as the most recent sanitary survey (dated November 17th, 2009, see Appendix F). The WTF evaluation considers source water facilities, water quality, facility capacities, general plant conditions, operational considerations, and regulatory requirements.

The City of Silverton's WTF is located near the intersection of E. Main St. and S. Ames St. The WTF receives raw water from Abiqua Creek (primary source) and Silver Creek (secondary source). The plant uses conventional treatment techniques (e.g. coagulation, sedimentation, filtration) to treat the water to a level that meets the requirements of the Safe Drinking Water Act and the Oregon Department of Human Services, Public Health Division standards for potable water (OAR 333-061-0030 and 0032). The WTF is arranged in a campus that includes two independent water treatment facilities. Also located on the campus are two reservoirs (1.0 MG and 1.5 MG) that provide the primary storage and contact time for the treated water as well as the backwash water supply for the old plant (new plant receives backwash water from the High Level Reservoir via the distribution system). The storage reservoirs provide water to the clear well zone (aka low zone) by gravity, and to the upper pressure zones via the High Level Pumphouse.

4.2 SOURCE WATER

The source water is comprised of two creeks (Abiqua and Silver Creek) that feed from different watersheds. This configuration makes the Silverton water supply less vulnerable to an event within one of the watersheds that would significantly alter the water quality being delivered to the treatment facility. While this provides some level of protection to the city, it also creates a unique challenge to the operation of the plants. The water sources, while similar, also have unique characteristics that change the treatment approach within the plant.

An evaluation of the source water facilities was not a part of the scope of this study. However, where information has been provided by the City, Keller Associates has attempted to integrate it into this report.

4.2.1 Abiqua Creek Facilities

Water from Abiqua Creek is conveyed by gravity directly to the WTF. The City's Abiqua water right was established in 1916 (the oldest on the creek), and is for 10.0 cfs (or 6.5 MGD). The intake screen, installed in 2001, has a maximum "through slot" velocity of 0.78 ft/sec, an Oregon standard "approach" velocity of 0.4 ft/sec, and a theoretical 6.5 MGD flow rate. Immediately downstream of the screen is the transmission pipeline to the WTF pretreatment, 7 miles in length, with a theoretical flow capacity of 7.4 cfs (or 4.8 MGD). The transmission pipeline diameter reportedly varies in size from 20" to 24", with the smaller 20-

inch line limiting the transmission capacity. Improvements to the pipeline have been made over the years, with the most recent completed in 1994.

City staff report that the fish ladder was constructed in the 1950's. A study of the fish ladder was completed in May of 2008 by the engineering firm Black and Veatch. The conclusion of the study was that the fish ladder is in poor condition and does not meet current fish passage criteria. The City is not required to make fish ladder improvements until such time as a project to improve or modify the Abiqua Dam is undertaken.

The intake at Abiqua Creek reportedly suffers from sediment build-up and blinding due to leaves during the fall season. Additionally, the intake is at risk of plugging with leaves during power outages, because the cleaning mechanism used to clear the screens does not have an emergency power supply.

Recommendations: Keller Associates recommends that the City proceed with plans to equip the existing intake with standby power provisions. Keller Associates also recommends that the intake be more thoroughly evaluated before making any significant capital investments. Given the reported condition and limitations of the existing intake, Keller Associates recommends that the facility be evaluated further to determine remaining life and possible design improvements. In designing intake improvements, the following considerations should be made:

- Intake Velocities. Intake velocities should be evaluated to prevent the deposition of sediment.
- Cleaning Provisions
    - Hydraulic Flushing: Since some deposition will still likely occur, valves should be included that allow the operations staff to increase the velocity across the bottom of the intake channels to provide flushing
    - Equipment Access: The redesigned intake should also accommodate equipment such as a backhoe for dredging and mechanical cleaning of the channels
- Screen Design: The new intake should utilize screens that allow cross velocity cleaning for leaf removal, with a fine opening to prevent leaves from being pushed through the screens by hydraulic force. The screen could be fitted with air or water sparge lines, which in some instances have proven successful, to reduce the hydraulic force that pins the leaf material to the leading edge of the screen. The screening facility should be configured in a manner that reduces the negative pressure against the screen, making it safer for the fish species in the creek. The design should also account for a loss of screen capacity during the fall leaf season.

4.2.2 Silver Creek Facilities

The Silver Creek water right, established in 1911, is for 5 cfs (or 3.2 MGD). The current measured pump capacity of the intake is 2.3 MGD with both pumps running, and 1.7 MGD with a single pump running. The City has a water right to use 14 cfs (9.0 MGD) of the water stored in the Silverton Reservoir. The 14 cfs can be released from the reservoir and diverted from the current intake on Silver Creek, but is limited to 1,300 Ac.ft per year. The intake is reportedly old and in poor condition. Preliminary engineering evaluations were completed by Tetra Tech for a project to increase the size of the 2,200-foot long 12-inch

pipeline from Silver Creek to the WTP site, to 18 inches, and increase the intake pump capacity to provide a total of 8.5 cfs (5.5 MGD) to the WTP.

Silver Creek also includes a reservoir which is operated and maintained by the City. This reservoir provides limited water storage. An evaluation of the reservoir was not completed as part of this study.

Recommendations: A budget estimate (prepared by others) for the Silver Creek intake improvement has been included in the capital improvement plan.

4.2.3 Source Water Quality

The City's primary and preferred source is Abiqua Creek, which is a perennial stream with good water quality. During the late summer as the flow in Abiqua Creek diminishes, the City blends water from Silver Creek to support the late summer demands.

The Abiqua water source does not have a reservoir to store water for use throughout the year. The lack of storage within this watershed reduces the risk of production of disinfection byproducts. It also, however, fails to provide for settling of winter and spring turbidities. High turbidities can be experienced from Abiqua Creek during the late fall, winter, and spring rainy season. Chart 4.1 illustrates the combined source water turbidity concentrations. Turbidities are generally lower than 10 NTU. Higher turbidity events generally correspond to the rainy season. The highest turbidity event since 2008 occurred during January of 2009, when the turbidity spiked at just over 70 NTU.

Chart 4.1 – Silverton Raw Water Turbidity

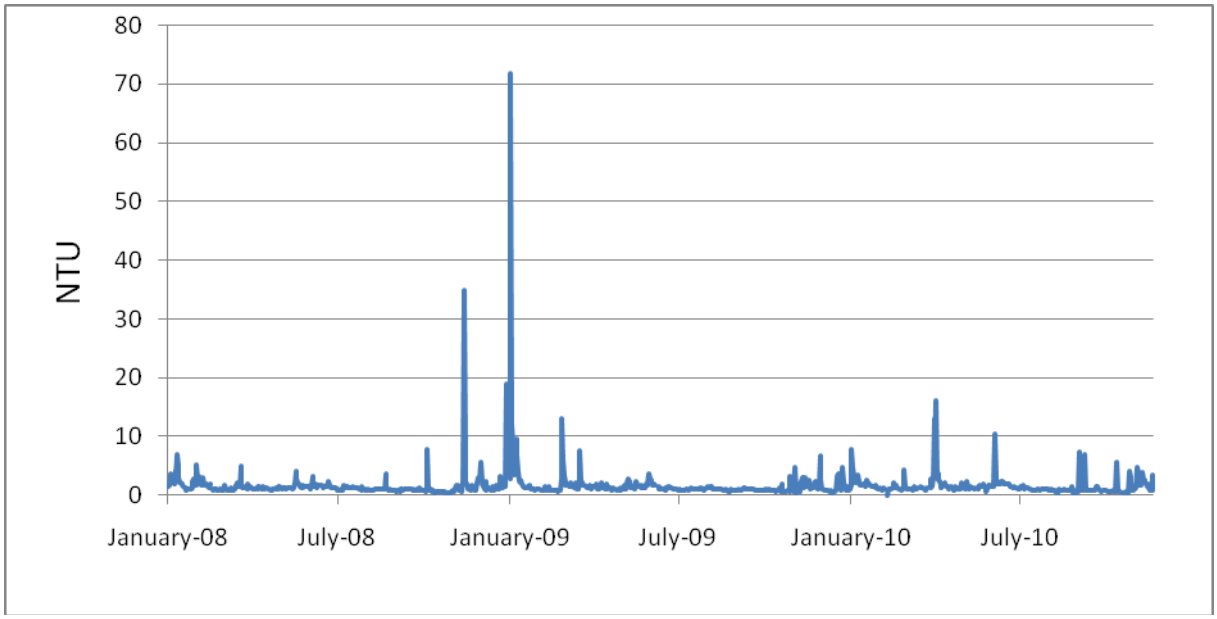
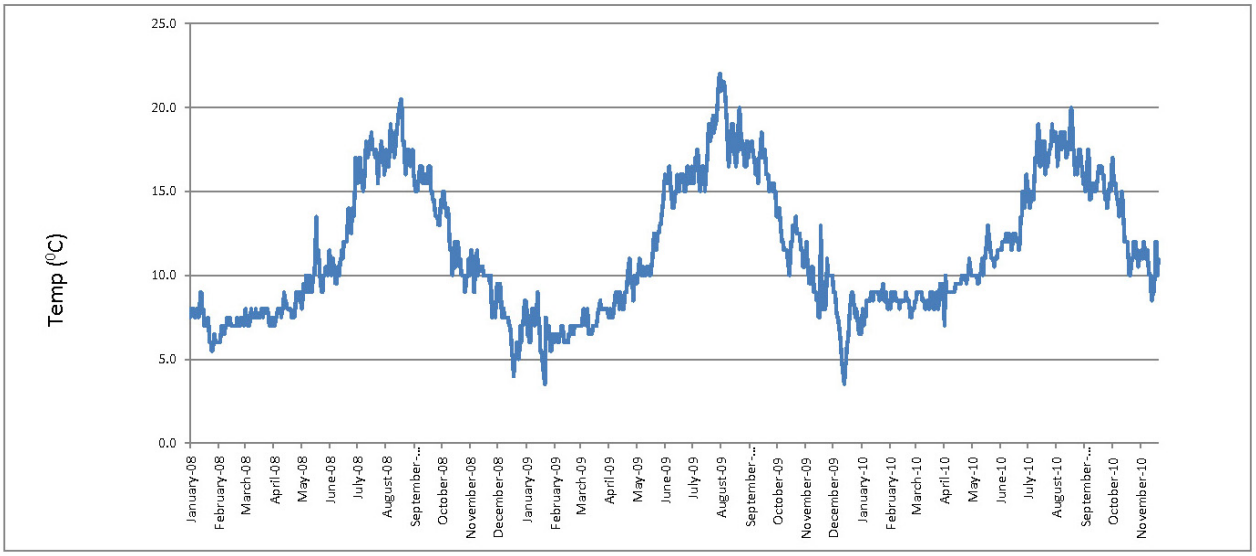


Chart 4.2 shows the raw water temperature for the combined influent to the Silverton WTF. Temperatures are generally below 10°C (50°F) in the winter, with lows dipping below 5°C (41°F). Summer temperatures generally exceed 15°C (59°F) with peak temperatures exceeding 20°C (68°F).

Chart 4.2 – Silverton Raw Water Temperature



According to City staff, Silver Creek produces good quality water, with no complaints of color, taste, or odor. The upstream reservoir is believed to provide a "wide spot" to slow the water velocity of the creek, allowing some of the sediment to settle. Algae growth is not believed to be a concern within the Silver Creek watershed because of its relatively small storage volume and because shadowing of the reservoir (due to the tree canopy and terrain surrounding the reservoir) does not allow for significant growth of algae.

Both sources of water experience seasonal variations in water characteristics, including temperature, turbidity, dissolved organic material, and pH, that should be monitored. The following discussions explain the rationale for monitoring these parameters.

Cold temperatures will significantly slow the reaction time of the coagulant, and can cause the formation of flocculation particles late in the treatment process. The action that is typically taken to prevent this is to reduce the flow rate within the plant to allow the coagulant the necessary time to react and flocculate. If this condition is not recognized or if the City's demand requires a higher production rate from the plant, the result can be the formation of flocculation particles within the filters and clearwells which lead to violations of turbidity limits, and complaints of cloudy or dirty water. The plant staff has indicated that, in the current plant configuration, the water becomes difficult to treat when the water is at or below 6 degrees Celsius (43 degrees Fahrenheit).

Along with cold temperatures during the winter and spring months the sources see an increase in turbidity due to high rainfall. Spring rainfall brings high turbidity, which means the treatment process must be optimized for turbidity removal. The flows are typically still low, but the effect of the cold temperatures on the coagulation chemistry compounds the difficulty of removal of turbidity and dissolved organic contaminants.

The fall season (particularly November) brings the most difficult treatment conditions. Fall rains in the Cascade region of the state begin to wash dissolved organic materials from the fresh blanket of leaves on the forest floor. Humic and fulvic acids that exist in the organic materials are leached into the water as predominately dissolved acids. At the same time, the water is typically moderate in temperature and relatively clear (devoid of turbidity).

The operators will likely find it challenging to adjust the chemistry of the water to enhance the removal of the dissolved acids. This typically requires adjustment of pH, stabilization of the alkalinity, and careful dosing of coagulant through a process known as enhanced coagulation. The organic acids that are dissolved in the water have the potential to impart taste, odor, and color to the water, all of which are considered aesthetic secondary drinking water standards. The consequence of inadequate treatment during these water conditions is the formation of disinfection by-products (DBPs) by the disinfection process. Monitoring of raw water total organic carbon (TOC) will provide the operator with data to help adjust the plant operation to optimize TOC removal.

The City has done a good job of treating the raw water to remove TOC and avoid the formation of DBPs. TOCs, in this case organic acids, are considered DBP precursors because of their reaction with chlorine and bromine and the carcinogenic nature of the chemicals that are formed by this reaction. DBPs fall into two categories, total trihalo methanes (TTHM) and haloacetic acids (HAA5). Table 4.1 is a summary of the City's latest sampling results for DBPs.

Table 4.1 – Disinfection By-Product Sampling Results (Finished Water)

DBP Chemical	Maximum Contaminant Level (MCL), mg/L	Measured Concentration, mg/L
TTHM (trihalomethanes)	0.080	0.00627
chloroform		0.00523
bromodichloromethane		0.00104
dibromochloro methane		Non Detect (ND) @ 0.0005
bromoform		ND @ 0.0005
HAA5 (haloacetic acids)	0.060	0.00339
monochloroacetic acid		ND @ 0.003
dichloroacetic acid		0.00339
trichloroacetic acid		ND @ 0.003
monobromoacetic acid		ND @ 0.003
dibromoacetic acid		ND @ 0.003

Recommendations: Independent water quality data should be collected for each of the source waters. This data should, at a minimum, include daily temperature and turbidity. In addition, it would be beneficial to test each source water's alkalinity, TOC, and color (along with the current pH and temperature readings) on a daily basis. This water quality data will help the operations staff establish trends within their watersheds that can be used for predictive seasonal adjustments to the treatment facilities in the future.

4.3 TREATMENT FACILITIES

Silverton has two treatment facilities at the WTF site, Plant 1 and Plant 2. Silverton's two plants operate independent of each other. Plant 1 was constructed in 1957 with upgrades in 1962 and 1972, and PLC upgrades in 1994 (note – typical PLC life is 20 years). Plant 2 was constructed in 1982. This section will describe each treatment plant and identify areas where further analysis is warranted.

The city's staff has established a maximum flowrate during the summer months which is the most treatable time of year. The plants seasonal treatment capacities (as reported by City staff) are summarized in Table 4.2.

Table 4.2 – Seasonal Treatment Capacity vs. Peak Day Demands

Description	Summer Flow (MGD)	Fall/Winter/Spring Flow (MGD)
Plant 1 Treatment Capacity	2.5	1.5 – 2.0
Plant 2 Treatment Capacity	3.5	2.0 – 2.5
Total Treatment Capacity	6.0	3.5 – 4.5
Less Backwash*	(0.36)*	(0.35) – (0.45) **
Effective Treatment Capacity	5.6	3.2 – 4.1

*Assumes 6 % based on typical conditions during peak summer demands.
**Assumes 10% based on typical conditions during peak non-summer demands.

When compared to existing and future (2035) peak day demands of 2.92 MGD and 5.02 MGD, respectively, the existing treatment plants appear to have adequate capacity to meet projected summer demands.

4.3.1 Plant 1

Plant 1 is made up of a single treatment train that follows conventional treatment techniques utilizing coagulation, flocculation, sedimentation, and filtration. The coagulation stage (rapid mix or flash mix) uses a small basin and high intensity mixer to disperse the coagulant (in this case liquid alum) which starts the chemical reaction and leads to the formation of floc. The mixing intensity of the flash mix process is unknown and could be from 200 to 1000 sec-1 but likely is within the 600-1000 sec-1 range. The plant staff report that the seasonally variable water causes challenges to this process. This is normal within the coagulation process, as variable chemistry and temperature change the reaction kinetics of the coagulation process.

The next stage of the treatment plant is flocculation. Plant 1 utilizes a two-stage flocculation process using slow and intermediate flocculation (horizontally-mounted paddle flocculators) with a reducing mixing intensity to build floc particles. The plant is operated in a sweep floc approach, building a large/light floc particle to clarify the water. The flocculation process is defined by mixing intensity; the intensity within the conventional plant is unknown but is likely within the 10-60 sec-1 range. The next stage of treatment is pre-sedimentation, which further matures the flocculation particles to aid in the clarification process.

Following the pre-sedimentation basin are two settling basins. The theoretical hydraulic retention time within the basins is estimated to be 2 hours based on a flow rate of 1 MGD. At the reported 2 MGD plant capacity, the estimated retention time would be 1 hour. The basin length to width ratio is 4.6:1, which falls within the typical industry range of 3:1 to 5:1. The weir loading rate of this sedimentation process is unknown, and should be calculated to ensure the sedimentation basin isn't being overloaded. The industry accepted loading rate for conventional sedimentation is 20,000 gpd per ft of weir length.

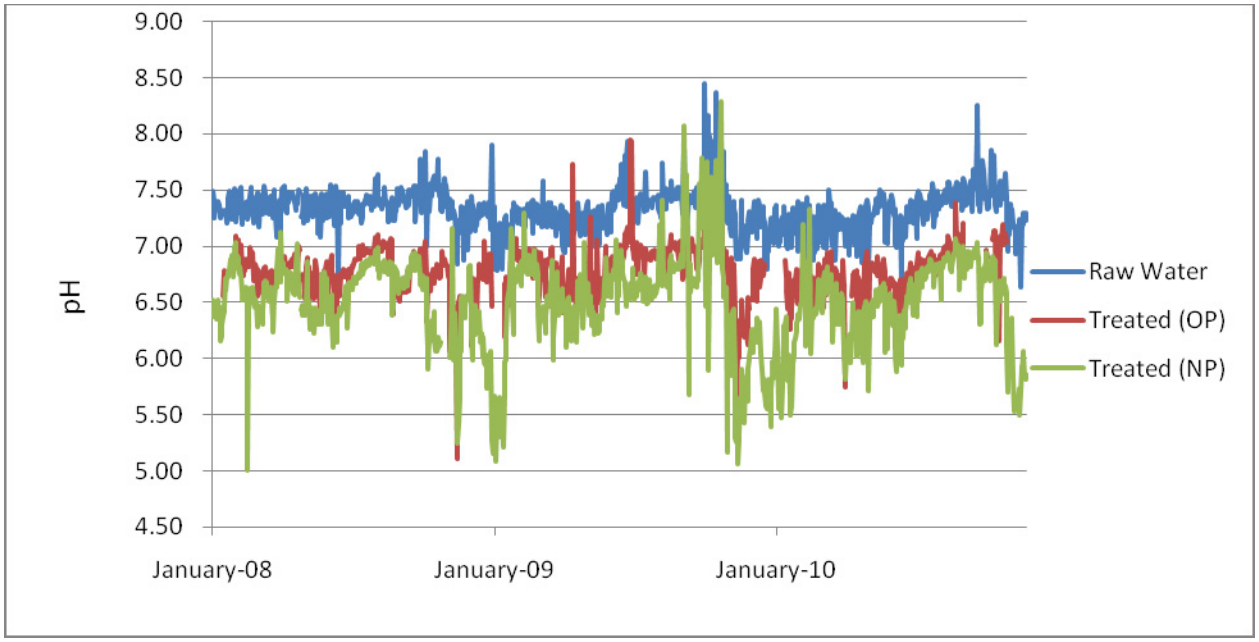
The sedimentation basin feeds two dual media filters (anthracite over sand). The filters were upgraded in 1962 with the addition of a surface wash system. The filters utilize a Leopold filter underdrain system which was installed in 2000. The plant staff reports that the filter backwash is uniform, and the surface wash system in combination with the new underdrain blocks works well. The filters do not utilize air scour during the backwash phase. The operators remove mud balls from the surface of the filters on occasion, which is normal for most surface water treatment facilities. Based on interviews with the operations staff, the current configuration of these filters appears to be well optimized.

The theoretical design capacity of each filter in Plant 1 is 1,273 gallons per minute (gpm). This gives a total plant design capacity of approximately 3.66 MGD through the two filters. The actual production of the old plant is somewhat less than this theoretical design capacity. The peak production of the plant is presented in Table 4.2. These flows have been confirmed by City staff during operational periods when Plant 2 has been offline.

The summer months typically provide the most treatable water due to the warm temperatures and the absence of algae within Silverton's water shed. Plant 1 struggles during other times of the year, and due to seasonal temperature and turbidity changes, the capacity of the plant can significantly decrease. One example of this seasonal decrease is during the winter months, when the cold water temperature significantly increases the reaction time for the coagulant. This requires the plant staff to reduce the flow rate of water through the plant to increase hydraulic residence time and give the alum time to react.

Another example of a seasonal challenge is the inability to backwash Plant 1 filters at times. The staff indicates that when this happens, the plant has to be shut off and restarted 24 or more hours after the incident. Further investigation should be completed to identify the occurrence of this poor performance. Keller Associates suspects that this issue is related to water temperature, pH, and the specific reaction chemistry of alum. The plant should be evaluated during one of these periods and should be consulted to determine if the coagulant dose is in the correct range for the measured pH.

Chart 4.3 – Raw Water and Treated Water pH for Plant 1 (OP) and Plant 2 (NP)



A second treatability concern occurs in late November when the water is cold and contains high color. The cold water, combined with high rainfall in the watershed, leads to conditions that produce water that is difficult to treat. The older conventional treatment technologies utilized in Plant 1 are not capable of treating these conditions as efficiently as some of the newer treatment technologies being used today.

Plant 1 uses a technology approach that does not take advantage of the knowledge gained from the past 50 years of water treatment research. This presents a challenge to the operators, as they are tasked with meeting the new regulations that are defined by EPA and enforced by the DHS. In addition to the outdated technology, the age of Plant 1 presents concerns with the basins. The concrete basins are approaching the end of their life as signs of decay are evident throughout the basins.

The concrete has cracked and spalled and aggregate is exposed throughout the plants basins. Replacement of this portion of the plant would replace the structure and allow a higher treatment rate within the footprint that the plant currently occupies.

4.3.2 Plant 2

Plant 2 is a conventional treatment facility that utilizes an upflow solids contact clarifier followed by four dual media filters. The design flowrate for the plant is presented in Table 4.2. As with Plant 1, the design flowrate of Plant 2 is different than the theoretical operational capacity of the plant. Plant 2 is not limited by the capacity of its filtration, but is limited by the capacity of the upflow solids contact clarifier. Based on the clarifier design, the design flowrate of the plant produces a velocity within the clarifier that will not allow the solids blanket to remain within the tubes.

The treatment process employed by Plant 2 is a technological improvement over conventional treatment which was intended to provide a higher capacity of treatment within a smaller footprint than conventional treatment.

The first stage of treatment in Plant 2 is coagulation. Alum is introduced into a high energy mixer. The mixing intensity within the mixer is unknown; the range for this type of process is 600 to 1,000 sec-1. The water then moves to the contact clarifier.

The contact clarifier is a large circular basin that is filled with settling tubes to enhance the clarification process. The principle of the contact clarifier is to retain a portion of the flocculated material within the settling zone of the process, allowing the treated water to come into contact with a blanket of flocculated material. This contact enhances the formation of floc and clarification of the water.

The clarification process is sensitive to both velocity and temperature of the water. The velocity affects the clarifier's performance by pushing the flocculated blanket out of the top of the settling tubes. Temperature affects the process by changing the density of the water, colder water is heavier and can cause the flocculated material to float out of the flocculation tubes. The colder water results in a required lower flowrate through the clarifier. In both instances if the blanket is washed out of the clarifier, it ends up on the filters and will lead to filter blinding.

The clarified water is treated by four dual media rapid gravity filters. The filters are made up of anthracite over sand, with a gravel support and underdrain system. The underdrain system is a perforated pipe that runs as laterals within the gravel layer. This perforated pipe acts as the filters underdrain system and backwash plenum. The filters do not use air scour nor do they have surface wash. City staff has reported that the underdrain system seems to work well. They have not identified any obvious unbalanced filtration or backwashing. Indications of these unbalanced events would be media voids during filtration of uneven cleaning of the bed after backwashing.

4.3.3 Plant Recommendations

Keller Associates has identified two groups of improvements for the water treatment facility. The first group addresses immediate needs (0-5 years), and includes items pertaining to current operation and/or information valuable for long-term improvements. Keller Associates recommends the City of Silverton consider the bulleted list to 1) address immediate operational needs, 2) gather additional data about the performance of the plants, identifying in detail the plant specific needs, and 3) collect detailed information for the design of future facilities. The second group addresses long-term operational needs of the treatment facilities (6-20 years). The following list can be utilized to write two scopes of work, one for immediate short-term improvements, the other for a detailed plant analysis.

Plant 1

Priority 1 Improvements (0-5 Years):

- Detailed documentation of pH, temperature, alkalinity, and alum dose during periods when plant stops operating and has to be shut down
- Connection of standby power to Plant 1

Priority 2 Improvements (6-20 Years):

- Chemical feed improvements to stabilize Plant 1, identification anticipated under the detailed treatment plant master plan
- Replacement of Plant 1 with a treatment facility that utilizes current technology

Plant 2

Priority 1 Improvements (0-5 Years):

- Detailed documentation of pH, temperature, alkalinity, and alum dose during periods when Plant 1 stops operating and has to be shutdown

Priority 2 Improvements (6-20 Years):

- Replacement of the clarification process to increase Plant 2 capacity

Complete Facility

Priority 1 Improvements (0-5 Years):

- Detailed treatment plant feasibility study and pre-design. As described in detail in section 4.6.1.3
- Flow monitoring upgrades on each filter within both plants
- Upgrade of the plant SCADA system and monitoring points
- Backwash instrumentation and automation

- Chlorination improvements to allow for chlorine dosing to either plant

- The peak operational capacity should be verified for Plant 1 and Plant 2 during each of the seasons. This would provide valuable information to City staff when planning improvement projects to the water treatment facility

4.3.4 Treatment Plant Clearwells

Currently the City of Silverton relies on two reservoirs to provide clearwell storage to the treatment processes. Clearwell storage is an important part of a treatment facility that has to be managed to be available to the treatment process. The clearwell provides backwash water to the plants either through pumping or by gravity through elevated storage. Since a certain volume of treated water has to be maintained to allow the filters to be cleaned when needed, this capacity is not available to the system to meet demands.

The second major role the clearwell storage capacity provides is contact time (CT) for the disinfection chemical. The disinfectant is required to be held in contact with the drinking water supply for a calculated amount of time at a determined concentration in order to inactivate bacteriological contaminants. This time varies with water pH and temperature, and must be met before the water reaches the first customer.

The allocation of storage volumes within a reservoir that is also serving as a clearwell includes volume reserved for backwash and volume for CT. The volume required for backwashing is calculated based on past plant performance; the CT volume requires tracer study of the reservoir. The tracer study defines the flow characteristics of the reservoir and must be completed independently for each reservoir. At the time this study was completed, the City was planning on conducting a tracer study, but had not yet completed it. EPA has developed general tables that are conservative for various levels of baffling. These tables recommend percentages of clearwells that can be considered for CT credit based on the configuration of inlet, outlet, and baffling.

Recommendations:

Priority 1 Improvements (0-5 Years):

- Complete tracer study during summer (peak flow) and winter (cold temperature) seasons

- Include tracer study results and baffling recommendations in the detailed treatment plant master plan

Priority 2 Improvements (6-20 Years):

- Develop an operational plan or install baffling within the clearwell reservoirs to accommodate CT as identified within treatment master plan. Coordinate any clearwell improvements with Priority 2 storage recommendations

4.4 WATER SYSTEM SURVEY

On November 17, 2009, the Department of Human Services Public Health Division conducted a Water System Survey. The findings of this survey were documented in a letter

to the city dated January 12, 2010 (see Appendix F for copy). The survey identified the following significant deficiencies and rule violations:

1. Tracer study of reservoirs needs to be redone
2. No means to adequately determine flow rate on contact chamber effluent lines
3. Turbidity profiles need to be conducted at least quarterly
4. Master Plan needs to be current

The following section discusses each of the four items identified in the DHS letter referenced above.

Item 1 – The City has plans to complete the reservoir tracer study. The tracer study should be conducted after the flow metering equipment has been installed (Item 2) and an adequate amount of flow data has been gathered. This study requires that the plant be manipulated and placed into a position that could cause plant failure due to low clearwell levels. Because of this, the operations staff is well advised to collect flow data and to wait for a season that the raw water is reasonably treatable and the system demands are low.

Item 2 – Additional flow metering is on the Priority 1 recommended improvements.

Item 3 – The city addressed this item in his response to DHS, and committed to generate the requested turbidity profile report from the data that the plants SCADA system has collected. A SCADA improvement project has been recommended for the plants and under this improvement a turbidity profile for each filter could be created to provide the city with the data required on an ongoing basis.

Item 4 – The City is currently undertaking a master planning effort, which is this document. One of the treatment plant recommendations is for the completion of a plant specific master plan or feasibility study. This plan would complete a detailed analysis of the individual processes as well as review site locations for future expansion or replacement of components of the existing facility.

In addition to the deficiencies noted, the Public Health Division provided a number of additional comments and recommendations intended to assist the City in improving their operations. Some of the comments that may have implications to the capital improvement plan are highlighted below:

- Plant 1 could be rerated, potentially allowing for a reduction of the disinfection requirement

- Sodium hypochlorite addition only occurs on the new filter plant effluent line

4.5 TREATMENT CONSIDERATIONS AND RECOMMENDATIONS

This section summarizes preliminary recommendations for the water treatment plant. Additional study effort is recommended before implementing any large capital improvements.

4.6 SUMMARY OF RECOMMENDED TREATEMENT RECOMMENDATIONS

4.6.1 Priority 1 Improvements (next 5 years)

4.6.1.1 Operational Improvements

1. Detailed documentation of pH, temperature, alkalinity, and alum dose during periods when Plant 1 stops operating and has to be shutdown. This should be collected for both plants

4.6.1.2 Capital Improvements

1. Connection of standby power to Plant 1
2. Flow monitoring upgrades on each filter within both plants
3. Upgrade of the plant SCADA system and monitoring points
4. Backwash instrumentation and automation
5. Chlorination improvements to allow for chlorine dosing to either plant

4.6.1.3 Water Treatment Plant Facility Planning Study

The City has significant future treatment needs. A facility planning study should be completed to better define and prioritize these needs. Elements of the study could include the following:

- A thorough review of design criteria and operational performance with more detailed calculations of hydraulic capacities and treatment performance. This could include:
    - Additional water quality monitoring (refer to section 4.2.3)
    - Calculating weir loading rates (refer to section 4.3.1)
    - Measure mixing intensity within the following processes (if continued long-term operation is anticipated)
        - Flash mix
        - Flocculation (each stage)
    - Measure weir overflow rate in sedimentation basin (if continued long-term operation is anticipated)
    - Document filter performance (run time vs. backwash) for each individual filter
    - Measure and document seasonal capacity for each plant
    - Review daily plant shut-down versus 24-hour operation scheme

- Complete tracer study during summer (peak flow) and winter (cold temperature) seasons

- Evaluation of alternatives to major plant upgrades, including a new treatment plant to replace the existing Plant 1

- A detailed evaluation of alternative treatment technologies - based on our understanding of the treatment plant, the most promising treatment alternatives would include the following:

  - Membrane Treatment

    - This treatment technology produces high quality water but it is sensitive to certain water quality parameters such as silica. The plant master plan will review the appropriateness of the technology based on the raw water quality. Membrane technology can also be expensive to purchase and operate. All of the water within a membrane plant is typically pumped under moderate to high pressure to produce the finished water.

  - Adsorption Clarification

    - This technology is ideal for raw water quality that is high in dissolved contaminants. These contaminants can include iron, manganese, organic acids, etc. However, this technology does not treat high turbidity waters well. This process is efficient and does not require pumping to operate. It may require feeding additional chemicals to oxidize the dissolved contaminants and converting them into a removable form.

  - Ballasted Clarification

    - This technology is utilized to treat water that can experience rapid water quality changes including turbidity. This process can also be used for enhanced coagulation to remove dissolved contaminants. The process is forgiving operationally and is not susceptible to changes in water temperature or turbidity spikes. The process does require more operator attention and utilizes several different chemical feed systems.

- Baffling recommendations for improved CT of the treatment facility clearwells

- Alternative site considerations. The existing treatment plant site is essentially land locked. Identifying potential future sites for expansion should be completed so that the land can be secured. Chart 4.4 illustrates potential alternative treatment plant sites that could be considered. An advantage of Alternative Site 1 is the proximity to existing controls, booster station, clearwells, etc. Both sites 2 and 3 are located along the raw water supply line from Abiqua Creek. One of the advantages of Alternative Site 3 is that the existing capacity of the gravity feed from Abiqua Creek would be much higher because of the lower plant elevation.

- Review plant staffing requirements based on sensitivity of treatment process to upset and plant operation scheme.

Chart 4.4 – Alternative Future Treatment Plant Sites

4.6.2 Priority 2 Improvements

- Secure additional land for treatment
- New Plant 1: because of the age, outdated technology, and treatment limitations for Plant 1, Keller Associates recommends that the City plan on replacing the existing plant 1 sometime in the next 5 to 15 years. The details of a major plant upgrade or replacement should be developed as part of the treatment plant master plan.
- Plant 2 Upgrades: the solids contact clarifier should be modified or replaced to allow the City to effectively use the filtration capacity that exists within this plant.

- Chemical feed improvements to stabilize Plant 1, identification anticipated under the detailed treatment plant master plan.
- Develop an operational plan or install baffling within the clearwell reservoirs to accommodate CT as identified within treatment master plan

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5.0 RECOMMENDATIONS AND CAPITAL IMPROVEMENT PLAN

5.1 GENERAL

This section provides a summary of the recommended improvements discussed in Chapters 3 and 4. A capital improvement plan, which reflects opinions of probable costs for the recommendations and an order of priority, is also presented. Detailed cost estimates and project descriptions can be found in Appendix G.

Figures 4 and 5 illustrate the priority for each project. The prioritization schedule in the CIP was established by consulting with city staff and a technical review committee. Priority 1 projects generally correct deficiencies in existing storage, pumping, backup/redundancy delivery, distribution pipelines with little anticipated remaining life, priority commercial fire protection, and treatment facilities. Priority 2 improvements focus on additional fire protection, improved transmission, additional high maintenance areas, treatment plant improvements, and some additional improvements that will be required to service future growth. Priority 3 improvements are intended to provide the City a roadmap for future development and pipeline replacement projects, and further improve transmission and fire protection.

5.2 SUMMARY OF RECOMMENDATIONS

Storage Facilities

Keller Associates recommends a new 2.0 MG tank near the location shown in Figure 4 of Appendix A. This will accommodate the projected 2020 storage needs. A second future tank will be required after 2020. For planning purposes, the second tank is assumed to be located at the existing WTP site and have a capacity of 2.0 MG. Minor future upgrades are also recommended to the existing High Level Reservoir.

Booster Pumping Facilities

The following booster station improvements should be made:

- High Level Pumphouse - Construct a new booster pumping facility to replace the existing High Level Pumphouse. This new booster facility should be equipped with 3 or more pumps, have standby power, and be capable of serving the future demands for the upper pressure zones.

- Edison Road Booster Pumphouse - Complete minor upgrades recommended in the technical memo (Appendix C)

- Main Street Pump Station - Abandon existing pumping and electrical facilities. Maintain the existing PRV

- Pump station at new tank site - Construct a new booster pump providing additional backup supply and fire protection to the Edison Road booster service area. This should be included as part of the new tank project, and could be combined with mixing facilities.

- New Eastview Booster service area pump station - When development near the existing High Level Reservoir occurs, a new booster facility will be required to service

this area. The booster facility should be located near the existing tank. The hydraulic grade will be similar to the Edison Road booster service area.

Distribution Pipelines Improvements

Figures 4 and 5 illustrate priority and future distribution pipeline improvements. These pipelines are intended to replace existing undersized and/or old pipelines, improve fire protection, improve transmission, and extend service to new service areas.

Keller Associates recommends that the city work toward establishing an annual pipeline/meter/hydrant replacement program. Assuming an average project cost of $80/foot of waterline and a typical life of 75 years, the city would need to set aside approximately $330,000/year to replace the existing 58 miles of waterline. Establishing a replacement budget will also enable the city to complete priority 2 and future pipeline replacements/upgrades, and better allow for pipeline projects to be coordinated with street projects.

Operational Improvements – Distribution System

Table 5.1 below summarizes some operational improvements for the distribution system. The location of specific operational improvements is illustrated in Figure 4. Operational improvements OP2-OP5 are interrelated, and are part of combining two adjacent pressure zones with existing comparable pressures. These improvements will improve circulation and fire protection. Ideally, raising the pressures in the new combined pressure zone should be accomplished gradually so as to minimize potential impacts to customers.

Table 5.1 – Operational Improvements – Distribution System

ID (see Figure 4, Appendix A)	Description
OP1	Relocate existing service to High Level pressure service area
OP2	Open closed valve
OP3	Bypass / abandon existing PRV
OP4	Raise Ike Mooney PRV pressure settings to approx. 80 psi
OP5	Raise Water Street PRV pressure settings to approx. 78-83 psi
OP6	Set booster controls to turn on/ off with new tank levels

In addition to these improvements, we encourage the City to do or continue to do the following:

- Periodically complete water system audits to evaluate water loss. If water loss exceeds 10-15%, consider additional leak detection studies
- Continue existing valve exercise, hydrant exercise, PRV and backflow inspections/adjustments, meter repair, and flushing programs
- The SCADA system should be regularly updated and improved. Controls should be reviewed and adjusted from time to time (at least seasonally)

Water Supply and Treatment Improvements

Water supply and treatment improvements were summarized in Section 4.5 of this report.

5.3 CAPITAL IMPROVEMENT PLAN

Over 30 million dollars in capital improvements have been identified for the 25-year planning horizon. The capital improvement plan (CIP) summarizes the recommended system improvements that are anticipated to require capital beyond routine maintenance practices. Tables 5.2-5.4 of the CIP outline a prioritization schedule and provide an opinion of probable cost for those improvements. Costs are shown in 2010 dollars and represent concept level costs that should be updated as part of project pre-design efforts in the future. A more detailed description of these improvements and a breakdown of the cost assumptions can be found in Appendix G of this report.

If Priority 1 improvements are going to be phased over time, Keller Associates recommends that the Priority 1A improvements (total cost of $5,315,000) be completed first.

Table 5.2 – Capital Improvement Plan – Priority 1 Improvements

Project Identifier	Priority 1 Improvements	Opinion of Probable Cost
1A_RS	Rate Study Update	$35,000
1A_SC	Silver Creek Water Supply and Pump Station	$1,759,000
1A.1	New 2 MG Storage Tank and Booster Pump	$2,767,000
1A.2	2nd Supply to Anderson PRV Zone	$109,000
1A.3	Transmission to West Plateau Service Area	$565,000
1A.4	WTP Facility Planning Study	$80,000
1B	Water Treatment Plant Upgrades	$792,000
1C	Silver Creek Plaza Area Improvements	$494,000
1D	Western Avenue Improvements	$205,000
1E	Breyonna Way Loop	$35,000
1F	N. 3rd Street Improvements	$159,000
1G	Washington and Lincoln Street Improvements	$367,000
1H	Kent Street and Sweden Circle	$37,000
1I	Woodland Drive NE and Oregon Garden/Relocate backflow prevention on Oregon Garden	$210,000
1J	Hobart Road Improvements	$278,000
1K	New High Level Pumphouse	$664,000
	TOTAL PRIORITY 1 COST	$8,556,000

Table 5.3 – Capital Improvement Plan – Priority 2 Improvements

Project Identifier	Priority 2 Improvements	Opinion of Probable Cost
2A	N. 2nd Street Improvements	$309,000
2B	Cowing to Smith Improvements	$422,000
2C	Fiske Street Improvements	$205,000
2D	Industry Way Improvements	$256,000
2E	Pioneer and Evans Valley Improvements	$82,000
2F	Oak Street Improvements	$413,000
2G	Industrial Area Improvements	$350,000
2H	Main and 5th Improvements	$464,000
2I	Well and Orchard Improvements	$211,000
2J	Extend Service to Future Park	$28,000
2K	Future 2 MG Tank	$3,034,000
2L	Lewis Street Improvements	$284,000
2M	Water Street Improvements	$820,000
2N	Pine Street Improvements	$128,000
2O	Keene and Ash Street Improvements	$367,000
2P	High Level Tank Improvements	$255,000
2Q	Water Treatment Plant Upgrades	$9,999,000
	TOTAL PRIORITY 2 COST	$14,627,000

Many of the Priority 2 and 3 improvements will be triggered by growth. For those projects that will likely be designed and built by the development community, only the upsize costs are shown in tables 5.3 and 5.4. Upsize costs refer to the cost to enlarge the pipeline to accommodate a larger area than that required for the development. Refer to Appendix G for more detailed descriptions of assumptions and individual project details.

Table 5.4 – Capital Improvement Plan – Priority 3 Improvements (City Portion Only)

Project Identifier	Priority 2 Improvements	Opinion of Probable Cost
3A	Setness St, Quarry Ave, and Lanham Lane	$1,033,000
3B	Meridian Rd NE	$4,000
3C	Commerce Court and Industry Way	Privately Funded
3D	N. 1st Street from Jefferson Road to Hobart Road	$237,000
3E	Northwest 12-inch Loop (Hobart Road to Pine Street)	$149,000
3F	Pine Street from April Ln to Airport Rd.	$539,000
3G	West 12" line from Pine and April Ln, south to Railway Avenue	$70,000
3H	Clearwell Pressure Zone Loop from Westfield and Center westward and north to Railway Avenue	$61,000
3I	10" Connection from Safeway to Fire Department	$50,000
3J	Transmission from New PRV to Anderson PRV Zone	$1,395,000
3K	Cherry Street From Phelps to Welch	$54,000
3L	James St from Western to Pine	$322,000
3M	Loop around old high school site	Privately Funded
3N	N. 2nd from C Street to TJ Lane	$444,000
3O	N. 1st from A to C and Front St from A to C	$142,000
3P	N. 2nd from Main to B St	$214,000
3Q	Water St from Peach - Brown St, then Brown from N Webb to Schlador	$1,367,000
3R	Anderson PRV Zone Loop from Westfield and Center westward and northeast to Westfield and Main	$77,000
3S	Future Pioneer Rd Alignment from Crestview Dr to Oak St	$70,000
3T	Future Pioneer Rd Alignment from Skookum Dr and Eastview Lane to Evans Valley Rd	$54,000
3U	Eastview from Tillicum to Storage Reservoir	$275,000
3V	Booster and eastward extension from Eastview Dr. to Future Eastview Booster Service Area	$90,000
3W	Hawk Dr and Ike Mooney Rd	$11,000
3X	Extension into Silverton Mobile Home Estates	$230,000
3Y	Sunset Lane from Victor Point to Edison	Privately Funded
3Z	Connection from current High School site through mobile home park to Pine St	$154,000
3AA	Robinson St and Church St	$169,000
3BB	Norway from Chadwick to Oak St	$107,000
3CC	Kent Street from East Park to N. Ames St	$92,000
3DD	Maple Street near Grant and N. Water	$123,000
	TOTAL PRIORITY 3 COST	$7,533,000

In addition to the capital improvements outlined in Tables 5.2, 5.3, and 5.4, the City should budget and plan for periodic updates to the water master plan, computer model, and user rate study. For budget purposes, Keller Associates recommends the City plan on about $100,000 every five years.

5.4 POTENTIAL USER RATE IMPACTS

Potential user rate impacts were estimated to fund priority improvements and an ongoing replacement program. A cursory review of the city's budgeted expenses and revenues for FY 2010-11 show that there is no surplus revenue that could be set aside for priority

improvements and pipeline replacements. Keller Associates reviewed operating expenses and revenues with City staff and determined that there was a shortfall in revenue of approximately $154,000 in FY 2008-2009 and $61,000 in FY 2009-2010. Budget reserves, including the SDC funds, have been used in recent years to help pay existing debts and operating expenses. To balance the FY 2009-2010 budget would have required approximately 4.5% more operating revenue.

Funding for the recommended system improvements may come from any number of sources. This section presents potential user rate impacts if priority improvements are funded through a loan with debt service payments made through a user rate increase. Table 5.5 outlines the potential residential user rate impacts.

Table 5.5 – Potential User Rate Impact for Priority Improvements

Scenario	Average Monthly User Rate[1]
2009 Average Monthly User Rate	$27.17
Rate Needed to Balance Expenses and Revenue[2]	$28.40
Dec 2010 Adopted User Rate	**$30.76**
Priority 1A Improvements[3]	**$35.05**
All Priority 1 Improvements	$39.86
Priority 1 Improvements plus Replacement Program	$46.51

[1] Monthly rates based on average monthly water consumption of 990 cubic feet (based on 2009 water consumption data for single family residence)
[2] Assumes additional $61,000 in revenue needed to meet expenses.
[3] Assumes capital costs are reduced by the existing SDC fund balance, and that the project is funded by a 20-year loan at 4 percent interest.

Keller Associates also recommends that user rates be raised to account for increasing operation and maintenance costs, to fund priority capital improvement plans, and to begin developing a pipeline replacement / upgrade fund. Increasing the user rates could be phased over time to reduce the impacts on existing customers.

It should be noted that the scope of this study was not intended to include a comprehensive evaluation of water rates and system development charges. For a more detailed evaluation of user rate structures and impacts to specific user classes (commercial, industrial, residential), a separate rate study is recommended. A rate study could also look at specific financing elements/requirements for implementing the priority water system improvements.

5.5 POTENTIAL SYSTEM DEVELOPMENT CHARGE IMPACTS

System Development Charges (SDCs) for the water system were last evaluated in 2005 by FCS Group, Inc. The scope of this study included a brief look at potential impacts to the SDCs. Utilizing the same methodology developed by FCS Group, Keller Associates approximated the improvement and reimbursement components of the SDC. SDC calculations can be found in Appendix H, and reflect the following updates:

- A new, more comprehensive CIP
- Updated estimates for % SDC eligible for each item identified in the CIP
- Updated water system capacities based on master planning efforts
- Current population projections and meter equivalent estimates

Table 5.6 shows the existing and proposed SDCs for the City of Silverton. It should be noted that the scope of this study was limited to an update of the calculations using the previously developed methodology. This required that some assumptions be made with input from City staff. The City may wish to evaluate alternative methodologies, include additional requirements/elements, and reevaluate some of the original calculations as part of a rate study update.

Table 5.6 – Silverton Water System Development Charges

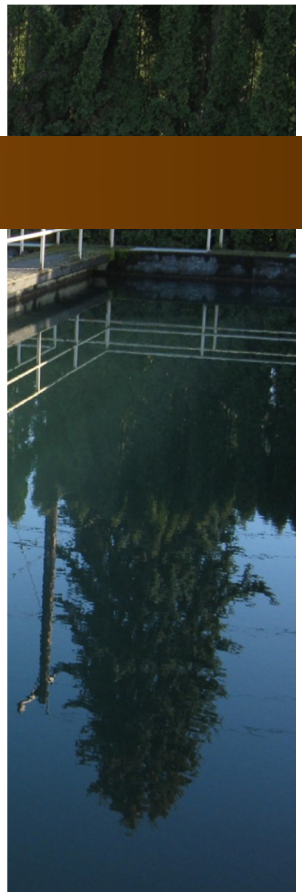
Component	2005 SDC Study (Recommended)	Existing (2010)	Proposed
Reimbursement Fee	$ 1,636	$ 1,703	$ 1,194
Improvement Fee	$ 2,595	$ 2,427	$ 3,051
Administration Fee	$ 150	-	-
Total	**$ 4,381**	**$ 4,130**	**$ 4,245**

The City may choose to implement a lesser rate than that proposed or choose to phase the increase over time. Concern about raising SDCs from the home building community has already been expressed. Failure to eventually increase the SDC rate would require that either fewer improvements be completed, or that user rates be increased to pay for a larger portion of the improvements.

5.6 CONCLUSION

The critical and more urgent issues facing the City's water system include additional storage, added system redundancy, fire flows, and improved transmission capacity. A more comprehensive look at the water treatment plant is also recommended. The City should begin now to implement the priority 1A components outlined in the capital improvement plan. Lower priority improvements can be completed as funding becomes available or in coordination with other improvements or routine replacement.

Because the planning elements that serve as the basis for the recommendations contained in this report tend to evolve over time, it is recommended the city consider intermediate updates to the facilities planning study every three to five years to reflect these changes. Computer model updates should be considered each year. The planning tools created in connection with this study, such as the water model and the utilities base mapping, should be updated every one to three years to reflect repairs, replacements, and other changes to the water system that will inevitably take place. Maintaining the plan and the planning tools will serve as the most effective means for the City to proactively manage this crucial component of their existing infrastructure.



APPENDIX A – FIGURES

Figure 1 – Study Area and Land Use
Figure 2 – Existing Distribution System
Figure 3 – Existing System Pressure Zones
Figure 4 – Priority 1 and 2 Improvements
Figure 5 – Priority 3 Improvements

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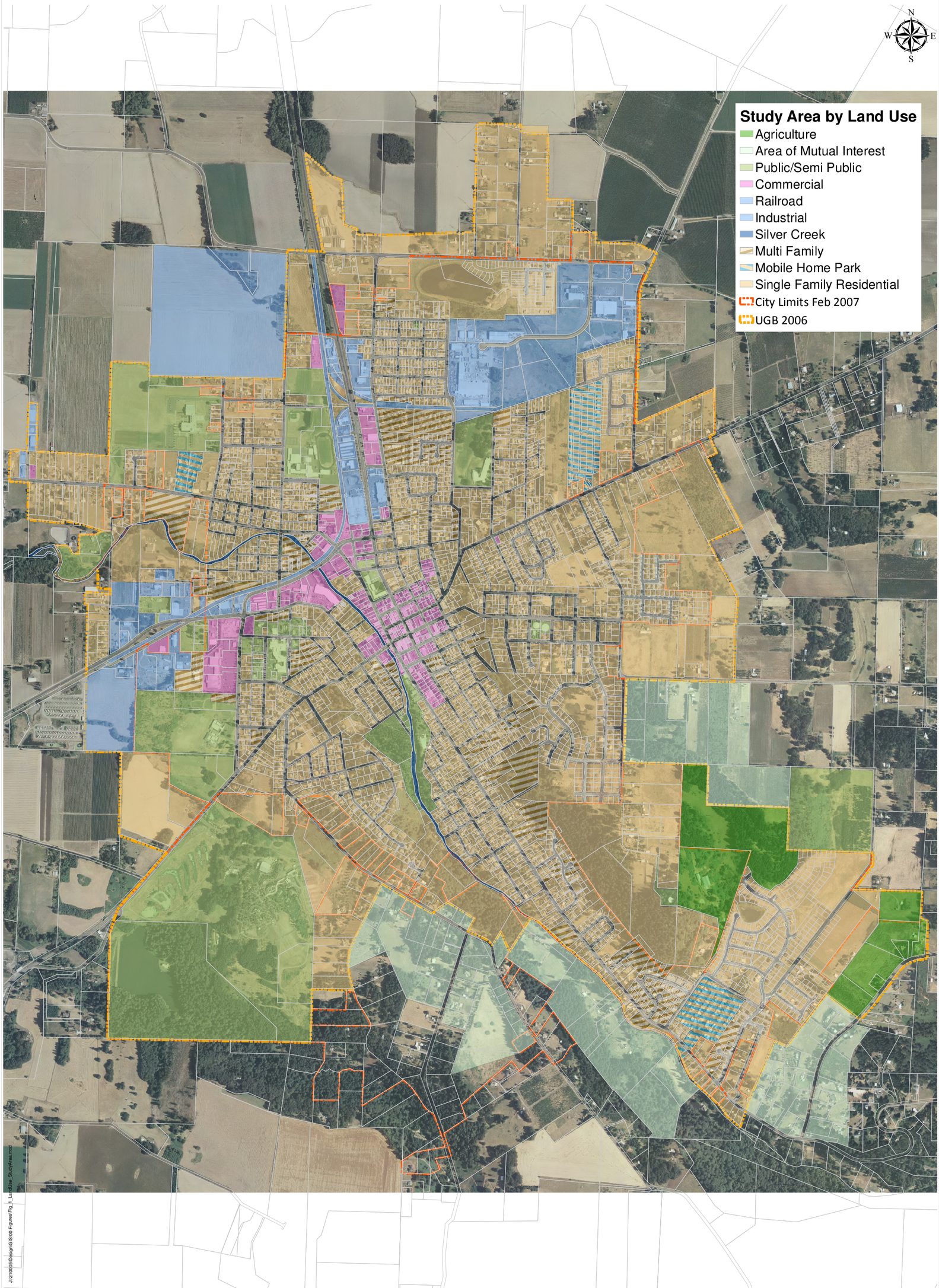


Figure:	Title:		Prepared for:	
1	Land Use and Study Area	WATER FACILITIES MASTER PLAN 2010	CITY OF SILVERTON, OREGON	CITY OF SILVERTON · EST 1854 · OREGON'S GARDEN CITY KELLER associates

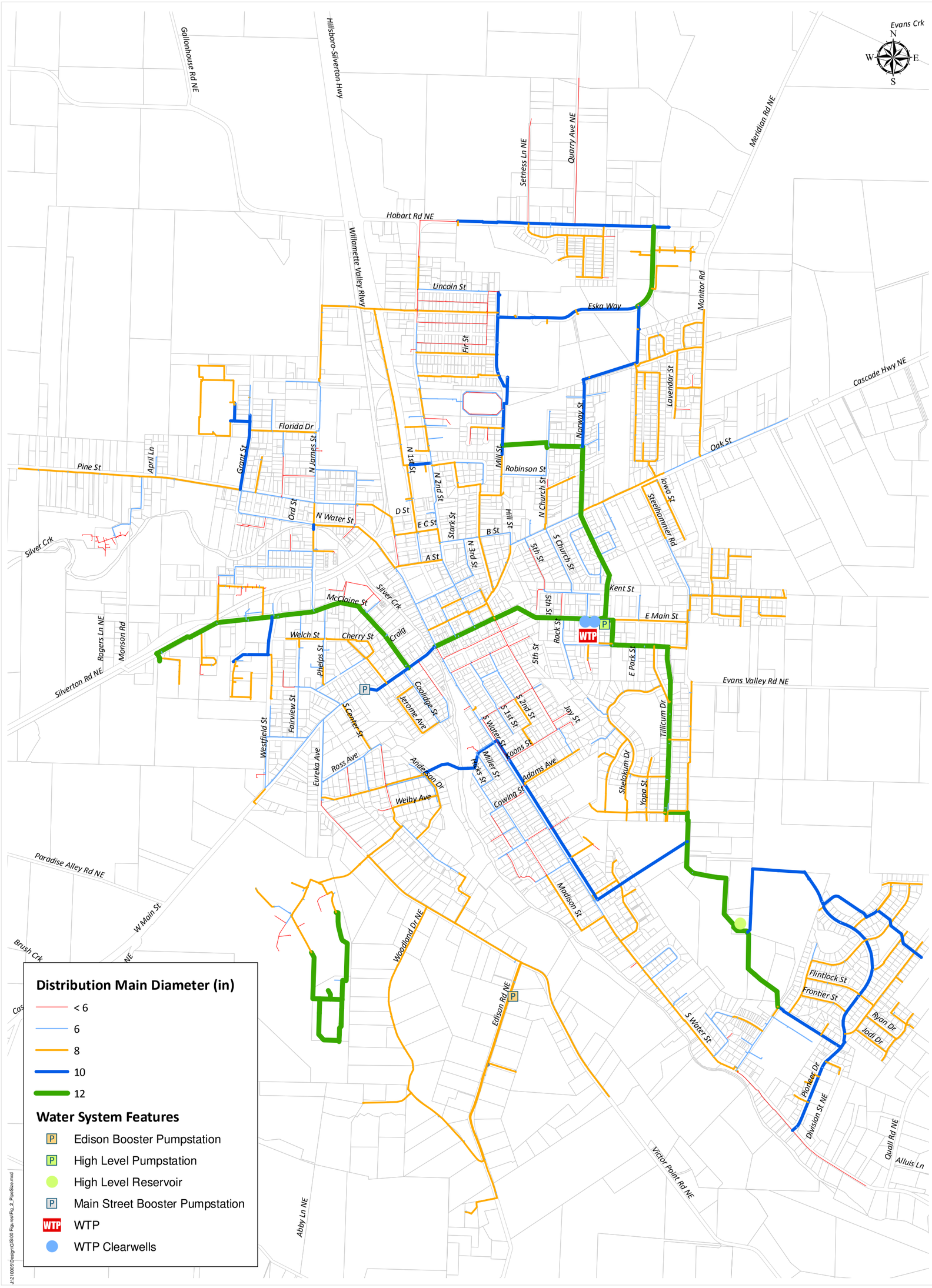


Figure:	Title:		Prepared for:	
2	Existing Distribution System	WATER FACILITIES MASTER PLAN 2010	CITY OF SILVERTON, OREGON	CITY OF SILVERTON · EST 1854 · OREGON'S GARDEN CITY KELLER associates

Zone	Target Hydraulic Grade (ft)	Typical Pressure Range
Edison Rd. Booster Zone	730	38 - 100 psi
WTP Booster Zone	631	42 - 81 psi
WTP PRV Zone	518	40 - 90 psi
Ike Mooney PRV Zone	498	43 - 80 psi
Anderson PRV Zone	490	35 - 91 psi
Water near Peach PRV Zone	449	56 - 69 psi
WTP Clearwell Zone	409	38 - 87 psi

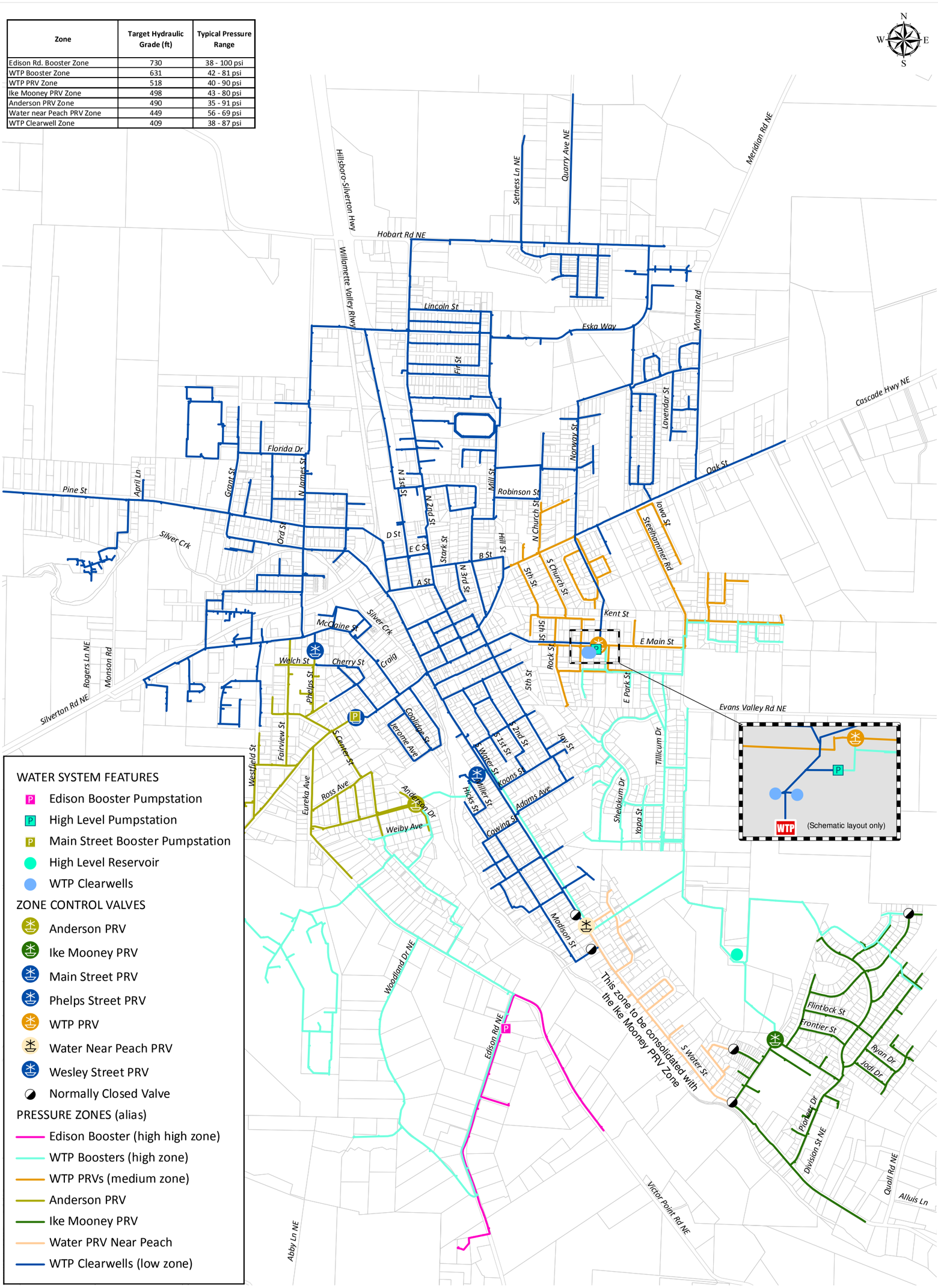


Figure:	Title:		Prepared for:	
3	Existing System Pressure Zones	WATER FACILITIES MASTER PLAN 2010	CITY OF SILVERTON, OREGON	CITY OF SILVERTON EST 1854 OREGON'S GARDEN CITY / KELLER associates

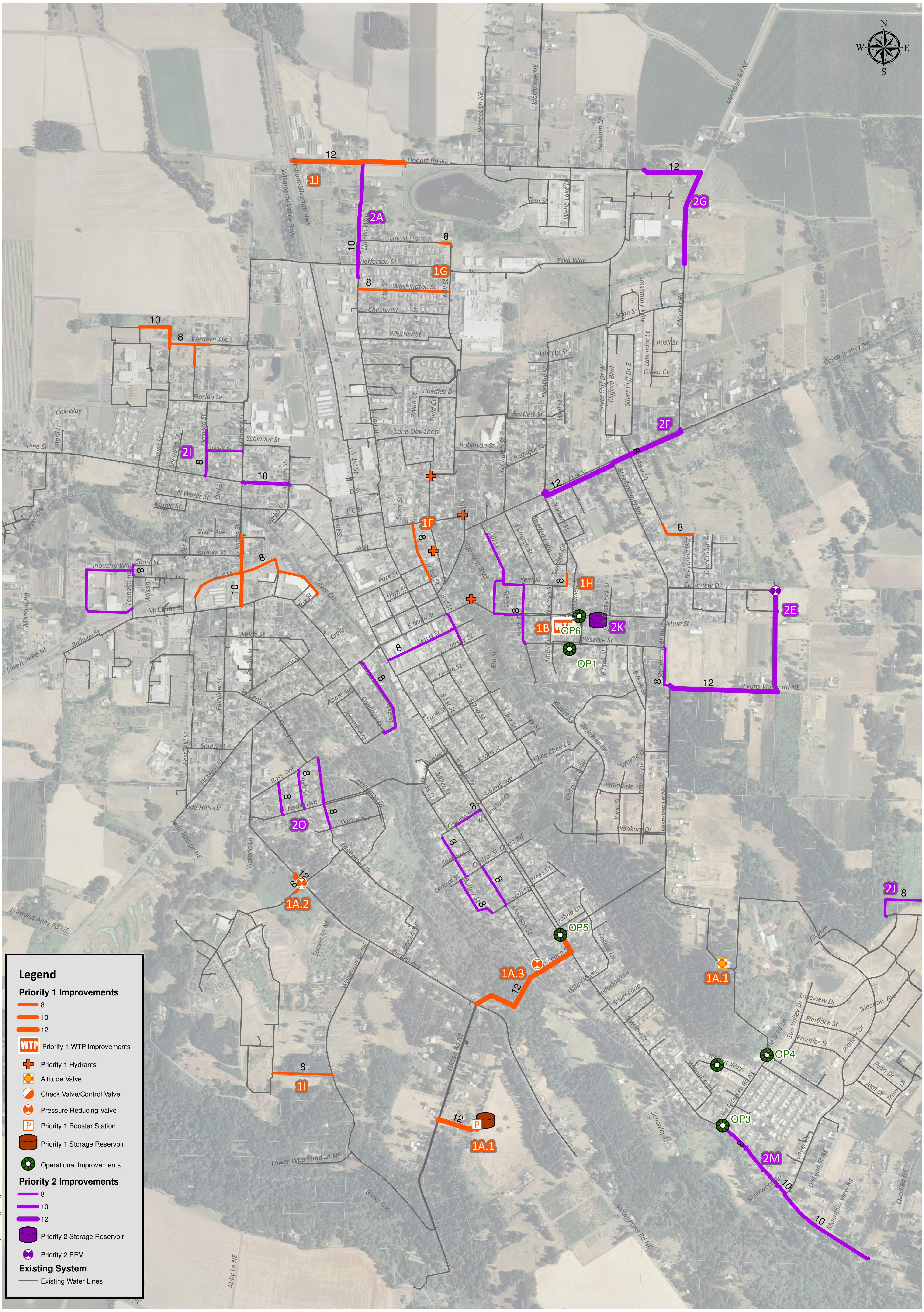


Figure: 4

Title: Priority 1&2 Improvements

WATER FACILITIES MASTER PLAN 2010

Prepared for:

CITY OF SILVERTON, OREGON

KELLER associates

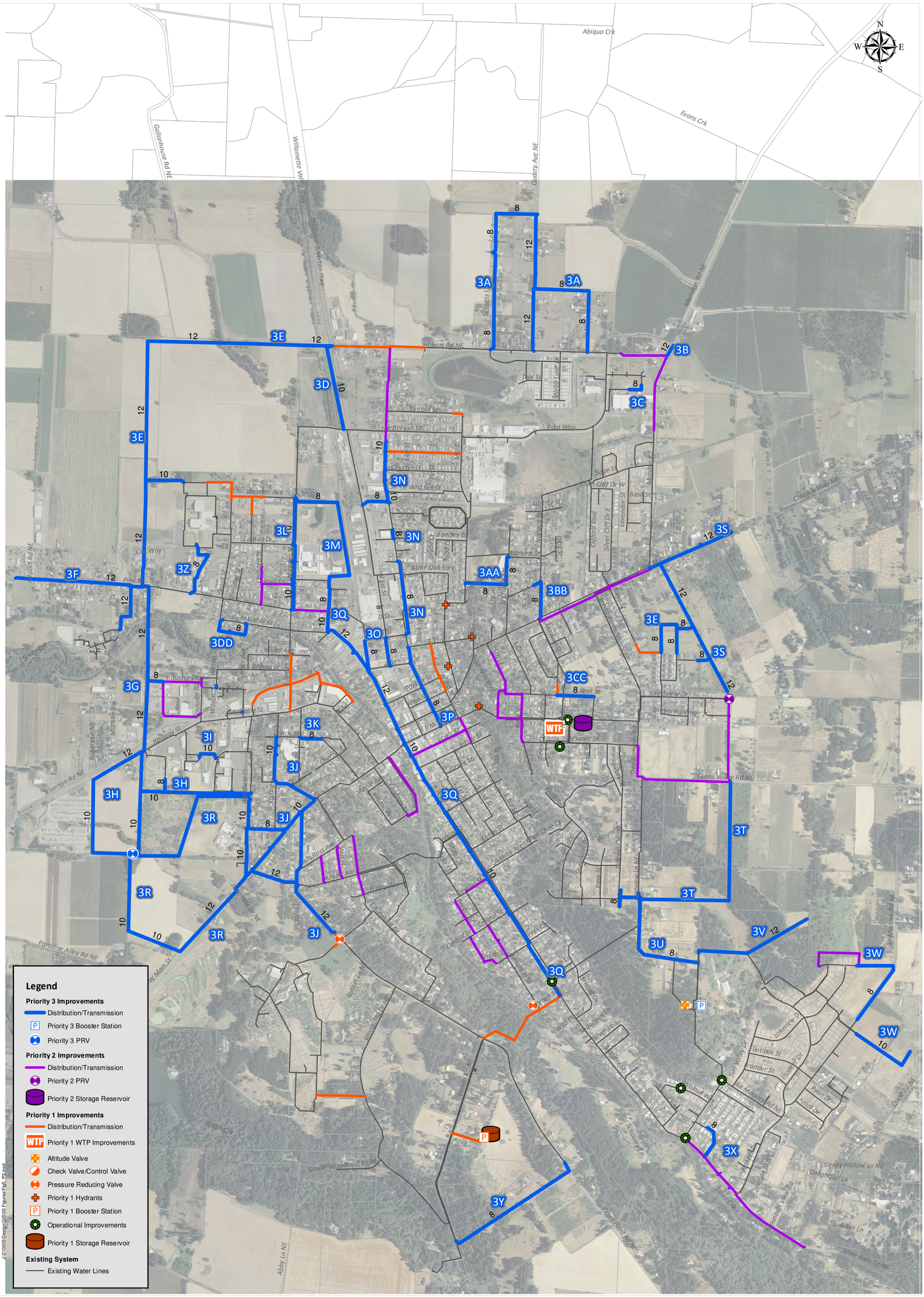
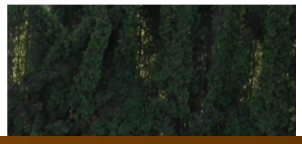
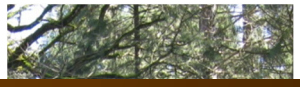
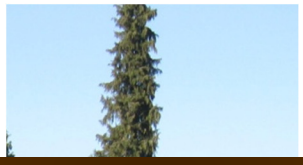
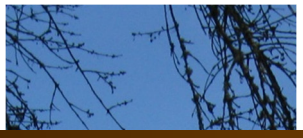
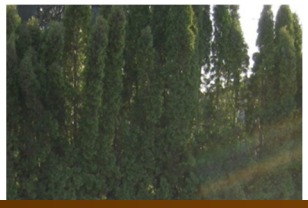
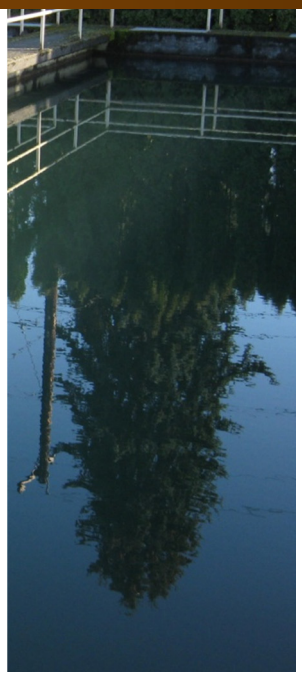


Figure:	Title:		Prepared for:	
5	Priority 3 Improvements	WATER FACILITIES MASTER PLAN 2010	CITY OF SILVERTON, OREGON	CITY OF SILVERTON EST 1854 OREGON'S GARDEN CITY KELLER associates

APPENDIX B – WATER USAGE DATA



Appendix B1 – Water Treatment Plant Production Logs
Appendix B2 – Water Demand Projections
Appendix B3 – Top 30 Water Users

KELLER associates

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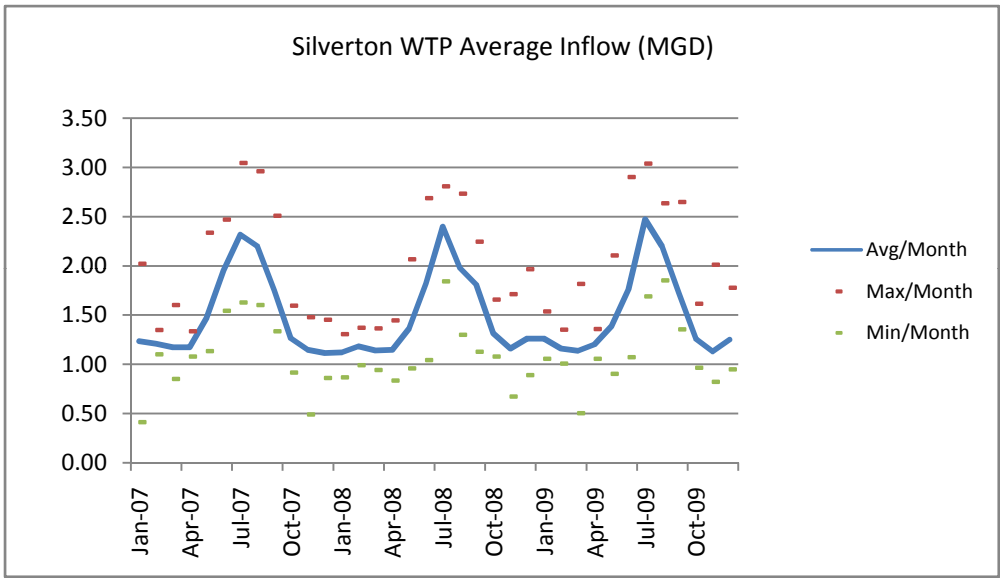
City of Silverton
Water Production Data
2007-2009

Yearly Summary WTP Inflow Data (MGD)

				INFLOW
Event	**2007**	**2008**	**2009**	**2009 Design**
Average Daily Inflow	1.50	1.47	1.49	1.50
Average Summer Inflow*	2.09	2.06	2.13	2.13
Average Winter Inflow**	1.19	1.19	1.22	1.22
Peak Month Inflow (MG)	2.32	2.40	2.47	2.47
Peak Month	July	July	July	
Peak Day Inflow	3.05	2.81	3.04	3.05
Peak Day	July 10	July 13	July 3	

*Includes July-Sept

**Includes Jan, Feb, Dec



Note: On average, approximately 10% and 8% of the water is wasted during the summer and winter months, respectively.

Calculating System Demand for Peak Days

Date	Inflow (MG)	Backwash (gal)	Rewash (gal)	Wasted (gal)	% Wasted	System Demand (MG)
7/9/2007	2.96	38,840	86,400	125,240	4.2%	2.83
7/10/2007	3.05	38,840	86,750	125,590	4.1%	**2.92**
8/1/2007	2.92	38,840	86,528	125,368	4.3%	2.80
7/13/2008	2.81	54,150	82,444	136,594	4.9%	2.67
6/30/2009	2.90	105,320	161,278	266,598	9.2%	2.64
7/3/2009	3.04	80,660	126,667	207,327	6.8%	2.83
7/4/2009	3.02	80,660	125,833	206,493	6.8%	2.81
7/5/2009	2.92	80,660	121,750	202,410	6.9%	2.72
7/6/2009	2.91	80,660	121,125	201,785	6.9%	2.71

Notes:

1 Peak days include those days with inflows higher than 2.9 MGD
2 Total wasted = backwash gallons + rewash gallons
3 System demand = inflow - wasted water
4 Backwash and rewash gallons provided by City (May 21, 2010)

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Total WTP Inflow in MGD

Day	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
1	1.00	1.35	1.26	1.21	1.18	2.16	1.87	2.96	2.15	1.30	1.11	0.94
2	1.00	1.19	1.03	1.27	1.17	2.08	2.38	2.38	1.96	1.33	1.23	1.07
3	0.84	1.27	1.32	1.17	1.24	2.21	2.39	2.35	2.21	1.33	1.09	1.12
4	0.69	1.24	1.15	1.26	1.13	1.92	2.48	2.30	1.79	1.32	1.07	0.86
5	2.00	1.34	1.21	1.34	1.16	1.72	2.64	2.08	1.85	1.32	1.10	1.43
6	1.21	1.17	1.11	1.22	1.15	1.66	2.46	2.30	1.70	1.33	1.40	1.06
7	1.21	1.30	1.32	1.20	1.15	1.59	2.30	2.21	1.90	1.19	1.19	1.12
8	1.31	1.19	1.11	1.10	1.56	1.85	2.44	2.21	1.84	1.32	1.17	1.12
9	1.26	1.31	1.10	1.12	1.24	1.63	2.96	2.40	2.04	1.35	1.14	0.88
10	1.34	1.17	1.17	1.17	1.33	1.65	3.05	2.44	2.51	1.31	1.14	1.32
11	0.41	1.19	1.15	1.22	1.42	1.54	2.69	2.23	2.22	1.22	1.04	0.99
12	1.13	1.17	1.11	1.11	1.29	1.88	2.64	2.09	1.91	1.60	0.49	1.13
13	1.13	1.14	1.16	1.16	1.26	1.98	2.60	2.38	1.45	1.14	1.14	1.10
14	2.02	1.14	1.35	1.13	1.52	2.11	2.41	2.67	1.50	1.16	1.46	1.36
15	1.24	1.22	1.14	1.09	1.69	2.04	2.38	2.44	1.74	1.22	0.98	1.15
16	1.32	1.11	1.17	1.09	1.40	1.76	2.92	2.50	1.72	1.35	1.31	1.06
17	1.44	1.14	1.20	1.08	1.83	1.69	1.87	2.16	1.54	1.22	1.20	1.17
18	1.28	1.12	1.23	1.20	1.42	2.21	1.99	1.92	1.52	1.27	1.10	1.45
19	1.16	1.16	0.96	1.18	1.42	2.35	1.97	1.60	1.72	1.20	0.98	1.05
20	1.38	1.17	1.12	1.12	1.22	2.29	1.70	1.68	1.57	0.92	1.38	1.28
21	1.14	1.18	1.18	1.13	1.33	2.04	1.63	1.67	1.71	1.49	1.09	1.35
22	1.36	1.10	1.14	1.14	1.33	2.21	2.08	1.79	1.57	1.23	1.14	1.07
23	1.09	1.27	1.09	1.12	1.76	2.03	2.23	1.87	1.57	1.38	1.03	1.21
24	1.61	1.29	1.12	1.12	1.46	1.67	2.05	2.10	1.74	1.10	1.23	1.17
25	1.20	1.18	0.85	1.19	1.71	2.03	2.35	1.87	1.74	1.36	0.97	0.86
26	1.40	1.21	1.60	1.14	1.74	2.47	2.14	2.09	1.48	1.15	1.39	0.94
27	1.16	1.18	1.26	1.26	1.29	2.35	2.36	2.26	1.68	1.22	1.01	0.96
28	1.17	1.32	1.26	1.23	1.66	2.21	2.07	2.26	1.40	1.22	1.48	1.21
29	1.18		1.23	1.17	2.17	1.72	1.99	2.40	1.34	1.06	0.98	1.08
30	1.41		1.09	1.23	2.11	1.62	2.39	2.31	1.49	1.32	1.39	1.00
31	1.23		1.17		2.34		2.48	2.36		1.22		1.05
Total (MG)	38.31	33.82	36.37	35.16	45.64	58.64	71.87	68.24	52.54	39.14	34.40	34.54
Average (MGD)	1.24	1.21	1.17	1.17	1.47	1.95	2.32	2.20	1.75	1.26	1.15	1.11
Minimum (MGD)	0.41	1.10	0.85	1.08	1.13	1.54	1.63	1.60	1.34	0.92	0.49	0.86
Maximum (MGD)	2.02	1.35	1.60	1.34	2.34	2.47	3.05	2.96	2.51	1.60	1.48	1.45

Total WTP Inflow in MGD

Day	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08
1	1.00	1.31	0.94	1.02	1.07	1.31	2.46	1.77	1.67	1.53	1.24	0.92
2	1.09	1.19	1.16	1.19	1.28	1.75	2.28	2.01	1.71	1.10	1.32	1.07
3	1.11	1.21	1.33	1.12	0.96	1.04	2.36	2.02	1.87	1.29	1.41	1.17
4	1.13	1.03	1.04	1.30	1.10	1.37	2.00	2.39	1.85	1.20	1.22	1.17
5	1.11	1.21	1.25	0.83	1.29	1.20	1.84	2.46	1.94	1.08	0.99	1.19
6	1.02	1.26	1.24	1.07	1.17	1.34	2.01	2.44	1.69	1.29	1.22	1.00
7	1.10	1.09	1.13	1.45	1.16	1.16	2.36	2.28	1.95	1.28	0.97	1.24
8	1.12	1.17	1.06	0.96	1.22	1.21	2.46	2.15	1.95	1.24	1.02	1.11
9	1.11	1.22	1.09	1.27	1.37	1.61	2.60	1.82	2.14	1.25	1.23	0.89
10	1.26	1.01	1.29	1.11	1.02	1.09	2.38	2.04	2.01	1.47	0.95	1.02
11	1.31	1.19	1.04	1.31	1.24	1.48	2.57	2.24	2.07	1.18	1.51	1.54
12	0.93	1.30	1.24	0.98	1.32	1.18	2.58	2.42	2.15	1.24	1.00	1.25
13	1.08	0.99	1.07	1.12	1.14	1.72	2.81	2.73	2.09	1.35	1.29	1.26
14	0.87	1.22	1.36	1.25	1.51	1.23	2.67	2.56	2.11	1.40	1.09	1.24
15	1.02	1.26	0.96	1.05	1.86	1.96	2.53	2.61	2.24	1.32	0.85	1.31
16	1.00	1.04	1.13	1.19	1.80	1.96	2.62	2.43	2.09	1.18	1.17	1.41
17	0.99	1.13	1.25	1.14	1.86	1.84	2.40	2.08	2.01	1.39	1.20	1.97
18	1.22	1.31	1.04	1.33	1.81	1.85	2.37	1.83	1.79	1.16	1.12	1.35
19	1.16	1.06	1.29	0.93	2.07	2.17	2.47	1.69	1.81	1.25	0.67	1.37
20	1.17	1.22	0.94	1.06	1.40	2.24	2.51	1.46	1.77	1.45	1.71	1.40
21	1.09	1.37	1.33	1.32	1.36	2.18	2.56	1.30	1.51	1.17	1.13	1.15
22	1.26	1.05	1.00	1.03	1.31	2.11	2.19	1.55	1.59	1.32	1.18	1.52
23	1.22	1.15	1.09	1.37	1.45	2.31	2.35	1.64	1.54	1.36	1.17	1.29
24	1.27	1.27	1.23	1.14	1.18	2.31	2.58	1.76	1.52	1.34	1.27	1.47
25	1.24	1.03	1.04	1.20	1.21	2.58	2.40	1.48	1.41	1.20	1.16	1.35
26	1.13	1.23	1.12	1.02	1.37	2.35	2.32	1.61	1.13	1.66	1.25	1.26
27	1.03	1.33	1.11	1.09	1.22	2.69	2.34	1.71	1.63	1.31	1.13	1.34
28	1.19	1.08	1.23	1.26	1.62	2.39	2.56	1.79	1.66	1.49	1.16	1.50
29	1.26	1.36	0.96	1.07	1.06	2.46	1.96	1.87	1.74	1.33	1.10	1.08
30	1.15		1.13	1.27	1.59	2.46	2.52	1.76	1.58	1.55	1.11	1.25
31	1.12		1.24		1.21		2.35	1.43		1.34		0.95
Total (MG)	34.76	34.27	35.34	34.40	42.20	54.55	74.39	61.33	54.20	40.70	34.84	39.05
Average (MGD)	1.12	1.18	1.14	1.15	1.36	1.82	2.40	1.98	1.81	1.31	1.16	1.26
Minimum (MGD)	0.87	0.99	0.94	0.83	0.96	1.04	1.84	1.30	1.13	1.08	0.67	0.89
Maximum (MGD)	1.31	1.37	1.36	1.45	2.07	2.69	2.81	2.73	2.24	1.66	1.71	1.97

Total WTP Inflow in MGD

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	1.13	1.19	1.16	1.25	1.17	2.32	2.54	2.60	1.76	1.58	1.32	1.15
2	1.50	1.16	1.19	1.13	1.21	1.57	2.58	2.52	1.46	1.53	0.85	0.95
3	1.50	1.16	1.14	1.17	1.13	2.21	3.04	2.64	2.65	1.35	1.33	1.02
4	1.50	1.25	1.18	1.15	1.17	1.69	3.02	2.25	2.05	1.11	1.03	1.11
5	1.50	1.25	1.15	1.15	1.16	1.51	2.92	2.43	1.47	1.62	1.46	1.01
6	1.28	1.17	1.16	1.18	1.26	1.30	2.91	2.15	1.59	1.33	1.01	1.05
7	1.38	1.15	1.02	1.23	1.22	1.32	2.44	2.16	1.56	1.23	1.14	1.21
8	1.21	1.19	1.08	1.15	0.90	2.01	2.23	1.98	1.49	1.30	0.95	1.16
9	1.50	1.17	1.26	1.22	1.32	1.40	1.85	2.19	1.75	1.39	1.37	1.60
10	1.50	1.17	0.50	1.22	1.13	1.64	2.45	2.58	1.54	1.35	0.91	1.64
11	1.13	1.15	1.82	1.11	1.20	2.02	2.51	2.20	1.96	1.29	1.41	1.58
12	1.54	1.19	1.01	1.06	1.25	1.85	2.71	2.05	1.79	1.31	1.03	1.18
13	1.29	1.17	1.18	1.13	1.14	1.36	1.69	1.90	1.79	1.29	1.14	1.76
14	1.19	1.10	1.13	1.19	1.12	1.42	1.96	2.10	1.87	1.17	1.09	1.00
15	1.16	1.03	1.09	1.16	1.28	1.68	1.74	1.85	1.77	1.38	0.96	1.78
16	1.05	1.01	1.12	1.16	1.27	1.54	2.32	1.92	1.67	1.20	1.28	1.49
17	1.18	1.10	1.16	1.16	1.47	2.03	2.86	2.53	1.61	1.34	2.01	1.50
18	1.11	1.20	1.20	1.13	1.20	2.26	2.21	2.27	1.82	1.15	1.07	1.13
19	1.25	1.19	1.14	1.15	1.41	1.10	1.97	2.49	1.46	1.21	1.34	1.37
20	1.19	1.13	1.19	1.25	1.34	1.51	2.63	2.46	1.48	1.08	1.28	1.11
21	1.18	1.18	1.08	1.35	1.38	1.35	2.08	2.12	1.96	1.21	1.05	1.17
22	1.19	1.08	1.10	1.18	1.57	1.64	2.77	2.15	1.83	1.17	1.11	1.26
23	1.07	1.14	1.12	1.22	1.23	2.00	1.98	1.99	1.82	1.05	1.12	1.17
24	1.26	1.19	1.17	1.36	1.56	2.00	2.64	2.27	1.93	1.22	0.94	1.25
25	1.17	1.04	1.19	1.24	1.45	1.86	2.35	1.86	1.83	0.96	1.27	1.00
26	1.17	1.17	1.16	1.25	1.90	2.29	2.48	2.16	1.62	1.23	0.82	1.16
27	1.20	1.35	1.34	1.22	1.59	2.00	2.80	2.08	1.66	1.15	0.89	1.15
28	1.24	1.16	1.11	1.27	1.88	2.03	2.80	1.97	1.38	1.13	0.85	1.28
29	1.15		1.14	1.27	2.02	1.07	2.78	1.91	1.64	1.19	0.97	1.13
30	1.12		0.90	1.36	1.96	2.90	2.78	1.95	1.35	1.29	0.90	1.26
31	1.18		1.06		2.10		2.62	2.35		1.16		1.12
Total (MG)	39.03	32.43	35.23	36.05	42.97	52.88	76.67	68.07	51.53	38.96	33.88	38.73
Average (MGD)	1.26	1.16	1.14	1.20	1.39	1.76	2.47	2.20	1.72	1.26	1.13	1.25
Minimum (MGD)	1.05	1.01	0.50	1.06	0.90	1.07	1.69	1.85	1.35	0.96	0.82	0.95
Maximum (MGD)	1.54	1.35	1.82	1.36	2.10	2.90	3.04	2.64	2.65	1.62	2.01	1.78

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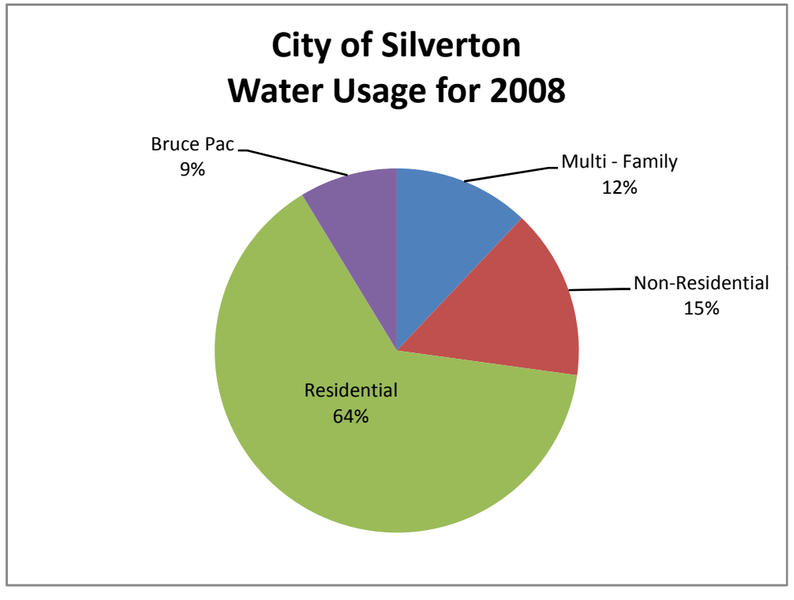
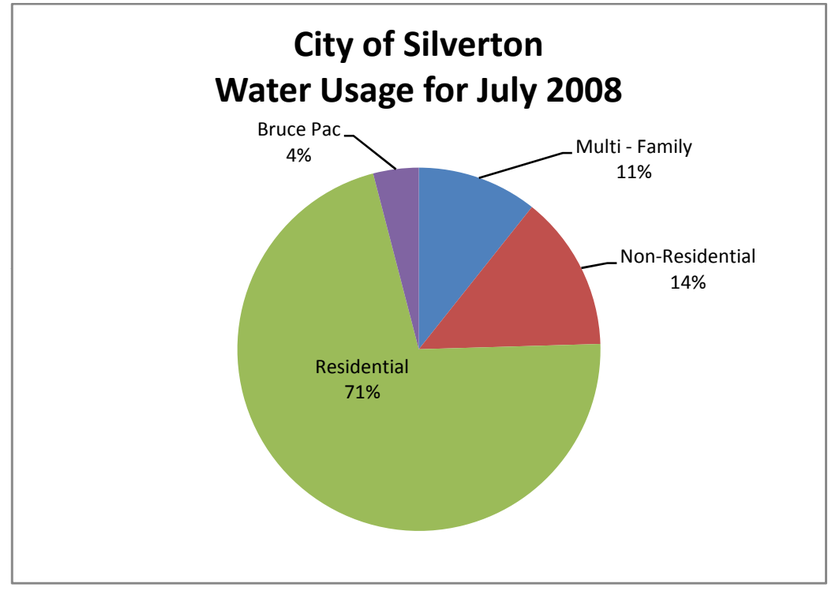
City of Silverton

Water Usage for 2008 (Cubic Feet)

2008		2008			2008		2008			
Multi - Family		**Commercial**			**Residential**		**Bruce Pac**			
Month	**Total**	**Month**	**Total**	**Total Less Bruce Pac**	**Month**	**Total**	**Month**	**Total**	**Total**	**Total (gal)**
Jan	379,116	Jan	1,004,231	521,096	Jan	1,699,001	Jan	483,135	3,565,483	26,669,813
Feb	354,949	Feb	980,418	544,348	Feb	1,624,340	Feb	436,070	3,395,777	25,400,412
Mar	398,704	Mar	984,274	610,279	Mar	1,706,536	Mar	373,995	3,463,509	25,907,047
Apr	376,493	Apr	863,389	537,699	Apr	1,686,021	Apr	325,690	3,251,593	24,321,916
May	452,597	May	916,863	618,913	May	2,076,886	May	297,950	3,744,296	28,007,334
Jun	537,396	Jun	945,000	645,700	Jun	3,002,832	Jun	299,300	4,784,528	35,788,269
Jul	822,234	Jul	1,064,901	752,176	Jul	5,493,284	Jul	312,725	7,693,144	57,544,717
Aug	844,017	Aug	1,170,434	832,279	Aug	5,406,878	Aug	338,155	7,759,484	58,040,940
Sep	701,215	Sep	1,263,798	880,153	Sep	4,455,641	Sep	383,645	6,804,299	50,896,157
Oct	457,470	Oct	1,185,961	723,656	Oct	2,453,806	Oct	462,305	4,559,542	34,105,374
Nov	411,855	Nov	910,820	556,605	Nov	1,588,262	Nov	354,215	3,265,152	24,423,337
Dec	441,052	Dec	912,601	519,387	Dec	1,675,225	Dec	393,214	3,422,092	25,597,248
Total	**6,177,098**	**Total**	**12,202,690**	**7,742,291**	**Total**	**32,868,712**	**Total**	**4,460,399**	**55,708,899**	**416,702,565**
Avg. # of Users/Month	**81**	**Avg. # of Users/Month**	**279**	**278**	**Avg. # of Users/Month**	**2,798**	**Avg. # of Users/Month**	**1**		
Average	**514,758**	**Average**	**1,016,891**	**645,191**	**Average**	**2,739,059**	**Average**	**371,700**		
Winter Total (Dec - Feb)	**1,175,117**	**Winter Total (Dec - Feb)**	**2,897,250**	**1,584,831**	**Winter Total (Dec - Feb)**	**4,998,566**	**Winter Total (Dec - Feb)**	**1,312,419**		
Winter Average	**391,706**	**Winter Average**	**965,750**	**528,277**	**Winter Average**	**1,666,189**	**Winter Average**	**437,473**		
Summer Total (Jul -Sep)	**2,367,466**	**Summer Total (Jul -Sep)**	**3,499,133**	**2,464,608**	**Summer Total (Jul -Sep)**	**15,355,803**	**Summer Total (Jul -Sep)**	**1,034,525**		
Summer Average	**789,155**	**Summer Average**	**1,166,378**	**821,536**	**Summer Average**	**5,118,601**	**Summer Average**	**344,842**		





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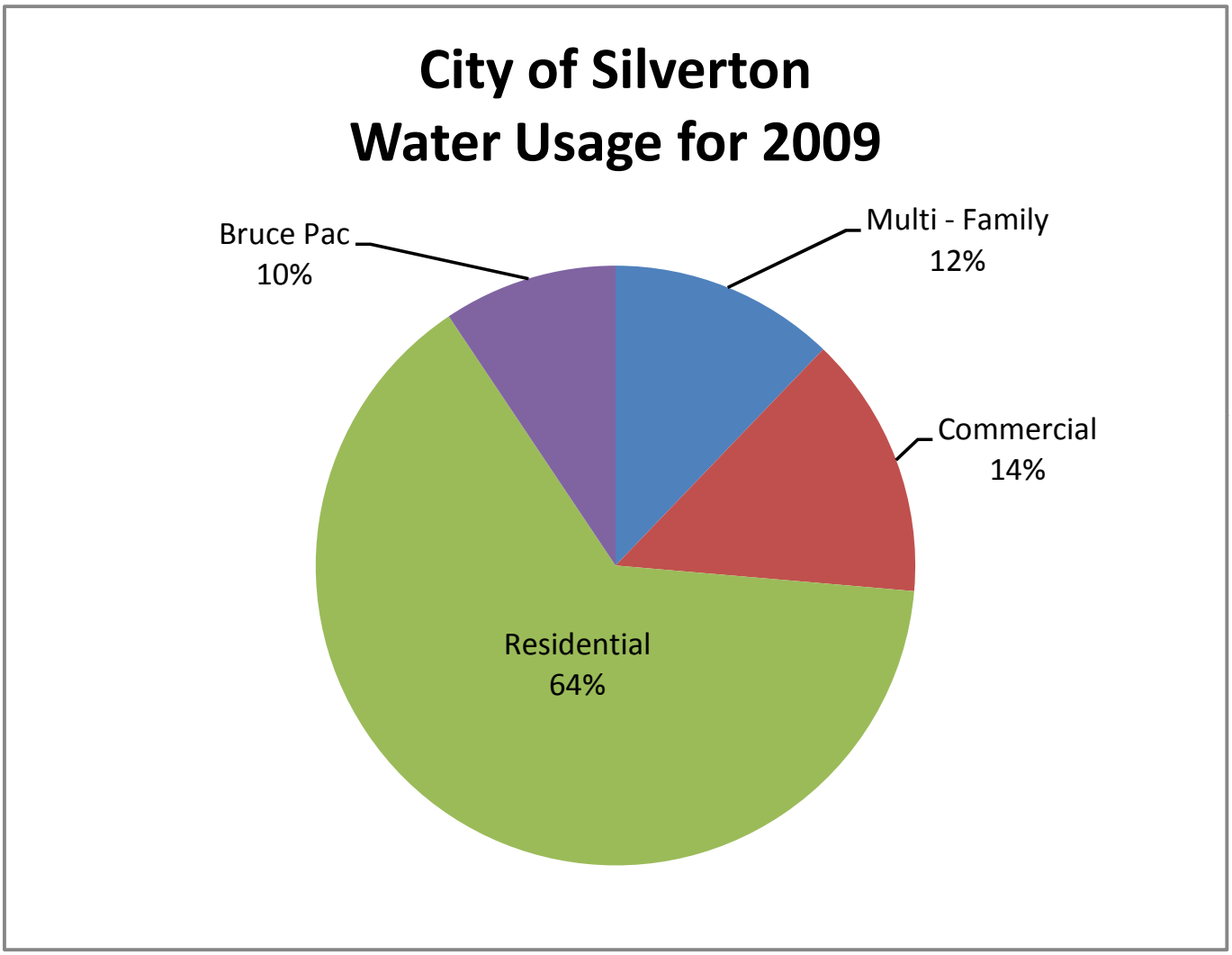
City of Silverton
Water Usage for 2009
Bruce Pac
10%
Multi - Family
12%
Commercial
14%
Residential
64%

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City of Silverton
Top 30 Water Users

Multifamily
Commercial

	2008													
	Usage (Cubic Feet)													
Customer Name	January	February	March	April	May	June	July	August	September	October	November	December	Total	Average
BRUCE PAC	483,135	436,070	373,745	325,120	297,950	299,135	312,725	338,155	383,645	462,305	354,515	393,215	4,459,715	371,643
QUEST	50,143	65,816	67,083	65,197	59,791	80,324	56,097	104,010	148,884	161,603	121,707	75,614	1,056,269	88,022
SILVER FALLS SCHOOL DISTRICT	85,307	101,331	107,732	73,792	81,380	66,777	54,018	76,847	72,211	65,280	58,059	66,129	908,863	75,739
SILVERTON HOSPITAL	69,205	66,540	68,980	71,541	69,391	66,782	95,669	83,448	89,288	75,612	67,468	63,716	887,640	73,970
MOBILE ESTATES/MC HUNTER	31,620	30,300	36,610	32,190	65,670	95,850	173,320	150,370	127,570	56,390	30,430	30,430	860,750	71,729
PACIFIC CREST APTS/KMB TRUST	46,980	40,990	50,460	47,270	50,130	52,740	66,450	70,000	55,740	51,090	45,530	45,530	622,910	51,909
SILVER CLIFF H.O.A. DHP	37,252	33,401	33,771	35,915	36,511	53,426	80,639	91,848	68,160	47,836	32,713	43,576	595,048	49,587
SILVERTOWNE II/OREGON HOUSING	19,705	17,825	18,350	16,550	18,985	22,040	81,525	73,425	31,570	18,040	14,140	17,140	349,295	29,108
STARDUST	14,960	13,850	13,260	15,580	19,060	31,720	55,240	67,800	48,720	26,840	15,940	22,150	345,120	28,760
SILVERTON MANOR	20,640	18,130	17,690	14,990	17,990	22,040	27,780	35,260	22,730	25,190	58,410	58,410	339,260	28,272
DEJOUX EQUITIES, LLC	20,100	19,680	27,790	24,650	27,820	28,980	37,720	36,280	31,370	21,900	27,830	27,830	331,950	27,663
GARDEN WAY LLC	23,224	24,150	33,134	23,990	28,959	25,865	34,744	29,329	29,486	14,464	11,352	11,352	290,049	24,171
MDV PROPERTIES LLC	15,630	15,070	18,060	13,660	17,700	17,840	40,630	45,540	25,850	17,410	13,100	13,100	253,590	21,133
WILLAMETTE DESIGN INVESTMENTS	9,865	10,135	12,155	11,135	16,220	21,865	19,440	27,550	30,050	24,200	15,800	18,800	217,215	18,101
ROTH'S	14,386	15,281	17,561	16,945	20,780	18,396	19,379	15,679	16,076	12,474	11,886	12,786	191,629	15,969
SILVERTON ROAD SELF STORAGE	2	12,530	18,001	17,400	14,030	18,653	16,858	19,245	22,660	17,989	10,378	10,378	178,124	14,844
HOMEPLACE	12,390	11,370	13,180	12,320	14,860	15,810	14,900	17,330	16,390	14,510	13,900	13,900	170,860	14,238
SAFEWAY STORES INC #1580	12,290	11,870	11,620	12,830	10,040	10,540	11,030	8,940	40,060	10,680	10,130	10,510	160,540	13,378
TWILIGHT COURTS	8,850	8,130	10,115	8,420	11,740	13,165	28,240	28,855	19,880	11,450	8,710	0	157,555	13,130
OREGON GARDEN	9,237	3,552	8,862	6,973	17,079	13,047	22,832	18,605	18,390	13,127	14,547	9,833	156,084	13,007
THOROUGHBRED MANAGEMENT INC	13,430	13,000	13,000	11,970	13,030	11,480	14,080	12,760	13,140	13,430	10,440	10,440	150,200	12,517
BRYAN COURT APTS, LLC	12,547	14,882	13,022	11,837	11,334	12,756	11,790	11,724	11,829	10,363	9,254	13,308	144,646	12,054
SILVER GARDENS CARE HOME	8,050	6,690	14,490	11,600	14,660	15,900	15,100	20,570	12,250	8,510	7,150	7,150	142,120	11,843
DAVENPORT HOUSE 007	9,612	6,397	5,965	6,169	6,448	4,709	15,311	24,019	28,988	24,946	3,266	4,131	139,961	11,663
ROGERS, RANDALL/CARISA	9,825	10,141	13,569	12,547	13,629	14,304	11,224	13,273	14,925	9,542	8,090	8,090	139,159	11,597
VOGEL, TODD	10,299	9,041	10,969	10,999	10,665	12,004	11,831	11,648	13,649	12,148	10,440	11,185	134,878	11,240
WOLFARD, BILL	10,299	9,041	10,969	10,999	10,665	12,004	11,831	11,648	13,649	12,148	10,440	11,185	134,878	11,240
DAMEWOOD, MANDI	14,040	11,310	12,980	10,180	12,020	10,360	10,200	9,810	9,340	11,020	8,400	8,400	128,060	10,672
WILCO FARMERS	1,003	1,252	1,447	1,272	6,548	17,498	16,317	19,446	18,517	19,054	6,010	8,285	116,649	9,721
SCCI PROPERTIES	9,600	9,060	8,730	8,470	9,960	11,220	9,970	8,390	20,500	1,660	8,030	8,030	113,620	9,468
Total	1,058,983	1,025,213	1,040,143	922,589	976,517	1,058,152	1,340,403	1,444,158	1,407,160	1,239,477	995,625	1,009,888	13,971,827	1,126,526
												% of Annual Total System Usage	25.08%	

Total System Usage for 2008 55,708,899

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APPENDIX C– DISTRIBUTION FACILITIES EVALUATION

KELLER associates

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TECHNICAL MEMORANDUM

To: John Cramer, PE
Senior Engineer
City of Silverton, Public Works Department
From: James Bledsoe, PE
Keller Associates, Inc.
Date: November 2010
Re: Silverton Water Distribution System Inventory and Evaluation

The water system at Silverton, OR consists of two intakes and supply lines, a water treatment plant (WTP), three water tanks (two at the WTP site), three booster stations (one at the WTP site), multiple pressure reducing valve (PRV) stations, and an underground network of distribution pipelines serving multiple pressure zones. This technical memorandum summarizes the findings and recommendations for existing water facility including the high level tank, booster stations, and PRV stations. A separate evaluation of the water treatment plant and water distribution pipelines will be prepared later and are not included with this technical memorandum. Findings are based on observations and reported conditions collected from an on-site visit made to each of the facilities on February 17, 2010 and information gathered from available record drawings and Water Treatment Plant Operations & Maintenance (WTP O&M) Manual published in 2009. It should be noted that this evaluation does not consider the desired or needed capacities of the facilities which will be completed later as part of the master planning effort.

The paragraphs below describe the results of the evaluation for each of the individual facilities.

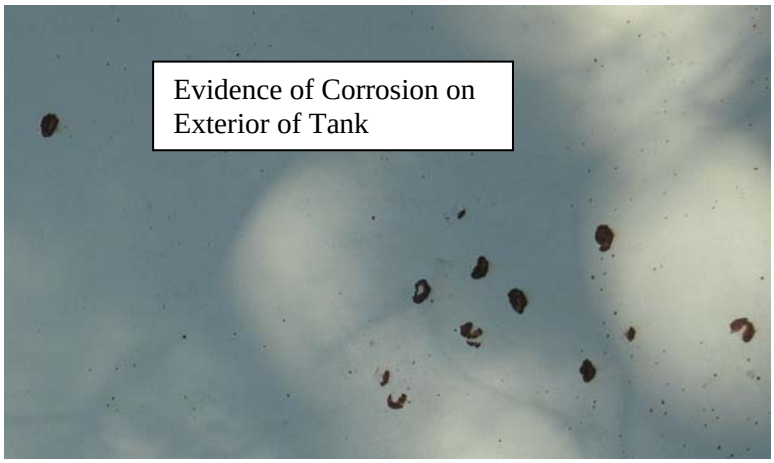
Storage Tanks

2 MG High Level Reservoir

The High Level Reservoir is on the top of a hill located in the southeast quadrant of Silverton. The 2MG welded steel reservoir was constructed in 1981. The tank is approximately 40 feet high and 95 feet in diameter. The tank serves the "high" pressure zone, and also provides backwash water from the newer treatment train at the WTP. It's location is hidden from large trees that surround the tank site.

The tank is typically operated between 34 feet and 39 feet, with an overflow at elevation 40 feet. Water levels are measured with an ultrasonic sensor (installed 2008) and relayed to the WTP SCADA system via a radio antennae mounted on top of the tank. The tank is filled by the High Level Pumphouse located at the WTP. A single inlet/outlet pipe allows flow to enter and leave the tank. According to City staff, there have been no issues with poor water quality or loss of chlorine residual from the tank.

According to the WTP O&M Manual, the reservoir has been inspected periodically both by divers and visual inspection when empty and that the interior was recoated in November 2005. The cathodic protection system reportably functions well, with electrical and control upgrades in 2001 and a replacement of the original platinum anodes in 2006. The City has an annual contract for inspection and service to the cathodic protection system.



According to City staff, the exterior coating of the tank is original. Evidence of rust can be observed at many locations on the exterior of the tank.

Based on Keller Associates visual inspection of the site, we offer the following recommended improvements:

- Recoating of the exterior of the tank.
- Replace the ladder system with a more secure system.
- Provide increased security (cameras, intrusion alarm system)
- Replace the old bolted manway covers with Chase type manways. They are safer to use and are more secure; they can't be opened with water in the reservoir. This reduces the potential for unauthorized opening and release of water and damage due to the release.
- Replace the top vent with a security vent. The security vent prevents contaminates from entering the reservoir much more effectively than conventional vents.

Booster Stations

<u>High Level Pumpstation</u>

The High Level Pumpstation is located at the WTP site and delivers flow to the High Level Reservoir. Record drawings for the pump station are dated 1981. The system consists of a duplex pump arrangement, with 150 hp, 12-inch Byron-Jackson, 4 stage vertical turbine pumps that reportably deliver approximately 1450 gpm at the normal operating head. Six inch and three inch pressure reducing valves located in the pump house also allows flow from the high pressure zone to the medium pressure zone. All flow to the medium pressure zone is first pumped to the high pressure zone. Pressure relief valves will bleed off high pressures from either the high pressure zone or the medium pressure zone back to the tanks located at the WTP site that serve the low pressure zone.

The facility is 30 years old and is approaching the end of its life from a mechanical and electrical standpoint. The mechanical and electrical equipment maintenance

will become a problem in the near future due to difficulty in obtaining service parts.

According to City staff, the City is currently planning on replacing one of the 150 hp pumps with a 75 hp pump equipped with a VFD.

The pumps are called "off" based on the "high" level in the High Level Reservoir. Pumps are called on either via a timer (set for morning or afternoon) or a "low" level in the High Level Reservoir.

Recommendations:

- The booster station should be replaced or substantially upgraded. The new pump and motor could be integrated into the new pumping facility. The new booster facility should be capable of meeting existing and system demands with the largest pump off-line.
- Provide standby power capable of delivering future peak day demands.
- Consider adding another pump that pumps directly to the medium pressure zone. Newer technology allows this to be more easily accomplished than when the facility was originally completed. Pumping directly to the medium pressure zone will result in energy savings. This modification would also allow some simplification in the existing piping and pressure/flow control valves. The pump control valves can be replaced with a simple check valve when the electronic controlled pumping is installed.
- The electrical equipment should be completely replaced. New motors should be premium efficiency to reduce the energy consumption.
- Pump controls should be adjusted as required to ensure proper tank circulation. If VFDs are provided, tank levels should be closely monitored to ensure that adequate rise and fall of tank levels occurs.
- If the existing building is to be incorporated into the booster station upgrades, modifications to the pumphouse will be required to make the mechanical and electrical changes. The door should be replaced with a more secure door. Ventilation system changes to accommodate the new mechanical and electrical systems will also be required.
- Eventually add security systems including intrusion alarms.

Edison Road Booster Pumpstation

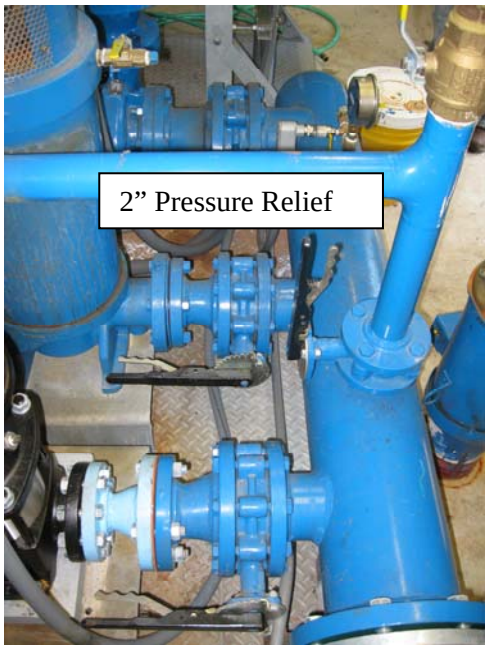
The Edison Road Booster Pumpstation is located in the southwest quadrant near the intersection of Eureka Avenue and Edison Road. The booster facility was completed in 2004 and serves only a small area. It pulls water from the high pressure zone (HGL maintained by the High Level Reservoir) to a High-High pressure zone, or the Edison Booster Station pressure zone.

The pump station has 2 variable speed domestic pumps and 1 constant speed high demand pump. The smallest pump is a variable speed Grundfos CR(E)15-3 rated at 5 hp and delivers 90 gpm @ 150 feet of head. The next larger pump is a 10 hp pump and has a reported capacity of 150 gpm. The 30 hp pump (design point of 800 gpm @ 164' TDH) is a constant speed pump intended for emergency/fire conditions. When the pumps were tested in August 2010, there were a number of issues discovered:

- The power feed was experiencing problems. This was later repaired by PGE.
- The cla-valve downstream of the largest pump was not operational, preventing the pump from running.
- Pump 1 delivered 122 gpm at only 70 feet of head (compared to the pump curve which shows 130 feet of head at this flow).
- Pump 2 delivered 180 gpm at only 53 feet of head (compared to the pump curve which shows 160 feet of head at this flow).

The existing pump operating sequence is as follows:

1. pump 1 comes on.
2. if psi indicates pump 1 is insufficient, pump 2 comes on and pump 1 turns off.
3. if psi and flow indicate pump 2 is insufficient, pump 1 will come on.
4. if psi and flow indicate pump 1 and 2 are insufficient, pump 3 will come on and pump 1 and pump 2 will turn off.



A small pressure tank also helps regulate pressures during low demand periods. Additionally, a 2-inch pressure sustaining valve (PSV) will provide relief (for pressures above 95 psi) in the event that one of the smaller pumps fails to ramp down to sufficiently low levels during low demand periods. This valve is too small to adequately relieve pressure if the largest pump were to run at full speed.

A standby generator operates on propane fuel and is capable of running all three pumps. The fuel tank is 120 gallons with a target minimum level of 70 gallons (which is reportably adequate to supply enough fuel to operate the domestic pumps for 8 hours and supply the emergency pump for 2 hours). According to the local

fire authority, this area is subject to extended power outages, lasting up to a week.

Information is relayed to the City's SCADA system. Alarms include fire, intrusion, and equipment malfunction.

In the event that the booster pump station were to be taken off-line, the City has adjacent fire hydrants in the high zone and high-high zone and a temporary pumping system could be used to pressurize the high-high zone. However, the fire department is not equipped with potable equipment and hoses.

Recommendations:

- As part of the planned improvements at the new tank and booster site located nearby, there should be a pressure relief valve installed that would allow any over pressurization in the Edison booster zone to bleed back into the lower pressure. Additionally, backup pumping capacity should be provided so that peak fire demands of this pressure zone could be met in the event that the existing largest pump is off-line.
- Modify the pump controls to allow all three pumps to run concurrently during fire events.
- Follow up with the two smaller pumps to see why they are not operating on their pump curves.
- Either connect the existing generator to a natural gas pipeline in the vicinity, or provide a larger tank. If the larger tank option is pursued, it should either be buried, or placed behind a wall for security purposes.

West Main Pump Station

West Main Pump Station was originally intended to provide a backup supply to the medium pressure zone located west of Silver Creek. No record drawings or O&M data were available for this site. The pump station appears to be 25+ years old. The pump facility is located in a vault and is equipped with a single 20-hp pump. No SCADA is provided. Controls are manual, and a transfer switch is provided to run the pump via a portable standby power unit. At the time of the visit, the vault was not locked. Staff indicate that they visit the site about 1 time per year. A pressure sustaining valve will dump water to the lower pressure zone if upstream pressure exceed 93 psi.

Recommendation:

- Abandon the pumping facilities. A backup supply source to this pressure service area is proposed to be addressed via Priority 1 master plan improvements.
- Maintain the PRV capabilities.

Pressure Reducing Stations

General: The City of Silverton inspects each pressure reducing valve (PRV) on an annual basis and rebuilds their PRVs every other year. This results in the valves being in relatively good shape and operating at their intended design points. This section does not discuss PRV settings, but rather focuses on the condition of the facilities. Pressure reducing valves at the booster pumping facilities were discussed previously.

The operation of the PRVs is not monitored via SCADA. Keller Associates **recommends** that these valves eventually be added to the SCADA system to monitor open/closed status and upstream and downstream system pressures.

Anderson PRV

Record drawings show the facility was completed in 1981 with two PRVs (3” and 6”) installed in parallel. Since the original construction, a third 1.5” PRV has been installed on a PVC line. This line was reportably added because the demands were too low for the 3” PRV to properly operate. The PRVs are located below ground in a concrete vault with a manhole access. At the time of the visit, the bottom of the vault was wet. High moisture levels in the vault is evident by the amount of rust seen on the ductile iron pipe in the vault. As evidenced in the photos, valve vaults are very corrosive environments due to the constant moisture and air. Some measures should be used to reduce

the corrosive environment inside the vault.

Recommendations:

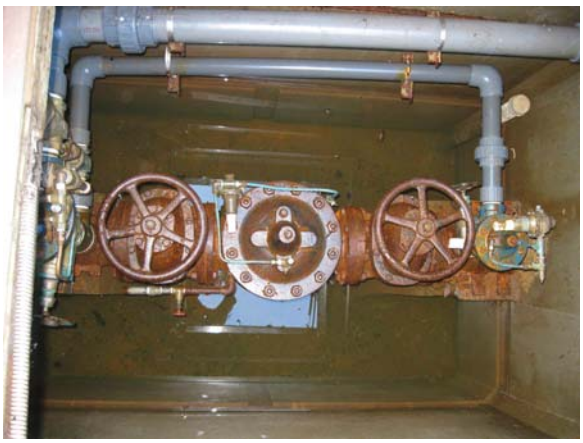
- Keller Associates recommends that this vault and associated mechanical piping and valves be replaced in the near future. Ideally, the new vault would have the following features: located such that surface drainage protection is provided (alternatively a dewatering pump is provided); constructed with water proof concrete in the wall and floor to reduce water intrusion; power is available at the vault to run ventilation, dehumidification, possible dewatering equipment, and SCADA equipment in the future; security provisions such as a lock down lid, high and low pressure alarms and possibly an intrusion alarm.

South Water PRV

The South Water PRV station serves a small area near Water Street. A 2" and 6" PRV deliver water to the pressure zone. Pressure relief valve also dumps water to the low pressure side in the event that pressures in this zone become too high. At the time of the visit in February 2010, we could hear a significant amount of flow passing through the 2" PRV. Additionally, standing water could be seen in the vault.

Recommendations:

- This PRV vault is located where a modification to the top of the vault to raise it above grade is possible and there is adequate space for an electric service to provide power to the vault for humidity control equipment and future SCADA equipment.
- SCADA – eventually look at adding SCADA and upstream and downstream pressure transducers for monitoring system pressures.



- Security – add lock down lid to vault; add high pressure alarm and potentially intrusion alarm once SCADA is at site.
- In addition to making the top water resistant, add ventilation and dehumidifier to the vault to reduce the corrosion damage to the equipment and make maintenance easier.
- Water proof the vault walls and floor to help reduce the moisture intrusion from the surrounding soil.

Mooney / Water Street PRV

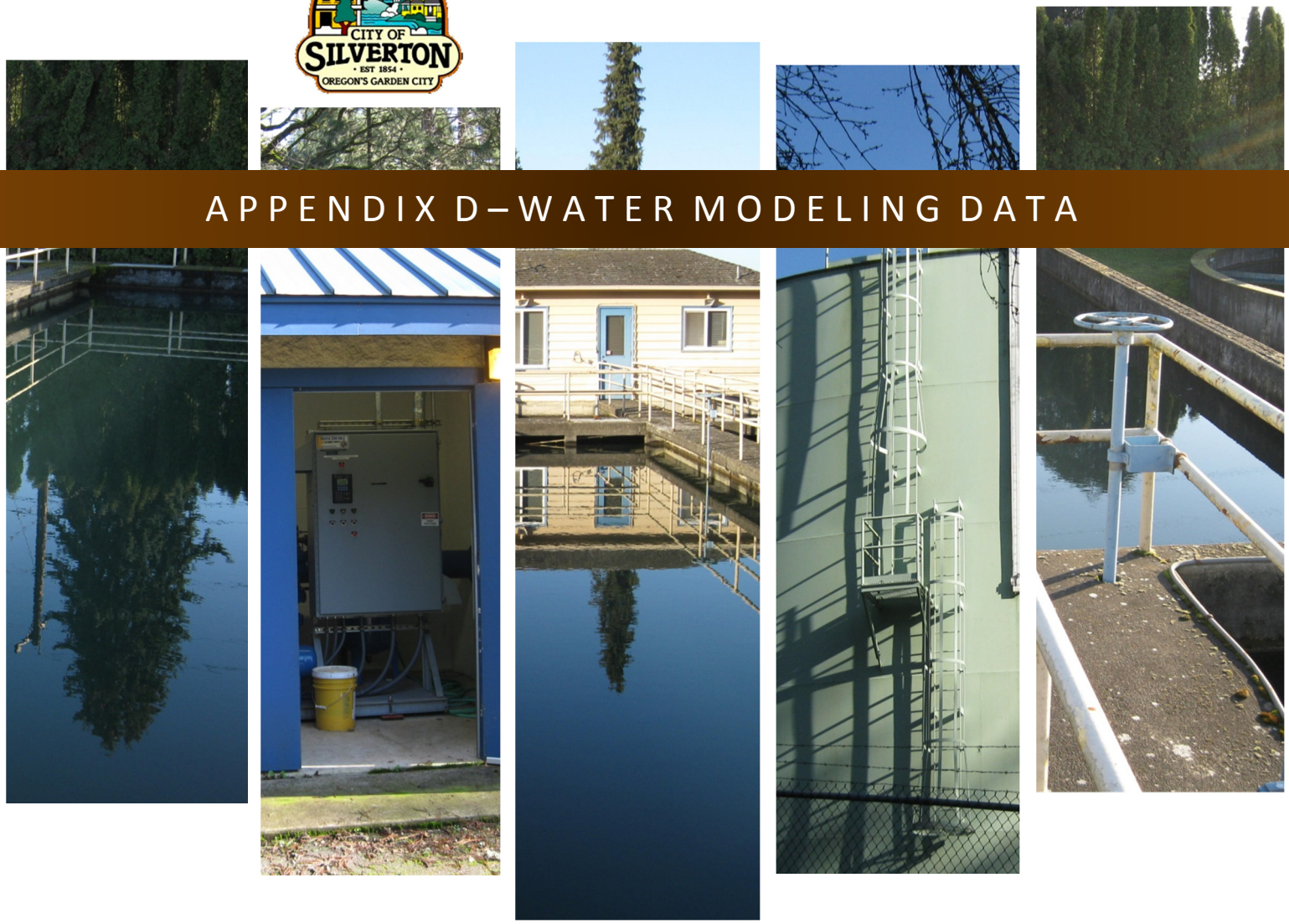
The valve located at Mooney & Water Street had been taken out of service and is currently not being used. The valves and vault appear to be newer than the Anderson and Water street PRV stations. Similar to other vaults, this vault floods. The valve station is equipped with 2" and 6" PRVs, with no relief. Since this PRV is no longer used and the vault is subject to flooding, the City should consider removing the valve and vault. The flooding presents a potential health hazard since any pipe or valve failure inside the vault could allow contaminated water to enter the distribution system.

Ike Mooney Road PRV

The Ike Mooney Road PRV station is a newer PRV station. The valves are located in a vault and include a 3" PRV and an 8" PRV. A 3" relief valve also allows water to be discharged outside the vault in the event that there is a high pressure event.

Recommendations:

- Redo the top of the vault to make it water resistant. Alternatively, regrade so that water drains away from the vault.
- Water proof the inside walls and floor.
- Add an electric service to the vault and add ventilation and dehumidifying equipment to the vault.
- SCADA – eventually look at adding SCADA and upstream and downstream pressure transducers for monitoring system pressures.
- Security – add lock down lid to vault; add high pressure alarm and potentially intrusion alarm once SCADA is at site.



APPENDIX D – WATER MODELING DATA

Appendix D1 – Existing Site Specific Fire Flow Requirements
Appendix D2 – Existing Minimum Day plus Fire Flow Results
Appendix D3 – Existing Peak Hour Pressures

KELLER associates

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PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)		ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
6,500	1	*	811 1 ST GRAIN	BRUCE PACKING COMPANY (1S)	2150	1205	OR06	16040

* — Sprinklered —

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)		ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
5,500	1	✱ ✓	406 420 MCCLAINE ST 203 221 C ST	SILVER CREEK PLAZA (1S)	433	1105	OR06	16600
	1	ABT ✓	201 WESTFIELD ST ROBERT FROST SCHOOL SCHOOL	ROBERT FROST SCHOOL (1S)	1052	1105	OR06	18241

✱ - Hi-School Phase 1 (ACE HARDWARE) and ANNEX - Sprinklered.

✓ - See Auto Aid First Response.

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
4,500	3	✓ 802 SCHLADOR ST SILVERTON HIGH SCHOOL SCHOOL	HIGH SCHOOL (2&3S) SL O +000	1052	1205	OR06	18160

✓ – See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
4,000	1	✓ 425 N CHURCH ST MARK TWAIN MIDDLE SCHOOL SCHOOL	MARK TWAIN MIDDLE SCHOOL (1S)	1052	1105	OR06	18100

✓ — See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
3,500	2	229 EUREKA AVE CHURCH	SILVERTON FRIENDS CHURCH (1 & 2S)	900	1105	OR06	16135
	1	879 W MAIN ST	VERL BETTS (1S)	921	1109	OR06	51154
	1	✓ 1159 OAK ST CHURCH SILVERTON 7TH DAY ADVENTIST C	SILVERTON 7TH DAY ADVENTIST CH (1S)	900	1105	OR06	17125
	1	* ✓ 301 WESTFIELD AVE	THRIFTWAY SUPERMARKET (1S)	434	1205	OR99	744
	1	✓ 201 WESTFIELD ST ROBERT FROST SCHOOL SCHOOL	ROBERT FROST SCHOOL (1S)	1052	1105	OR06	18240

* — SPRINKLERED

✓ — See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS					BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
3,000	1	✓	410	N	WATER EUGENE FIELD SCHOOL SCHOOL	ST	EUGENE FIELD SCHOOL	1052	1205	OR06	18220

✓ — See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,500	1	✓ 264 AIRPORT RD WOODWORKER	STOCKWELL MFG-BLDG #1 (1S)	3959	1105	OR06	51137

✓ - See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,500	1	✓ 424 442 MCCLAINE ST	SILVER CREEK PLAZA (1S)	434	1105	OR06	16640

✓ – See Auto Aid First Response

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS					BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,250	1	ABT	✓	264	AIRPORT WOODWORKER	RD	STOCKWELL MFG-BLDG #2 (1S)	3959	1105	OR06	51138
	1	ABT	✓	264	AIRPORT WOODWORKER	RD	STOCKWELL MFG-BLDG #3 (1S)	3959	1305	OR06	51139

✓ — See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME :
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPH)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,250	1	ABT ✓ 321 AIRPORT RD WOODWORKER	BLAZER INDUSTRIES - BLDG 1 (1S)	3959	1105	OR06	51134

✓ - See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,250	1	1302 ESKA	FREY-MOSS STRUCTURES (1=2S)	6810	1305	OR99	1973
	1	301 S JAMES ST	DAVE BUMGARNER (1S)	3009	1105	OR06	16225
	1	✓ 424 442 MCCLAINE ST	MULTI-OCC (1S)	434	1105	OR06	16660

✓ - See Auto Aid Fire Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME :
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
2,000	1	✓ 812 RTE 213 812 MCCLAINE	CASCADE FARM MACHINERY (1S)	933	1309	OR06	18440

✓ - See Auto Aid First Response

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS					BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
1,750	1	208 606	210	C FRONT		ST ST	CHURCH BLDG (1S)	702	1105	OR06	15985
	1	210		JEFFERSON		ST	PERRY BLDG (1S)	933	1105	OR06	16230
	1	636		MCCLAINE		ST	ACME BODY SHOP (1S)	933	1105	OR06	16690
	2	507		N	WATER	ST	HILDA MOLL BLDG (1 & 2S)	434	1205	OR06	17520
	2	622		N	WATER	ST	JOHN PFEIFER CONST OFC (1&2S)	434	1105	OR06	17360

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME :
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
1,500	2	✓ 321 AIRPORT RD WOODWORKER	BLAZER INDUSTRIES - BLDG 2 (1 & 2S)	3959	1305	OR06	51141
	1	✓ 8872 NE SILVERTON RD WOODWORKER	DARROW WOODWORKING	3959	1109	OR06	11041

✓ See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
1,500	2	822 INDUSTRIAL WAY	FAITH LUTHERAN CHURCH (1&2S)	900	1305	OR99	1808

See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME :
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
1,000	1	ABT ✓ 321 AIRPORT RD WOODWORKER	BLAZER INDUSTRIES (1S)	3959	1105	OR06	51136

✓ — See Auto Aid First Response

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : MARION CO
ALIAS COMMUNITY NAME :
FIRE PROTECTION DISTRICT: SILVERTON FD

NFF (GPM)	HEIGHT (STORIES)	ADDRESS	BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
500	1	ABT ✓ 321 AIRPORT RD WOODWORKER	BLAZER INDUSTRIES (1S)	3959	1105	OR06	51135

✓ - See Auto Aid First Response

DATE : 06/24/98

PUBLIC PROTECTION CLASSIFICATION (PPC) BATCH REPORT
ALL BUILDINGS REQUESTED - ACTIVE

STATE : 36
COUNTY : MARION
TERR. CODE : 240
REQUESTED BY : JOHN S. MOTHERSHEAD

COMMUNITY NAME : SILVERTON
ALIAS COMMUNITY NAME : SILVERTON
FIRE PROTECTION DISTRICT:

NFF (GPM)	HEIGHT (STORIES)	ADDRESS					BUILDING DESCRIPTION	CSP	RCP	DA	RISK#
500	1	ABT	410	N	WATER EUGENE FIELD SCHOOL SCHOOL	ST	EUGENE FIELD SCHOOL (1S)	1052	1605	OR06	18221
	1		1164	S	WATER NURSING HOME	ST	SILVERTON NURSING HOME (1S)	852	1105	OR06	17800

✓ - See Auto Aid First Response

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Existing System Fire Flow Evaluation

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-19	False	1,000.0	False	733.0	20	24	J-64
J-20	False	1,000.0	False	733.0	20	24	J-64
J-29	True	2,500.0	False	2,039.3	20	46	J-2096
J-30	True	2,500.0	False	2,039.3	20	46	J-2096
J-41	False	1,000.0	False	732.9	20	29	J-64
J-42	False	1,000.0	False	732.8	20	29	J-64
J-49	False	1,000.0	False	368.8	20	21	J-3015
J-50	False	1,000.0	False	368.8	20	21	J-3015
J-63	False	1,000.0	False	629.4	20	20	J-64
J-64	False	1,000.0	False	629.0	20	20	J-63
J-71	True	2,500.0	False	2,029.7	20	52	J-2096
J-72	True	2,500.0	False	2,029.7	20	52	J-2096
J-77	False	1,000.0	False	824.8	20	77	H-385
J-78	False	1,000.0	False	824.8	20	77	H-385
J-81	False	1,000.0	False	824.2	20	42	H-385
J-82	False	1,000.0	False	824.2	20	42	H-385
J-87	False	1,000.0	False	733.0	20	25	J-64
J-88	False	1,000.0	False	733.0	20	25	J-64
J-89	False	1,000.0	False	824.3	20	76	H-385
J-90	False	1,000.0	False	824.3	20	76	H-385
J-95	False	1,000.0	False	733.0	20	24	J-64
J-98	False	1,000.0	False	705.5	20	48	J-64
J-100	False	1,000.0	False	824.8	20	78	H-385
J-101	False	1,000.0	False	824.8	20	78	H-385
J-104	False	1,000.0	False	368.4	20	21	J-3015
J-106	False	1,000.0	False	699.1	20	20	J-1286
J-111	False	1,000.0	False	824.2	20	68	H-385
J-113	True	2,500.0	False	2,036.9	20	49	J-2096
J-117	True	2,500.0	False	2,170.9	20	25	H-124
J-119	False	1,000.0	False	824.2	20	68	H-385
J-120	True	2,500.0	False	2,071.2	20	53	J-2096
J-121	True	2,500.0	False	2,071.2	20	53	J-2096
J-122	True	2,500.0	False	2,153.7	20	25	H-125
J-123	True	2,500.0	False	2,158.4	20	25	H-125
J-126	True	2,500.0	False	2,454.9	20	54	J-2096
J-127	True	2,500.0	False	2,454.8	20	54	J-2096
J-140	False	1,000.0	False	747.8	20	80	H-385
J-141	False	1,000.0	False	747.8	20	80	H-385
J-144	False	1,000.0	False	937.0	20	36	J-3219
J-145	False	1,000.0	False	936.8	20	36	J-3219
J-146	False	1,000.0	False	368.8	20	21	J-3015
J-147	False	1,000.0	False	623.1	20	39	H-248
J-150	False	1,000.0	False	990.1	20	20	H-313
J-155	True	2,500.0	False	2,036.9	20	49	J-2096
J-162	False	1,000.0	False	745.6	20	26	H-248
J-163	False	1,000.0	False	745.6	20	26	H-248
J-167	True	2,500.0	False	2,157.4	20	52	J-2096
J-169	False	1,000.0	False	719.2	20	29	J-1286
J-175	False	1,000.0	False	745.6	20	32	H-248
J-176	False	1,000.0	False	745.6	20	32	H-248
J-183	False	1,000.0	False	719.2	20	29	J-1286
J-184	False	1,000.0	False	719.2	20	29	J-1286

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-186	False	1,000.0	False	632.1	20	21	J-64
J-191	False	1,000.0	False	936.8	20	36	J-3219
J-195	True	2,500.0	False	2,157.4	20	52	J-2096
J-196	False	1,000.0	False	568.4	20	24	J-2124
J-197	False	1,000.0	False	568.4	20	24	J-2124
J-200	True	2,500.0	False	2,289.0	20	20	J-1532
J-203	False	1,000.0	False	629.3	20	22	J-64
J-207	True	2,500.0	False	2,033.9	20	49	J-2096
J-211	False	1,000.0	False	886.4	20	72	H-385
J-212	False	1,000.0	False	886.5	20	72	H-385
J-213	False	1,000.0	False	730.6	20	36	J-1286
J-214	False	1,000.0	False	730.6	20	36	J-1286
J-224	False	1,000.0	False	610.0	20	35	H-248
J-225	False	1,000.0	False	610.0	20	35	H-248
J-228	False	1,000.0	False	871.5	20	69	H-385
J-229	False	1,000.0	False	871.6	20	69	H-385
J-239	False	1,000.0	False	824.1	20	67	H-385
J-243	False	1,000.0	False	824.2	20	60	H-385
J-249	False	1,000.0	False	733.0	20	34	J-64
J-258	False	1,000.0	False	730.7	20	37	J-1286
J-263	False	1,000.0	False	824.8	20	40	H-385
J-265	False	1,000.0	False	730.6	20	36	J-1286
J-270	False	1,000.0	False	851.3	20	29	J-3193
J-272	False	1,000.0	False	46.6	20	50	J-3313
J-278	False	1,000.0	False	940.5	20	20	J-279
J-279	False	1,000.0	False	908.2	20	20	J-1262
J-282	False	1,000.0	False	852.4	20	30	J-3219
J-286	True	2,500.0	False	2,037.0	20	47	J-2096
J-287	True	2,500.0	False	2,037.0	20	45	J-2096
J-288	False	1,000.0	False	515.3	20	24	J-2124
J-289	False	1,000.0	False	515.3	20	24	J-2124
J-297	True	2,500.0	False	2,216.7	20	25	H-121
J-313	True	2,500.0	False	2,184.9	20	25	J-117
J-314	True	2,500.0	False	2,184.4	20	25	J-117
J-322	False	1,000.0	False	733.0	20	34	J-64
J-323	False	1,000.0	False	705.5	20	46	J-64
J-324	False	1,000.0	False	705.5	20	47	J-64
J-327	False	1,000.0	False	617.0	20	38	H-248
J-329	False	1,000.0	False	617.0	20	38	H-248
J-337	False	1,000.0	False	824.8	20	39	H-385
J-341	False	1,000.0	False	824.1	20	67	H-385
J-342	False	1,000.0	False	824.1	20	66	H-385
J-347	False	1,000.0	False	705.3	20	22	J-3219
J-351	True	2,500.0	False	2,040.8	20	48	J-2096
J-352	True	2,500.0	False	2,040.8	20	48	J-2096
J-358	False	1,000.0	False	824.8	20	41	H-385
J-364	False	1,000.0	False	733.0	20	29	J-64
J-365	False	1,000.0	False	733.0	20	37	J-64
J-367	False	1,000.0	False	711.0	20	21	J-3029
J-373	False	1,000.0	False	492.0	20	22	J-2124
J-374	False	1,000.0	False	492.0	20	22	J-2124
J-378	False	1,000.0	False	824.8	20	39	H-385

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-380	False	1,000.0	False	824.1	20	83	H-385
J-381	False	1,000.0	False	904.7	20	32	J-3219
J-385	False	1,000.0	False	824.1	20	83	H-385
J-396	False	1,000.0	False	610.0	20	30	H-248
J-398	True	2,500.0	False	2,126.0	20	36	J-3072
J-408	False	1,000.0	False	640.8	20	29	J-3219
J-412	True	2,500.0	False	1,867.5	20	33	J-3072
J-418	False	1,000.0	False	966.0	20	20	H-54
J-424	False	1,000.0	False	732.9	20	27	J-64
J-426	True	2,500.0	False	792.9	20	40	J-3219
J-436	False	1,000.0	False	734.0	20	26	H-385
J-446	True	2,500.0	False	1,712.3	20	28	H-291
J-450	True	2,500.0	False	2,400.7	20	34	J-2096
J-454	False	1,000.0	False	904.6	20	67	H-385
J-456	False	1,000.0	False	558.9	20	20	H-106
J-460	False	1,000.0	False	755.7	20	26	J-3219
J-472	False	1,000.0	False	885.3	20	71	H-385
J-474	False	1,000.0	False	762.6	20	40	H-385
J-479	False	1,000.0	False	745.6	20	28	H-248
J-480	True	2,500.0	False	2,248.3	20	25	H-283
J-488	False	1,000.0	False	775.3	20	49	H-385
J-490	False	1,000.0	False	975.6	20	20	H-55
J-494	False	1,000.0	False	747.8	20	79	H-385
J-496	True	2,500.0	False	2,378.4	20	53	J-2096
J-504	False	1,000.0	False	950.7	20	20	H-343
J-524	True	2,500.0	False	2,157.7	20	25	H-126
J-530	False	1,000.0	False	918.9	20	71	H-385
J-532	False	1,000.0	False	979.5	20	37	J-3219
J-544	True	2,500.0	False	2,036.5	20	39	J-2096
J-564	False	1,000.0	False	741.4	20	20	H-107
J-575	False	1,000.0	False	46.7	20	32	J-3313
J-576	False	1,000.0	False	747.8	20	64	H-385
J-582	False	1,000.0	False	954.1	20	20	H-341
J-586	False	1,000.0	False	750.4	20	38	H-385
J-592	True	2,500.0	False	2,310.4	20	53	J-2096
J-606	False	1,000.0	False	759.4	20	38	H-385
J-608	False	1,000.0	False	731.9	20	31	H-385
J-614	False	1,000.0	False	757.0	20	32	H-385
J-618	False	1,000.0	False	949.6	20	20	H-232
J-620	False	1,000.0	False	795.1	20	54	H-385
J-622	False	1,000.0	False	805.2	20	30	J-3219
J-624	False	1,000.0	False	935.5	20	20	H-250
J-630	True	2,500.0	False	1,111.8	20	45	J-3219
J-636	True	2,500.0	False	1,236.1	20	25	H-200
J-638	True	2,500.0	False	1,330.3	20	25	H-171
J-640	False	1,000.0	False	881.4	20	63	H-385
J-644	True	2,500.0	False	841.2	20	41	J-3219
J-652	False	1,000.0	False	766.8	20	53	H-385
J-656	True	2,500.0	False	382.7	20	66	J-3226
J-660	True	2,500.0	False	2,430.7	20	50	J-2096
J-662	True	2,500.0	False	2,081.2	20	25	H-285
J-666	True	2,500.0	False	2,249.9	20	43	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-668	True	2,500.0	False	1,464.6	20	25	H-288
J-670	True	2,500.0	False	1,523.6	20	26	H-291
J-676	False	1,000.0	False	746.3	20	26	H-248
J-678	False	1,000.0	False	592.6	20	20	H-248
J-682	False	1,000.0	False	46.5	20	64	J-3313
J-684	False	1,000.0	False	46.7	20	48	J-3313
J-692	False	1,000.0	False	603.3	20	24	H-248
J-696	False	1,000.0	False	820.7	20	20	H-249
J-698	False	1,000.0	False	47.1	20	100	J-3313
J-704	True	2,500.0	False	2,173.6	20	25	H-284
J-706	False	1,000.0	False	983.0	20	22	J-3170
J-712	False	1,000.0	False	46.6	20	48	J-3313
J-716	True	2,500.0	False	889.5	20	40	J-3219
J-722	False	1,000.0	False	722.6	20	27	J-3219
J-724	True	2,500.0	False	2,372.0	20	25	H-128
J-732	False	1,000.0	False	46.8	20	69	J-3313
J-734	False	1,000.0	False	696.8	20	20	H-385
J-736	False	1,000.0	False	46.7	20	40	J-3313
J-738	True	2,500.0	False	2,126.0	20	34	J-3072
J-742	False	1,000.0	False	46.7	20	60	J-3313
J-744	False	1,000.0	False	477.6	20	21	J-2124
J-748	False	1,000.0	False	46.5	20	64	J-3313
J-754	False	1,000.0	False	743.6	20	59	H-385
J-760	False	1,000.0	False	733.0	20	25	J-64
J-764	True	2,500.0	False	1,973.1	20	25	H-269
J-772	False	1,000.0	False	826.1	20	57	H-385
J-776	True	2,500.0	False	2,464.4	20	51	J-3072
J-780	False	1,000.0	False	809.9	20	30	J-3219
J-784	False	1,000.0	False	507.7	20	25	J-2096
J-788	True	2,500.0	False	2,479.3	20	51	J-2096
J-808	False	1,000.0	False	737.1	20	32	H-385
J-810	False	1,000.0	False	824.2	20	78	H-385
J-816	False	1,000.0	False	46.5	20	52	J-3313
J-828	False	1,000.0	False	754.3	20	27	J-2918
J-836	False	1,000.0	False	46.5	20	65	J-3313
J-838	False	1,000.0	False	753.5	20	31	H-385
J-846	True	2,500.0	False	2,186.0	20	25	H-127
J-850	False	1,000.0	False	682.7	20	21	J-3219
J-856	True	2,500.0	False	706.5	20	30	H-248
J-860	False	1,000.0	False	797.7	20	63	H-385
J-864	False	1,000.0	False	797.4	20	31	J-3219
J-868	False	1,000.0	False	762.6	20	42	H-385
J-872	True	2,500.0	False	860.3	20	41	J-3219
J-874	False	1,000.0	False	747.8	20	75	H-385
J-876	False	1,000.0	False	753.1	20	23	H-248
J-896	False	1,000.0	False	917.7	20	34	J-3219
J-906	False	1,000.0	False	47.1	20	22	J-3313
J-908	True	2,500.0	False	1,502.2	20	28	J-3072
J-910	False	1,000.0	False	740.0	20	46	H-385
J-922	False	1,000.0	False	816.6	20	26	J-3219
J-925	True	2,500.0	False	2,434.6	20	26	J-200
J-933	False	1,000.0	False	823.9	20	49	H-385

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-934	False	1,000.0	False	824.3	20	75	H-385
J-935	False	1,000.0	False	824.3	20	75	H-385
J-936	False	1,000.0	False	886.2	20	72	H-385
J-937	False	1,000.0	False	886.2	20	71	H-385
J-964	True	2,500.0	False	2,496.2	20	51	J-2096
J-968	False	1,000.0	False	824.1	20	65	H-385
J-972	False	1,000.0	False	704.0	20	22	J-1286
J-976	False	1,000.0	False	824.8	20	39	H-385
J-991	True	2,500.0	False	2,036.9	20	49	J-2096
J-992	True	2,500.0	False	2,036.9	20	49	J-2096
J-994	False	1,000.0	False	705.3	20	37	J-64
J-995	False	1,000.0	False	824.8	20	39	H-385
J-997	False	1,000.0	False	824.8	20	39	H-385
J-998	True	2,500.0	False	2,491.9	20	40	J-2096
J-999	True	2,500.0	False	2,491.5	20	35	J-2096
J-1005	False	1,000.0	False	705.3	20	35	J-64
J-1006	False	1,000.0	False	705.3	20	35	J-64
J-1013	False	1,000.0	False	718.5	20	28	J-1286
J-1014	False	1,000.0	False	718.5	20	28	J-1286
J-1021	False	1,000.0	False	661.6	20	23	J-64
J-1022	False	1,000.0	False	661.4	20	23	J-64
J-1023	False	1,000.0	False	824.8	20	78	H-385
J-1024	False	1,000.0	False	824.8	20	37	H-385
J-1025	False	1,000.0	False	824.8	20	37	H-385
J-1030	False	1,000.0	False	716.5	20	20	J-2382
J-1034	False	1,000.0	False	705.2	20	41	J-64
J-1035	False	1,000.0	False	705.2	20	41	J-64
J-1040	False	1,000.0	False	936.6	20	35	J-3219
J-1044	True	2,500.0	False	2,034.7	20	54	J-2096
J-1045	True	2,500.0	False	2,034.7	20	54	J-2096
J-1055	True	2,500.0	False	2,208.2	20	25	J-1056
J-1056	True	2,500.0	False	2,208.4	20	25	J-1055
J-1057	True	2,500.0	False	2,496.2	20	49	J-2096
J-1059	True	2,500.0	False	832.0	20	39	J-3219
J-1060	True	2,500.0	False	831.9	20	39	J-3219
J-1064	False	1,000.0	False	705.4	20	22	J-3219
J-1065	False	1,000.0	False	705.4	20	22	J-3219
J-1066	True	2,500.0	False	2,229.7	20	25	J-297
J-1073	False	1,000.0	False	824.8	20	35	H-385
J-1087	False	1,000.0	False	824.8	20	35	H-385
J-1088	False	1,000.0	False	824.8	20	37	H-385
J-1091	True	2,500.0	False	2,260.9	20	25	J-200
J-1097	False	1,000.0	False	824.8	20	37	H-385
J-1111	True	2,500.0	False	2,039.3	20	45	J-2096
J-1112	True	2,500.0	False	2,039.3	20	46	J-2096
J-1113	False	1,000.0	False	509.7	20	24	J-2124
J-1114	False	1,000.0	False	509.9	20	24	J-2124
J-1117	True	2,500.0	False	2,402.1	20	38	J-2096
J-1118	True	2,500.0	False	2,402.1	20	38	J-2096
J-1128	True	2,500.0	False	2,339.4	20	26	J-200
J-1141	False	1,000.0	False	824.2	20	60	H-385
J-1152	False	1,000.0	False	568.4	20	22	J-2124

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1153	False	1,000.0	False	480.7	20	22	J-3015
J-1154	True	2,500.0	False	2,157.4	20	54	J-2096
J-1155	True	2,500.0	False	2,157.4	20	54	J-2096
J-1158	False	1,000.0	False	143.7	20	20	J-1159
J-1159	False	1,000.0	False	143.5	20	20	J-1158
J-1178	True	2,500.0	False	827.2	20	37	J-3219
J-1179	True	2,500.0	False	827.2	20	37	J-3219
J-1188	False	1,000.0	False	824.8	20	40	H-385
J-1189	False	1,000.0	False	824.8	20	40	H-385
J-1190	False	1,000.0	False	705.3	20	35	J-64
J-1191	False	1,000.0	False	705.2	20	35	J-64
J-1196	False	1,000.0	False	824.1	20	65	H-385
J-1197	False	1,000.0	False	824.1	20	65	H-385
J-1205	False	1,000.0	False	559.9	20	23	J-2124
J-1206	False	1,000.0	False	559.9	20	24	J-2124
J-1211	True	2,500.0	False	2,315.3	20	55	J-2096
J-1212	True	2,500.0	False	2,315.3	20	55	J-2096
J-1213	True	2,500.0	False	2,492.9	20	45	J-2096
J-1214	True	2,500.0	False	2,492.9	20	46	J-2096
J-1219	False	1,000.0	False	774.6	20	49	H-385
J-1220	False	1,000.0	False	774.7	20	49	H-385
J-1244	False	1,000.0	False	954.0	20	28	J-3219
J-1245	False	1,000.0	False	953.9	20	29	J-3219
J-1247	False	1,000.0	False	988.6	20	20	J-3226
J-1249	True	2,500.0	False	2,034.7	20	54	J-2096
J-1258	False	1,000.0	False	705.3	20	32	J-64
J-1259	False	1,000.0	False	705.3	20	32	J-64
J-1262	False	1,000.0	False	855.4	20	20	J-279
J-1263	True	2,500.0	False	2,010.3	20	25	H-68
J-1264	True	2,500.0	False	2,026.6	20	25	H-68
J-1265	True	2,500.0	False	2,029.7	20	53	J-2096
J-1266	True	2,500.0	False	2,029.7	20	52	J-2096
J-1278	True	2,500.0	False	2,184.1	20	25	J-1279
J-1279	True	2,500.0	False	2,170.4	20	25	H-122
J-1280	False	1,000.0	False	936.6	20	35	J-3219
J-1286	False	1,000.0	False	699.5	20	20	J-106
J-1299	False	1,000.0	False	824.4	20	77	H-385
J-1302	False	1,000.0	False	681.6	20	26	J-3219
J-1314	True	2,500.0	False	2,029.7	20	53	J-2096
J-1316	False	1,000.0	False	714.1	20	24	H-385
J-1323	False	1,000.0	False	730.1	20	20	J-3219
J-1324	False	1,000.0	False	852.8	20	31	J-3219
J-1329	False	1,000.0	False	603.1	20	28	H-248
J-1331	False	1,000.0	False	46.7	20	47	J-3313
J-1338	False	1,000.0	False	812.0	20	31	J-3219
J-1343	False	1,000.0	False	886.1	20	72	H-385
J-1348	False	1,000.0	False	809.9	20	30	J-3219
J-1349	False	1,000.0	False	732.9	20	29	J-64
J-1350	False	1,000.0	False	732.9	20	29	J-64
J-1358	False	1,000.0	False	705.3	20	22	J-3219
J-1360	True	2,500.0	False	2,315.3	20	54	J-2096
J-1361	True	2,500.0	False	2,315.3	20	54	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1365	False	1,000.0	False	661.0	20	23	J-64
J-1368	False	1,000.0	False	824.8	20	39	H-385
J-1370	False	1,000.0	False	746.8	20	66	H-385
J-1372	True	2,500.0	False	2,033.9	20	49	J-2096
J-1379	False	1,000.0	False	705.1	20	43	J-64
J-1392	False	1,000.0	False	732.9	20	29	J-64
J-1393	False	1,000.0	False	732.9	20	29	J-64
J-1405	True	2,500.0	False	2,032.6	20	50	J-2096
J-1406	True	2,500.0	False	2,032.6	20	51	J-2096
J-1411	False	1,000.0	False	745.6	20	20	J-1593
J-1418	True	2,500.0	False	2,266.2	20	53	J-2096
J-1420	True	2,500.0	False	2,039.3	20	49	J-2096
J-1421	True	2,500.0	False	2,039.3	20	49	J-2096
J-1423	False	1,000.0	False	775.9	20	47	H-385
J-1424	False	1,000.0	False	775.9	20	47	H-385
J-1425	True	2,500.0	False	2,071.2	20	53	J-2096
J-1432	False	1,000.0	False	824.1	20	42	H-385
J-1433	False	1,000.0	False	824.2	20	42	H-385
J-1437	True	2,500.0	False	2,496.2	20	52	J-2096
J-1440	False	1,000.0	False	950.2	20	27	J-3219
J-1441	False	1,000.0	False	950.2	20	28	J-3219
J-1449	True	2,500.0	False	2,033.9	20	50	J-2096
J-1450	True	2,500.0	False	2,033.9	20	50	J-2096
J-1453	False	1,000.0	False	46.7	20	40	J-3313
J-1454	False	1,000.0	False	940.6	20	20	J-279
J-1456	True	2,500.0	False	832.4	20	39	J-3219
J-1461	False	1,000.0	False	617.7	20	39	H-248
J-1462	False	1,000.0	False	747.8	20	75	H-385
J-1463	False	1,000.0	False	747.8	20	80	H-385
J-1476	False	1,000.0	False	770.1	20	43	H-385
J-1477	False	1,000.0	False	770.1	20	43	H-385
J-1478	False	1,000.0	False	766.8	20	53	H-385
J-1480	True	2,500.0	False	1,923.1	20	25	H-69
J-1482	False	1,000.0	False	824.0	20	67	H-385
J-1483	False	1,000.0	False	762.6	20	40	H-385
J-1491	False	1,000.0	False	816.6	20	26	J-3219
J-1492	False	1,000.0	False	774.5	20	48	H-385
J-1494	False	1,000.0	False	754.1	20	25	H-385
J-1496	False	1,000.0	False	705.4	20	22	J-3219
J-1497	False	1,000.0	False	705.4	20	22	J-3219
J-1502	False	1,000.0	False	942.4	20	20	J-279
J-1507	False	1,000.0	False	623.1	20	39	H-248
J-1508	True	2,500.0	False	2,434.6	20	27	J-200
J-1509	False	1,000.0	False	46.6	20	48	J-3313
J-1514	True	2,500.0	False	2,339.4	20	27	J-200
J-1516	False	1,000.0	False	561.7	20	20	J-456
J-1522	True	2,500.0	False	1,311.5	20	25	J-1523
J-1523	True	2,500.0	False	1,318.2	20	25	J-1781
J-1524	False	1,000.0	False	46.5	20	65	J-3313
J-1527	False	1,000.0	False	47.1	20	21	J-3313
J-1532	True	2,500.0	False	2,260.9	20	26	J-200
J-1533	False	1,000.0	False	372.1	20	22	J-3015

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

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J-1543	False	1,000.0	False	998.3	20	20	H-313
J-1544	False	1,000.0	False	745.6	20	35	H-248
J-1545	False	1,000.0	False	745.6	20	35	H-248
J-1546	False	1,000.0	False	46.7	20	32	J-3313
J-1549	False	1,000.0	False	775.3	20	49	H-385
J-1557	False	1,000.0	False	747.8	20	63	H-385
J-1558	False	1,000.0	False	747.8	20	63	H-385
J-1561	False	1,000.0	False	824.1	20	66	H-385
J-1572	False	1,000.0	False	951.9	20	29	J-3219
J-1573	False	1,000.0	False	952.4	20	29	J-3219
J-1579	False	1,000.0	False	745.6	20	31	H-248
J-1580	False	1,000.0	False	745.6	20	32	H-248
J-1583	True	2,500.0	False	2,036.9	20	49	J-2096
J-1588	False	1,000.0	False	797.7	20	63	H-385
J-1593	False	1,000.0	False	674.9	20	20	J-1594
J-1594	False	1,000.0	False	584.3	20	20	J-1593
J-1595	False	1,000.0	False	722.6	20	27	J-3219
J-1596	False	1,000.0	False	725.6	20	23	J-3219
J-1601	False	1,000.0	False	46.7	20	21	J-3313
J-1607	True	2,500.0	False	598.5	20	20	J-3219
J-1608	True	2,500.0	False	792.8	20	40	J-3219
J-1613	False	1,000.0	False	640.8	20	29	J-3219
J-1625	True	2,500.0	False	2,037.0	20	45	J-2096
J-1626	True	2,500.0	False	2,037.0	20	46	J-2096
J-1627	True	2,500.0	False	2,037.0	20	28	J-2096
J-1628	True	2,500.0	False	2,037.0	20	28	J-2096
J-1630	False	1,000.0	False	824.1	20	43	H-385
J-1635	False	1,000.0	False	733.0	20	38	J-64
J-1637	False	1,000.0	False	824.8	20	35	H-385
J-1644	False	1,000.0	False	950.0	20	27	J-3219
J-1649	False	1,000.0	False	723.0	20	27	J-3219
J-1652	True	2,500.0	False	2,037.0	20	44	J-2096
J-1654	True	2,500.0	False	2,037.0	20	36	J-2096
J-1663	True	2,500.0	False	2,200.9	20	25	H-284
J-1673	False	1,000.0	False	851.3	20	30	J-3193
J-1676	True	2,500.0	False	2,037.0	20	26	J-2096
J-1680	False	1,000.0	False	824.8	20	77	H-385
J-1681	False	1,000.0	False	824.8	20	77	H-385
J-1693	False	1,000.0	False	824.2	20	41	H-385
J-1700	False	1,000.0	False	46.9	20	57	J-3313
J-1701	False	1,000.0	False	147.3	20	20	J-2766
J-1705	False	1,000.0	False	524.3	20	20	J-3219
J-1727	True	2,500.0	False	2,039.3	20	49	J-2096
J-1728	False	1,000.0	False	770.5	20	20	J-2096
J-1738	False	1,000.0	False	682.7	20	21	J-3219
J-1741	False	1,000.0	False	759.4	20	38	H-385
J-1742	True	2,500.0	False	2,037.0	20	26	J-2096
J-1744	True	2,500.0	False	2,037.0	20	35	J-2096
J-1746	True	2,500.0	False	2,037.0	20	44	J-2096
J-1753	False	1,000.0	False	909.1	20	20	J-2096
J-1758	False	1,000.0	False	849.4	20	23	J-3226
J-1772	False	1,000.0	False	154.2	20	21	J-3364

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1781	True	2,500.0	False	1,311.3	20	25	J-1523
J-1785	False	1,000.0	False	795.1	20	54	H-385
J-1792	False	1,000.0	False	46.8	20	70	J-3313
J-1796	False	1,000.0	False	732.9	20	27	J-64
J-1810	False	1,000.0	False	372.0	20	22	J-3015
J-1811	False	1,000.0	False	731.9	20	31	H-385
J-1812	False	1,000.0	False	750.2	20	21	J-2382
J-1815	True	2,500.0	False	2,036.5	20	44	J-2096
J-1816	True	2,500.0	False	2,036.5	20	44	J-2096
J-1823	False	1,000.0	False	704.0	20	22	J-1286
J-1825	False	1,000.0	False	733.0	20	25	J-64
J-1826	False	1,000.0	False	826.1	20	57	H-385
J-1830	False	1,000.0	False	167.3	20	20	J-2946
J-1833	True	2,500.0	False	2,186.7	20	25	J-1834
J-1834	True	2,500.0	False	2,187.3	20	25	J-1833
J-HighSchool_Schlador	True	2,500.0	False	2,433.0	20	20	H-184
J-1841	True	2,500.0	False	1,867.5	20	35	J-3072
J-1846	False	1,000.0	False	747.8	20	64	H-385
J-1850	False	1,000.0	False	750.4	20	38	H-385
J-1851	False	1,000.0	False	103.4	20	22	J-3364
J-1852	True	2,500.0	False	2,037.0	20	27	J-2096
J-1853	True	2,500.0	False	2,037.0	20	27	J-2096
J-1857	False	1,000.0	False	733.0	20	29	J-64
J-1860	True	2,500.0	False	1,585.3	20	25	J-1861
J-1861	True	2,500.0	False	1,584.2	20	25	J-1860
J-1881	False	1,000.0	False	881.0	20	64	H-385
J-1882	False	1,000.0	False	880.6	20	64	H-385
J-1885	False	1,000.0	False	46.5	20	50	J-3313
J-1886	False	1,000.0	False	753.1	20	24	H-248
J-1892	False	1,000.0	False	762.6	20	42	H-385
J-1893	False	1,000.0	False	824.2	20	63	H-385
J-1894	False	1,000.0	False	824.2	20	61	H-385
J-1896	False	1,000.0	False	797.4	20	31	J-3219
J-1902	True	2,500.0	False	2,266.2	20	55	J-2096
J-1903	False	1,000.0	False	527.4	20	20	J-2096
J-1904	False	1,000.0	False	715.7	20	20	J-1903
J-1908	False	1,000.0	False	753.4	20	26	J-2918
J-1909	False	1,000.0	False	754.3	20	27	J-2918
J-1912	True	2,500.0	False	2,464.0	20	52	J-3072
J-RobertFrostSchool1	True	4,125.0	False	1,138.7	20	20	J-1913
J-1919	True	2,500.0	False	2,126.0	20	37	J-3072
J-1920	False	1,000.0	False	737.2	20	35	H-385
J-1921	False	1,000.0	False	737.2	20	34	H-385
J-1927	False	1,000.0	False	593.1	20	20	H-248
J-1930	False	1,000.0	False	47.1	20	100	J-3313
J-1933	False	1,000.0	False	962.4	20	21	H-341

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1935	True	2,500.0	False	860.2	20	41	J-3219
J-1939	False	1,000.0	False	885.3	20	72	H-385
J-1946	True	2,500.0	False	2,126.0	20	36	J-3072
J-1948	True	2,500.0	False	2,221.0	20	25	H-127
J-1949	False	1,000.0	False	727.9	20	27	J-3219
J-1950	False	1,000.0	False	727.3	20	27	J-3219
J-1951	False	1,000.0	False	942.5	20	20	H-250
J-1953	False	1,000.0	False	950.1	20	22	J-3219
J-1957	False	1,000.0	False	904.7	20	32	J-3219
J-1961	False	1,000.0	False	167.2	20	20	J-2946
J-1963	True	2,500.0	False	2,183.9	20	20	J-2096
J-1965	False	1,000.0	False	764.6	20	41	H-385
J-1966	False	1,000.0	False	764.3	20	41	H-385
J-1971	True	2,500.0	False	2,110.0	20	25	J-662
J-1974	True	2,500.0	False	843.1	20	42	J-3219
J-1975	True	2,500.0	False	843.4	20	42	J-3219
J-1976	True	2,500.0	False	1,825.2	20	26	J-1593
J-1977	True	2,500.0	False	1,975.4	20	26	J-1593
J-1982	False	1,000.0	False	881.4	20	64	H-385
J-1985	False	1,000.0	False	610.0	20	30	H-248
J-1987	False	1,000.0	False	848.1	20	30	J-3219
J-1988	False	1,000.0	False	847.3	20	30	J-3219
J-1991	False	1,000.0	False	755.7	20	27	J-3219
J-1994	True	2,500.0	False	2,037.0	20	49	J-2096
J-1995	True	2,500.0	False	2,037.0	20	49	J-2096
J-2018	False	1,000.0	False	603.3	20	24	H-248
J-2027	False	1,000.0	False	979.5	20	37	J-3219
J-2030	False	1,000.0	False	729.5	20	20	J-2096
J-2032	False	1,000.0	False	997.4	20	20	H-313
J-2034	False	1,000.0	False	753.5	20	31	H-385
J-264 Airport	True	2,250.0	False	1,304.0	20	20	J-636
J-1159 Oak Street	True	3,500.0	False	507.7	20	24	J-2096
J-2044	True	2,500.0	False	1,882.9	20	54	J-2096
J-2045	True	2,500.0	False	1,895.9	20	54	J-2096
J-2047	False	1,000.0	False	823.9	20	49	H-385
J-2048	False	1,000.0	False	872.0	20	69	H-385
J-2049	False	1,000.0	False	872.2	20	69	H-385
J-229EurekaAve	True	3,500.0	False	1,188.2	20	28	J-3226
J-2058	True	2,500.0	False	814.2	20	40	J-3219
J-2059	True	2,500.0	False	814.2	20	40	J-3219
J-2060	True	2,500.0	False	1,334.0	20	25	J-1781
J-2061	False	1,000.0	False	477.6	20	21	J-2124
J-2064	False	1,000.0	False	904.2	20	32	J-3219
J-2065	False	1,000.0	False	903.9	20	32	J-3219
J-2072	True	2,500.0	False	706.5	20	31	H-248
J-2076	True	2,500.0	False	2,225.5	20	26	J-2145

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2077	True	2,500.0	False	2,487.3	20	28	J-2096
J-2090	True	2,500.0	False	1,962.8	20	25	H-69
J-2093	False	1,000.0	False	824.1	20	66	H-385
J-2094	False	1,000.0	False	824.1	20	67	H-385
J-2096	False	1,000.0	False	409.2	20	20	J-3114
J-2103	False	1,000.0	False	847.4	20	33	J-3219
J-2104	False	1,000.0	False	850.1	20	34	J-3219
J-2105	False	1,000.0	False	805.1	20	30	J-3219
J-2118	False	1,000.0	False	705.1	20	41	J-64
J-2119	False	1,000.0	False	705.1	20	41	J-64
J-2121	False	1,000.0	False	754.3	20	27	J-2918
J-2124	False	1,000.0	False	461.9	20	20	J-2989
J-2129	True	2,500.0	False	1,955.3	20	29	H-291
J-2130	True	2,500.0	False	1,955.3	20	29	H-291
J-2138	False	1,000.0	False	757.0	20	32	H-385
J-2143	True	2,500.0	False	841.2	20	41	J-3219
J-2144	False	1,000.0	False	746.3	20	26	H-248
J-2145	False	1,000.0	False	711.5	20	20	J-2146
J-2146	False	1,000.0	False	564.4	20	20	J-2096
J-2150	False	1,000.0	False	917.7	20	34	J-3219
J-2151	True	2,500.0	False	2,292.9	20	25	H-283
J-2172	False	1,000.0	False	807.1	20	30	J-3219
J-2173	False	1,000.0	False	808.7	20	30	J-3219
J-2174	False	1,000.0	False	825.9	20	20	H-249
J-2178	False	1,000.0	False	346.4	20	20	J-2124
J-2179	False	1,000.0	False	510.1	20	24	J-2124
J-2182	False	1,000.0	False	702.8	20	27	J-3219
J-2183	False	1,000.0	False	702.6	20	27	J-3219
J-2188	False	1,000.0	False	603.1	20	28	H-248
J-2199	True	2,500.0	False	2,250.0	20	45	J-3072
J-2203	False	1,000.0	False	754.8	20	27	J-3219
J-2204	False	1,000.0	False	754.0	20	27	J-3219
J-2209	True	2,500.0	False	792.9	20	40	J-3219
J-2210	False	1,000.0	False	146.3	20	20	J-2096
J-2215	True	2,500.0	False	2,315.3	20	54	J-2096
J-2221	True	2,500.0	False	2,126.0	20	36	J-3072
J-2222	True	2,500.0	False	2,126.0	20	35	J-3072
J-2223	False	1,000.0	False	932.8	20	72	H-385
J-2224	False	1,000.0	False	934.1	20	73	H-385
J-2227	True	2,500.0	False	2,493.4	20	46	J-2096
J-2228	True	2,500.0	False	2,493.0	20	46	J-2096
J-2258	True	2,500.0	False	889.4	20	41	J-3219
J-2259	True	2,500.0	False	825.8	20	38	J-3219
J-2260	True	2,500.0	False	825.6	20	40	J-3219
J-2267	False	1,000.0	False	709.3	20	32	J-3193
J-2268	False	1,000.0	False	754.6	20	32	J-3193
J-2297	True	2,500.0	False	2,498.9	20	53	J-3072
J-2306	False	1,000.0	False	681.6	20	26	J-3219
J-2325	False	1,000.0	False	918.9	20	72	H-385
J-2335	False	1,000.0	False	753.1	20	26	H-248
J-2336	False	1,000.0	False	753.1	20	26	H-248
J-2337	True	2,500.0	False	382.7	20	66	J-3226

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2343	False	1,000.0	False	745.6	20	29	H-248
J-2348	True	2,500.0	False	2,033.9	20	49	J-2096
J-2351	False	1,000.0	False	46.3	20	106	J-3313
J-2355	True	2,500.0	False	2,496.2	20	51	J-2096
J-2356	True	2,500.0	False	2,479.3	20	53	J-2096
J-2367	False	1,000.0	False	985.2	20	38	J-3219
J-2368	False	1,000.0	False	985.0	20	38	J-3219
J-2369	True	2,500.0	False	2,036.5	20	49	J-2096
J-2370	True	2,500.0	False	2,036.5	20	49	J-2096
J-2371	True	2,500.0	False	1,980.1	20	53	J-2096
J-2372	True	2,500.0	False	1,980.1	20	53	J-2096
J-2374	True	2,500.0	False	1,111.8	20	45	J-3219
J-2381	False	1,000.0	False	670.2	20	20	J-2382
J-2382	False	1,000.0	False	667.7	20	20	J-2381
J-2390	False	1,000.0	False	46.5	20	65	J-3313
J-2391	False	1,000.0	False	46.5	20	66	J-3313
J-2407	True	2,500.0	False	2,310.4	20	55	J-2096
J-2416	False	1,000.0	False	46.9	20	57	J-3313
J-2417	False	1,000.0	False	46.9	20	57	J-3313
J-2422	True	2,500.0	False	2,434.0	20	25	J-3148
J-2438	True	2,500.0	False	2,157.4	20	53	J-2096
J-2441	True	2,500.0	False	1,900.5	20	29	H-291
J-2442	True	2,500.0	False	1,900.5	20	28	H-291
J-2445	False	1,000.0	False	740.0	20	48	H-385
J-2450	True	2,500.0	False	860.6	20	42	J-3219
J-2451	True	2,500.0	False	861.7	20	42	J-3219
J-2454	False	1,000.0	False	824.3	20	75	H-385
J-2455	False	1,000.0	False	824.3	20	75	H-385
J-2458	True	2,500.0	False	2,400.7	20	38	J-2096
J-2461	False	1,000.0	False	429.5	20	20	J-3219
J-2462	False	1,000.0	False	682.7	20	21	J-3219
J-2476	False	1,000.0	False	745.6	20	26	H-248
J-2477	False	1,000.0	False	745.6	20	26	H-248
J-2479	True	2,500.0	False	936.6	20	44	J-3219
J-2480	True	2,500.0	False	944.4	20	44	J-3219
J-2481	True	2,500.0	False	1,502.2	20	30	J-3072
J-2483	True	2,500.0	False	1,980.1	20	53	J-2096
J-2492	True	2,500.0	False	2,377.0	20	24	J-2751
J-2493	True	2,500.0	False	2,331.0	20	25	J-2751
J-2497	False	1,000.0	False	595.8	20	20	J-3226
J-2499	False	1,000.0	False	705.4	20	25	J-64
J-2500	False	1,000.0	False	705.4	20	26	J-64
J-2503	False	1,000.0	False	755.3	20	31	J-3219
J-2504	False	1,000.0	False	755.2	20	32	J-3219
J-2509	False	1,000.0	False	745.6	20	26	H-248
J-2512	False	1,000.0	False	904.6	20	68	H-385
J-2518	False	1,000.0	False	743.6	20	58	H-385
J-2522	False	1,000.0	False	944.7	20	21	J-3240
J-2523	False	1,000.0	False	824.2	20	61	H-385
J-2524	False	1,000.0	False	824.1	20	64	H-385
J-2537	True	2,500.0	False	2,027.1	20	53	J-2096
J-2538	True	2,500.0	False	2,029.6	20	53	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2540	False	1,000.0	False	46.7	20	60	J-3313
J-2543	False	1,000.0	False	559.1	20	23	J-2124
J-2544	False	1,000.0	False	560.9	20	23	J-2124
J-2547	False	1,000.0	False	46.7	20	48	J-3313
J-2549	False	1,000.0	False	701.9	20	27	J-3219
J-2550	False	1,000.0	False	703.2	20	27	J-3219
J-2553	False	1,000.0	False	734.2	20	28	H-385
J-2558	False	1,000.0	False	737.1	20	34	H-385
J-2584	True	2,500.0	False	2,378.4	20	56	J-2096
J-2585	True	2,500.0	False	2,371.1	20	56	J-2096
J-2586	True	2,500.0	False	2,376.3	20	56	J-2096
J-2588	True	2,500.0	False	2,126.7	20	32	J-3072
J-2601	True	2,500.0	False	2,387.3	20	53	J-2096
J-2603	True	2,500.0	False	2,495.5	20	52	J-2096
J-2606	True	2,500.0	False	2,387.2	20	53	J-2096
J-2607	True	2,500.0	False	2,387.2	20	54	J-2096
J-2612	True	2,500.0	False	2,391.8	20	56	J-2096
J-2613	True	2,500.0	False	2,384.9	20	56	J-2096
J-2619	True	2,500.0	False	2,037.0	20	45	J-2096
J-2620	False	1,000.0	False	682.8	20	26	J-3219
J-2621	False	1,000.0	False	684.2	20	26	J-3219
J-2622	False	1,000.0	False	110.0	20	20	J-2096
J-2623	False	1,000.0	False	111.2	20	20	J-2096
J-2625	False	1,000.0	False	800.7	20	31	J-3219
J-2626	False	1,000.0	False	801.1	20	31	J-3219
J-2637	True	2,500.0	False	2,037.0	20	36	J-2096
J-2644	False	1,000.0	False	824.8	20	35	H-385
J-2646	False	1,000.0	False	710.1	20	20	J-2382
J-2647	False	1,000.0	False	715.2	20	21	J-2382
J-2649	False	1,000.0	False	705.2	20	23	J-3219
J-2657	True	2,500.0	False	2,098.3	20	23	J-1593
J-2658	True	2,500.0	False	2,008.3	20	24	J-1593
J-2663	False	1,000.0	False	737.0	20	34	H-385
J-2664	False	1,000.0	False	823.6	20	77	H-385
J-2667	False	1,000.0	False	845.4	20	30	J-3193
J-2668	False	1,000.0	False	853.2	20	30	J-3219
J-2669	True	2,500.0	False	1,161.9	20	43	J-3219
J-2673	True	2,500.0	False	1,237.5	20	41	J-3219
J-2674	True	2,500.0	False	1,236.9	20	43	J-3219
J-2684	True	2,500.0	False	2,430.7	20	55	J-2096
J-2690	True	2,500.0	False	1,900.5	20	27	H-291
J-2704	False	1,000.0	False	745.6	20	28	H-248
J-2710	True	2,500.0	False	2,037.0	20	36	J-2096
J-2726	False	1,000.0	False	824.1	20	65	H-385
J-2731	False	1,000.0	False	683.9	20	26	J-3219
J-2732	False	1,000.0	False	685.5	20	26	J-3219
J-2750	True	2,500.0	False	2,373.9	20	23	J-2751
J-2751	True	2,500.0	False	2,333.0	20	22	J-2493
J-2755	False	1,000.0	False	949.0	20	28	J-3219
J-2756	False	1,000.0	False	955.4	20	28	J-3219
J-2757	False	1,000.0	False	683.2	20	23	J-3219
J-2758	False	1,000.0	False	683.1	20	23	J-3219

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2767	True	2,500.0	False	939.4	20	42	J-3219
J-2768	True	2,500.0	False	960.5	20	44	J-3219
J-2771	False	1,000.0	False	708.5	20	20	H-385
J-2772	True	2,500.0	False	1,474.2	20	25	H-186
J-2775	True	2,500.0	False	2,030.6	20	53	J-2096
J-2776	True	2,500.0	False	2,029.8	20	52	J-2096
J-2779	False	1,000.0	False	642.7	20	30	J-3219
J-2780	False	1,000.0	False	634.0	20	30	J-3219
J-2787	True	2,500.0	False	2,032.6	20	49	J-2096
J-2791	False	1,000.0	False	745.9	20	26	H-248
J-2792	False	1,000.0	False	739.2	20	26	H-248
J-SilverCreekPlaza2	True	4,500.0	False	3,112.5	20	39	J-3072
J-2797	True	2,500.0	False	2,126.7	20	32	J-3072
J-2798	True	2,500.0	False	2,126.7	20	30	J-3072
J-2799	False	1,000.0	False	850.8	20	30	J-3219
J-2800	False	1,000.0	False	848.1	20	29	J-3219
J-2801	False	1,000.0	False	823.9	20	76	H-385
J-2806	True	2,500.0	False	2,037.0	20	47	J-2096
J-2807	True	2,500.0	False	2,037.0	20	28	J-2096
J-2808	True	2,500.0	False	2,037.0	20	26	J-2096
J-2813	True	2,500.0	False	1,258.9	20	43	J-3219
J-2814	True	2,500.0	False	1,148.2	20	42	J-3219
J-2815	False	1,000.0	False	172.4	20	29	J-3219
J-2816	False	1,000.0	False	623.7	20	30	J-3219
J-2819	False	1,000.0	False	46.8	20	63	J-3313
J-2820	True	2,500.0	False	2,037.0	20	25	J-2096
J-2821	False	1,000.0	False	621.8	20	39	H-248
J-2827	True	2,500.0	False	2,157.4	20	52	J-2096
J-2831	True	2,500.0	False	814.2	20	40	J-3219
J-2832	True	2,500.0	False	2,405.6	20	38	J-2096
J-2833	True	2,500.0	False	2,407.5	20	39	J-2096
J-2835	False	1,000.0	False	844.4	20	33	J-3219
J-2836	False	1,000.0	False	838.2	20	33	J-3219
J-2837	False	1,000.0	False	753.6	20	30	H-385
J-2838	False	1,000.0	False	753.3	20	33	H-385
J-2839	False	1,000.0	False	733.0	20	37	J-64
J-2840	False	1,000.0	False	733.0	20	38	J-64
J-2841	False	1,000.0	False	848.4	20	33	J-3219
J-2842	False	1,000.0	False	851.9	20	34	J-3219
J-2843	True	2,500.0	False	2,268.0	20	55	J-2096
J-2844	True	2,500.0	False	2,260.0	20	54	J-2096
J-2848	True	2,500.0	False	1,195.4	20	25	H-186
J-2851	False	1,000.0	False	937.1	20	20	H-250
J-2852	False	1,000.0	False	967.7	20	20	H-250
J-2855	True	2,500.0	False	793.2	20	40	J-3219
J-2856	True	2,500.0	False	791.1	20	40	J-3219
J-2864	True	2,500.0	False	2,037.0	20	45	J-2096
J-2868	False	1,000.0	False	46.7	20	64	J-3313
J-2869	False	1,000.0	False	46.8	20	63	J-3313

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2875	True	2,500.0	False	708.9	20	31	H-248
J-2876	False	1,000.0	False	745.2	20	26	H-248
J-2877	False	1,000.0	False	783.3	20	32	J-3219
J-2878	False	1,000.0	False	744.9	20	24	J-2918
J-2883	True	2,500.0	False	2,362.0	20	22	J-2472
J-2886	False	1,000.0	False	856.2	20	31	J-3219
J-2887	False	1,000.0	False	843.3	20	33	J-3219
J-2889	True	2,500.0	False	2,365.6	20	44	J-3219
J-2893	False	1,000.0	False	743.2	20	32	J-3219
J-2894	False	1,000.0	False	764.1	20	32	J-3219
J-2903	False	1,000.0	False	46.5	20	50	J-3313
J-2904	False	1,000.0	False	46.6	20	48	J-3313
J-2905	False	1,000.0	False	785.7	20	32	J-3219
J-2908	True	2,500.0	False	2,126.7	20	22	J-3072
J-2913	False	1,000.0	False	46.7	20	32	J-3313
J-2914	False	1,000.0	False	46.7	20	30	J-3313
J-2916	True	2,500.0	False	2,234.1	20	51	J-2096
J-2918	False	1,000.0	False	737.8	20	20	H-248
J-2934	False	1,000.0	False	705.4	20	28	J-64
J-2940	True	2,500.0	False	826.3	20	24	J-3219
J-2956	False	1,000.0	False	938.4	20	35	J-3219
J-2957	True	2,500.0	False	787.9	20	40	J-3219
J-2961	False	1,000.0	False	739.5	20	20	H-248
J-2973	False	1,000.0	False	824.1	20	42	H-385
J-2975	False	1,000.0	False	824.1	20	64	H-385
J-2976	False	1,000.0	False	824.8	20	43	H-385
J-2979	False	1,000.0	False	705.2	20	41	J-64
J-2980	False	1,000.0	False	895.4	20	20	J-1701
J-2984	False	1,000.0	False	824.1	20	63	H-385
J-2989	False	1,000.0	False	478.1	20	21	J-2124
J-2990	False	1,000.0	False	474.0	20	22	J-2124
J-2991	False	1,000.0	False	747.8	20	70	H-385
J-2996	False	1,000.0	False	824.8	20	40	H-385
J-2997	False	1,000.0	False	401.8	20	21	J-2998
J-2998	False	1,000.0	False	327.8	20	20	J-2096
J-3003	False	1,000.0	False	743.1	20	21	J-2382
J-3004	False	1,000.0	False	824.1	20	67	H-385
J-3005	False	1,000.0	False	824.2	20	62	H-385
J-3010	True	2,500.0	False	1,954.9	20	24	H-291
J-3012	False	1,000.0	False	588.9	20	20	H-248
J-3013	False	1,000.0	False	596.6	20	23	H-248
J-3015	False	1,000.0	False	337.0	20	20	J-3051
J-3016	False	1,000.0	False	703.8	20	22	J-1286
J-3018	True	2,500.0	False	2,425.7	20	26	J-3019
J-3019	True	2,500.0	False	898.6	20	20	J-2096
J-3037	False	1,000.0	False	955.8	20	20	J-2096
J-3038	False	1,000.0	False	827.8	20	28	J-3219
J-3039	False	1,000.0	False	816.7	20	26	J-3219
J-3051	False	1,000.0	False	368.5	20	21	J-3015
J-3055	True	2,500.0	False	1,168.3	20	45	J-3219
J-3056	False	1,000.0	False	970.9	20	20	J-3498
J-3059	False	1,000.0	False	824.3	20	55	H-385

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3060	False	1,000.0	False	824.2	20	58	H-385
J-3061	False	1,000.0	False	705.3	20	35	J-64
J-3071	True	2,500.0	False	1,482.7	20	29	J-3072
J-3072	True	2,500.0	False	1,562.6	20	20	J-3071
J-3080	False	1,000.0	False	22.5	20	21	J-2096
J-3082	False	1,000.0	False	824.2	20	60	H-385
J-3088	False	1,000.0	False	759.1	20	21	J-2382
J-3089	False	1,000.0	False	935.6	20	29	J-2096
J-3091	True	2,500.0	False	382.7	20	69	J-3226
J-3093	True	2,500.0	False	2,036.5	20	44	J-2096
J-3096	False	1,000.0	False	980.9	20	20	J-2096
J-3105	False	1,000.0	False	824.6	20	33	H-385
J-3107	False	1,000.0	False	824.4	20	77	H-385
J-3110	False	1,000.0	False	768.8	20	27	J-3219
J-3111	True	2,500.0	False	2,216.8	20	20	J-2096
J-3112	False	1,000.0	False	824.3	20	76	H-385
J-3113	False	1,000.0	False	516.5	20	20	J-3219
J-3114	False	1,000.0	False	440.6	20	23	J-2096
J-3116	False	1,000.0	False	886.6	20	35	H-385
J-3123	False	1,000.0	False	972.8	20	20	J-2096
J-3127	False	1,000.0	False	726.0	20	25	J-3219
J-3128	False	1,000.0	False	169.6	20	20	J-3256
J-3130	False	1,000.0	False	814.8	20	29	J-3219
J-3131	False	1,000.0	False	809.8	20	20	J-3219
J-3133	False	1,000.0	False	753.1	20	23	H-248
J-3137	True	2,500.0	False	2,054.4	20	53	J-2096
J-3139	False	1,000.0	False	853.8	20	71	H-385
J-3140	False	1,000.0	False	309.0	20	20	J-2096
J-3141	False	1,000.0	False	684.0	20	26	J-3219
J-3147	True	2,500.0	False	2,425.8	20	25	J-3148
J-3148	True	2,500.0	False	2,295.3	20	24	H-127
J-3153	False	1,000.0	False	730.9	20	37	J-1286
J-3161	True	2,500.0	False	844.1	20	42	J-3219
J-3164	False	1,000.0	False	852.8	20	20	J-2096
J-3166	False	1,000.0	False	600.8	20	20	H-248
J-3168	True	2,500.0	False	2,146.5	20	20	J-2932
J-3169	True	2,500.0	False	2,443.5	20	25	J-3148
J-3170	False	1,000.0	False	983.0	20	20	J-3498
J-3171	True	2,500.0	False	1,253.8	20	25	J-3219
J-3172	True	2,500.0	False	1,253.9	20	23	J-3219
J-3174	True	2,500.0	False	873.3	20	41	J-3219
J-3175	True	2,500.0	False	2,484.8	20	52	J-2096
J-3181	True	2,500.0	False	799.7	20	40	J-3219
J-3182	True	2,500.0	False	840.2	20	40	J-3219
J-3187	True	2,500.0	False	2,332.0	20	20	J-2657
J-3188	False	1,000.0	False	582.1	20	20	J-2096
J-3189	True	2,500.0	False	1,201.8	20	43	J-3219
J-3193	False	1,000.0	False	374.4	20	20	J-2096
J-3200	True	2,500.0	False	320.0	20	20	J-3208
J-3202	True	2,500.0	False	176.4	20	24	J-3201
J-3203	False	1,000.0	False	824.2	20	68	H-385
J-3208	True	2,500.0	False	203.6	20	20	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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J-3210	False	1,000.0	False	992.1	20	20	H-201
J-3211	False	1,000.0	False	13.2	20	21	J-2946
J-3213	False	1,000.0	False	783.7	20	55	H-385
J-3214	False	1,000.0	False	807.9	20	54	H-385
J-3215	False	1,000.0	False	877.5	20	64	H-385
J-3216	False	1,000.0	False	872.2	20	69	H-385
J-3217	False	1,000.0	False	808.3	20	30	J-3219
J-3218	True	2,500.0	False	1,539.3	20	27	H-291
J-3219	False	1,000.0	False	9.8	20	22	J-2096
J-3221	False	1,000.0	False	466.6	20	20	J-2124
J-3224	False	1,000.0	False	733.0	20	26	J-64
J-3225	False	1,000.0	False	429.8	20	23	J-3226
J-3227	False	1,000.0	False	786.4	20	56	H-385
J-3228	False	1,000.0	False	774.7	20	48	H-385
J-3231	True	2,500.0	False	2,032.7	20	50	J-2096
J-3235	False	1,000.0	False	160.4	20	20	J-2096
J-3239	False	1,000.0	False	98.7	20	20	J-3256
J-3240	False	1,000.0	False	939.1	20	20	J-3276
J-3245	True	2,500.0	False	2,387.4	20	53	J-2096
J-3246	False	1,000.0	False	824.8	20	42	H-385
J-3249	False	1,000.0	False	944.7	20	33	J-3219
J-3250	False	1,000.0	False	464.9	20	20	J-2096
J-3252	False	1,000.0	False	765.6	20	51	H-385
J-3253	False	1,000.0	False	762.6	20	42	H-385
J-3257	False	1,000.0	False	704.3	20	25	J-64
J-3264	False	1,000.0	False	639.3	20	30	J-3219
J-3268	True	2,500.0	False	2,105.0	20	24	J-1971
J-3273	False	1,000.0	False	824.1	20	83	H-385
J-3276	False	1,000.0	False	942.0	20	20	J-3240
J-3280	True	2,500.0	False	2,496.2	20	51	J-2096
J-3290	False	1,000.0	False	754.3	20	27	J-2918
J-3293	False	1,000.0	False	759.4	20	37	H-385
J-3294	False	1,000.0	False	745.6	20	37	H-248
J-3295	True	2,500.0	False	1,712.3	20	28	H-291
J-3297	False	1,000.0	False	658.9	20	20	J-3219
J-3298	False	1,000.0	False	276.9	20	20	J-2622
J-3300	False	1,000.0	False	824.2	20	77	H-385
J-3303	True	2,500.0	False	2,032.6	20	28	J-2096
J-3305	True	2,500.0	False	2,120.0	20	40	J-3072
J-3307	True	2,500.0	False	2,454.6	20	54	J-2096
J-3310	False	1,000.0	False	824.3	20	51	H-385
J-3311	False	1,000.0	False	762.1	20	40	H-385
J-3312	False	1,000.0	False	732.3	20	31	H-385
J-3313	False	1,000.0	False	46.3	20	21	J-1601
J-Twain Middle School	True	4,000.0	False	3,177.6	20	32	J-2096
J-3318	False	1,000.0	False	962.4	20	22	H-341
J-3319	False	1,000.0	False	46.8	20	70	J-3313
J-3320	False	1,000.0	False	46.7	20	82	J-3313
J-3322	True	2,500.0	False	2,126.0	20	35	J-3072

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J-3324	False	1,000.0	False	598.8	20	21	H-248
J-301WestField	True	3,500.0	False	2,368.6	20	35	J-3072
J-3330	True	2,500.0	False	2,162.0	20	25	H-126
J-3332	False	1,000.0	False	512.2	20	21	J-2124
J-3333	False	1,000.0	False	564.5	20	24	J-2124
J-3336	False	1,000.0	False	46.9	20	57	J-3313
J-3340	False	1,000.0	False	47.0	20	96	J-3313
J-3341	False	1,000.0	False	749.2	20	20	J-3219
J-3342	False	1,000.0	False	747.8	20	63	H-385
J-SilverCreekPlaza1	True	4,500.0	False	3,236.0	20	43	J-3072
J-3345	False	1,000.0	False	742.4	20	54	H-385
J-3352	False	1,000.0	False	174.3	20	20	J-2946
J-3354	False	1,000.0	False	67.2	20	20	J-2096
J-3358	False	1,000.0	False	445.9	20	20	J-2096
J-3361	True	2,500.0	False	2,054.4	20	53	J-2096
J-3364	False	1,000.0	False	6.8	20	20	J-2096
J-264 Airport	True	2,500.0	False	1,267.5	20	20	J-264 Airport
J-3469	False	1,000.0	False	820.9	20	32	J-3219
J-3497	False	1,000.0	False	981.7	20	20	J-490
J-3498	False	1,000.0	False	970.8	20	20	J-3056
H-54	False	1,000.0	False	964.9	20	20	J-418
H-55	False	1,000.0	False	973.8	20	20	J-490
J-3499	False	1,000.0	False	994.4	20	20	J-3170
J-3500	True	2,500.0	False	1,148.7	20	45	J-3219
J-3503	True	2,500.0	False	2,243.5	20	45	J-3072
J-3513	True	2,500.0	False	2,037.0	20	37	J-2096
J-3514	False	1,000.0	False	824.3	20	75	H-385
H-56	True	2,500.0	False	2,039.3	20	45	J-2096
H-57	True	2,500.0	False	2,040.8	20	48	J-2096
H-66	True	2,500.0	False	2,036.5	20	39	J-2096
H-67	True	2,500.0	False	2,036.9	20	49	J-2096
H-68	True	2,500.0	False	2,012.1	20	24	J-1263
H-69	True	2,500.0	False	1,927.5	20	24	J-1480
H-9A	True	2,500.0	False	2,033.9	20	49	J-2096
H-F9	True	2,500.0	False	2,029.7	20	52	J-2096
H-94	True	2,500.0	False	2,157.4	20	52	J-2096
H-95	True	2,500.0	False	2,266.2	20	52	J-2096
H-96	True	2,500.0	False	2,310.4	20	52	J-2096
H-97	True	2,500.0	False	2,315.3	20	52	J-2096
H-98	True	2,500.0	False	2,378.4	20	53	J-2096
H-106	False	1,000.0	False	557.6	20	20	J-456
H-107	False	1,000.0	False	738.4	20	20	J-564
H-121	True	2,500.0	False	2,216.4	20	25	J-297
H-122	True	2,500.0	False	2,167.9	20	24	J-1279
H-124	True	2,500.0	False	2,170.9	20	25	J-117
H-125	True	2,500.0	False	2,153.7	20	25	J-122

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-126	True	2,500.0	False	2,158.3	20	25	J-524
H-127	True	2,500.0	False	2,186.4	20	25	J-846
H-128	True	2,500.0	False	2,372.9	20	24	J-724
H-143	True	2,500.0	False	2,492.9	20	44	J-2096
H-145	True	2,500.0	False	2,430.7	20	50	J-2096
H-148	True	2,500.0	False	2,479.3	20	50	J-2096
H-149	True	2,500.0	False	2,496.2	20	48	J-2096
H-150	True	2,500.0	False	2,496.2	20	50	J-2096
H-169	True	2,500.0	False	2,400.7	20	33	J-2096
H-171	True	2,500.0	False	1,325.8	20	25	J-638
H-186	True	2,500.0	False	1,195.7	20	23	J-2848
H-187	True	2,500.0	False	1,195.4	20	23	H-186
H-200	True	2,500.0	False	1,236.0	20	25	J-636
H-211	False	1,000.0	False	507.7	20	25	J-2096
H-213	False	1,000.0	False	745.6	20	35	H-248
H-214	False	1,000.0	False	745.6	20	28	H-248
H-215	False	1,000.0	False	730.6	20	36	J-1286
H-217	False	1,000.0	False	733.0	20	37	J-64
H-220	False	1,000.0	False	623.1	20	39	H-248
H-221	False	1,000.0	False	753.1	20	23	H-248
H-222	False	1,000.0	False	746.3	20	26	H-248
H-223	True	2,500.0	False	706.5	20	30	H-248
H-224	False	1,000.0	False	754.3	20	27	J-2918
H-231	False	1,000.0	False	617.0	20	38	H-248
H-232	False	1,000.0	False	946.8	20	20	J-618
H-233	False	1,000.0	False	610.0	20	30	H-248
H-234	False	1,000.0	False	733.0	20	33	J-64
H-235	False	1,000.0	False	718.5	20	28	J-1286
H-236	False	1,000.0	False	704.0	20	22	J-1286
H-237	False	1,000.0	False	733.0	20	24	J-64
H-238	False	1,000.0	False	732.9	20	27	J-64
H-239	False	1,000.0	False	733.0	20	29	J-64
H-240	False	1,000.0	False	705.5	20	46	J-64
H-F10	False	1,000.0	False	705.1	20	41	J-64
H-10A	False	1,000.0	False	705.3	20	35	J-64
H-243	False	1,000.0	False	705.3	20	32	J-64
H-246	False	1,000.0	False	603.1	20	28	H-248
H-247	False	1,000.0	False	603.3	20	24	H-248
H-248	False	1,000.0	False	592.2	20	20	J-678
H-249	False	1,000.0	False	820.1	20	20	J-696
H-250	False	1,000.0	False	933.8	20	20	J-624
H-251	False	1,000.0	False	940.7	20	20	J-279
H-268	True	2,500.0	False	2,464.4	20	50	J-3072
H-269	True	2,500.0	False	1,973.3	20	25	J-764
H-276	True	2,500.0	False	2,249.9	20	43	J-3072
H-280	True	2,500.0	False	2,434.6	20	25	J-200
H-281	True	2,500.0	False	2,339.4	20	25	J-200
H-282	True	2,500.0	False	2,260.9	20	25	J-200
H-283	True	2,500.0	False	2,249.2	20	25	J-480
H-284	True	2,500.0	False	2,174.4	20	25	J-704
H-285	True	2,500.0	False	2,078.7	20	25	J-662
H-7B	True	2,500.0	False	2,126.0	20	36	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-287	True	2,500.0	False	2,126.1	20	34	J-3072
H-288	True	2,500.0	False	1,465.3	20	25	J-668
H-F7	True	2,500.0	False	1,867.5	20	33	J-3072
H-290	True	2,500.0	False	1,501.9	20	28	J-3072
H-291	True	2,500.0	False	1,538.7	20	24	J-670
H-292	True	2,500.0	False	1,712.3	20	28	H-291
H-293	True	2,500.0	False	382.8	20	66	J-3226
H-308	False	1,000.0	False	983.0	20	22	J-3170
J-Robert Frost2	True	3,500.0	False	1,053.0	20	20	H-309
H-313	False	1,000.0	False	989.1	20	20	J-150
H-327	True	2,500.0	False	1,111.8	20	45	J-3219
H-328	True	2,500.0	False	860.3	20	41	J-3219
H-331	False	1,000.0	False	979.5	20	37	J-3219
H-332	True	2,500.0	False	841.2	20	41	J-3219
H-333	True	2,500.0	False	889.5	20	40	J-3219
H-3A	False	1,000.0	False	954.1	20	27	J-3219
H-335	False	1,000.0	False	936.6	20	35	J-3219
H-336	True	2,500.0	False	827.2	20	37	J-3219
H-337	True	2,500.0	False	793.0	20	40	J-3219
H-341	False	1,000.0	False	952.0	20	20	J-582
H-343	False	1,000.0	False	949.8	20	20	J-504
H-344	False	1,000.0	False	917.7	20	34	J-3219
H-345	False	1,000.0	False	851.3	20	29	J-3193
H-346	False	1,000.0	False	904.7	20	32	J-3219
H-347	False	1,000.0	False	852.4	20	30	J-3219
H-348	False	1,000.0	False	797.4	20	30	J-3219
H-349	False	1,000.0	False	755.7	20	26	J-3219
H-350	False	1,000.0	False	722.6	20	27	J-3219
H-351	False	1,000.0	False	705.3	20	22	J-3219
H-352	False	1,000.0	False	682.7	20	21	J-3219
H-353	False	1,000.0	False	681.6	20	26	J-3219
H-3B	False	1,000.0	False	640.8	20	29	J-3219
H-355	False	1,000.0	False	515.3	20	24	J-2124
H-2B	False	1,000.0	False	559.9	20	23	J-2124
H-357	False	1,000.0	False	492.0	20	22	J-2124
H-359	False	1,000.0	False	477.6	20	21	J-2124
H-370	False	1,000.0	False	816.6	20	26	J-3219
H-371	False	1,000.0	False	809.4	20	30	J-3219
H-372	False	1,000.0	False	805.2	20	30	J-3219
H-374	False	1,000.0	False	904.6	20	67	H-385
H-4C/5C	False	1,000.0	False	918.9	20	71	H-385
H-376	False	1,000.0	False	885.3	20	71	H-385
H-377	False	1,000.0	False	824.2	20	78	H-385
H-378	False	1,000.0	False	881.4	20	63	H-385
H-379	False	1,000.0	False	826.1	20	57	H-385
H-380	False	1,000.0	False	795.1	20	54	H-385
H-381	False	1,000.0	False	775.9	20	47	H-385
H-382	False	1,000.0	False	770.1	20	43	H-385
H-383	False	1,000.0	False	762.7	20	40	H-385

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-384	False	1,000.0	False	731.9	20	31	H-385
H-385	False	1,000.0	False	696.0	20	20	J-734
H-387	False	1,000.0	False	46.7	20	64	J-3313
H-388	False	1,000.0	False	46.7	20	64	J-3313
H-389	False	1,000.0	False	46.7	20	65	J-3313
H-390	False	1,000.0	False	46.9	20	59	J-3313
H-391	False	1,000.0	False	46.8	20	48	J-3313
H-392	False	1,000.0	False	46.5	20	70	J-3313
H-393	False	1,000.0	False	734.0	20	25	H-385
H-394	False	1,000.0	False	737.1	20	32	H-385
H-F4	False	1,000.0	False	46.6	20	100	J-3313
H-4A	False	1,000.0	False	46.6	20	52	J-3313
H-4B	False	1,000.0	False	740.0	20	46	H-385
H-398	False	1,000.0	False	743.6	20	59	H-385
H-399	False	1,000.0	False	747.8	20	63	H-385
H-400	False	1,000.0	False	747.8	20	75	H-385
H-401	False	1,000.0	False	747.8	20	79	H-385
H-402	False	1,000.0	False	750.4	20	38	H-385
H-403	False	1,000.0	False	753.5	20	31	H-385
H-404	False	1,000.0	False	757.0	20	32	H-385
H-405	False	1,000.0	False	759.4	20	38	H-385
H-406	False	1,000.0	False	762.6	20	42	H-385
H-407	False	1,000.0	False	766.8	20	53	H-385
H-408	False	1,000.0	False	775.3	20	48	H-385
H-5B	False	1,000.0	False	797.7	20	62	H-385
H-410	False	1,000.0	False	824.1	20	65	H-385
H-411	False	1,000.0	False	824.2	20	60	H-385
H-412	False	1,000.0	False	824.8	20	76	H-385
H-413	False	1,000.0	False	824.4	20	77	H-385
H-414	False	1,000.0	False	824.1	20	83	H-385
H-415	False	1,000.0	False	824.2	20	68	H-385
H-416	False	1,000.0	False	824.1	20	67	H-385
H-417	False	1,000.0	False	824.8	20	40	H-385
H-418	False	1,000.0	False	824.8	20	39	H-385
H-419	False	1,000.0	False	824.8	20	41	H-385
H-5A	False	1,000.0	False	824.8	20	35	H-385
H-F5	False	1,000.0	False	824.8	20	39	H-385
H-422	False	1,000.0	False	823.9	20	49	H-385
H-423	False	1,000.0	False	46.4	20	23	J-3313
H-424	False	1,000.0	False	46.7	20	32	J-3313
H-425	False	1,000.0	False	46.7	20	40	J-3313
H-426	False	1,000.0	False	46.7	20	48	J-3313
H-429	False	1,000.0	False	750.2	20	21	J-2382
J-3521	False	1,000.0	False	750.2	20	21	J-2382
J-3526	False	1,000.0	False	46.8	20	63	J-3313
J-3527	False	1,000.0	False	824.2	20	77	H-385
J-3559	True	2,500.0	False	2,414.8	20	55	J-2096
J-3620	False	1,000.0	False	756.0	20	28	H-385
J-2	False	1,000.0	True	2,700.6	20	29	J-2096
J-7	False	1,000.0	True	1,569.4	20	47	J-1093
J-8	False	1,000.0	True	1,569.4	20	47	J-1093
J-11	False	1,000.0	True	1,566.0	20	39	J-1093

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-12	False	1,000.0	True	1,566.0	20	39	J-1093
J-16	False	1,000.0	True	1,162.2	20	20	J-93
J-17	True	2,500.0	True	3,196.6	20	48	J-2932
J-18	True	2,500.0	True	3,196.6	20	48	J-2932
J-21	False	1,000.0	True	3,219.4	20	20	H-18
J-23	False	1,000.0	True	1,315.8	20	24	J-64
J-24	False	1,000.0	True	1,315.8	20	24	J-64
J-27	False	1,000.0	True	1,342.5	20	37	J-3256
J-28	False	1,000.0	True	1,342.5	20	37	J-3256
J-33	False	1,000.0	True	2,259.4	20	23	J-2096
J-34	False	1,000.0	True	2,259.4	20	23	J-2096
1955	False	1,000.0	True	4,358.1	20	60	J-3430
J-45	False	1,000.0	True	2,323.2	20	21	J-2096
J-46	False	1,000.0	True	2,323.0	20	21	J-2096
J-47	False	1,000.0	True	2,301.9	20	25	H-232
J-48	False	1,000.0	True	2,302.1	20	25	H-232
J-53	False	1,000.0	True	4,355.2	20	68	J-3430
J-54	False	1,000.0	True	4,355.8	20	68	J-3430
J-55	False	1,000.0	True	1,598.1	20	20	J-375
J-65	False	1,000.0	True	2,626.3	20	20	J-66
J-66	False	1,000.0	True	2,626.4	20	20	J-65
J-69	True	2,500.0	True	2,901.6	20	53	J-2932
J-70	True	2,500.0	True	2,901.2	20	53	J-2932
J-73	False	1,000.0	True	1,871.0	20	20	H-27
J-76	False	1,000.0	True	1,501.2	20	20	H-165
J-83	False	1,000.0	True	1,326.3	20	25	J-2766
J-84	False	1,000.0	True	1,326.2	20	25	J-2766
J-93	False	1,000.0	True	1,161.3	20	20	H-244
J-97	False	1,000.0	True	1,362.6	20	36	J-3256
J-102	False	1,000.0	True	1,077.3	20	21	J-2766
J-103	False	1,000.0	True	1,077.3	20	21	J-2766
J-107	False	1,000.0	True	1,763.9	20	26	J-375
J-109	False	1,000.0	True	1,608.0	20	52	J-1093
J-115	True	2,500.0	True	2,984.7	20	50	J-2096
J-124	False	1,000.0	True	4,260.2	20	58	J-3430
J-125	False	1,000.0	True	4,260.2	20	59	J-3430
J-128	False	1,000.0	True	1,360.6	20	35	J-3256
J-131	False	1,000.0	True	1,504.5	20	20	J-76
J-132	False	1,000.0	True	1,414.5	20	28	J-1093
J-133	False	1,000.0	True	1,414.5	20	28	J-1093
J-134	False	1,000.0	True	1,050.2	20	20	H-202
J-136	False	1,000.0	True	2,135.0	20	22	J-2096
J-151	False	1,000.0	True	1,164.7	20	20	H-311
J-152	False	1,000.0	True	1,166.6	20	20	J-1326
J-156	False	1,000.0	True	1,762.4	20	29	J-375
J-157	False	1,000.0	True	1,763.0	20	29	J-375
J-159	False	1,000.0	True	2,879.8	20	43	J-1618
J-160	True	2,500.0	True	2,760.1	20	46	J-2096
J-161	True	2,500.0	True	2,760.1	20	46	J-2096
J-164	True	2,500.0	True	2,984.7	20	50	J-2096
J-165	False	1,000.0	True	2,923.6	20	20	J-2675
J-166	False	1,000.0	True	2,910.9	20	20	H-206

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J-171	False	1,000.0	True	3,299.0	20	32	J-2096
J-173	False	1,000.0	True	3,327.1	20	31	J-2096
J-179	True	2,500.0	True	2,544.7	20	47	J-3072
J-180	True	2,500.0	True	2,544.7	20	47	J-3072
J-181	False	1,000.0	True	1,446.5	20	28	J-1093
J-182	False	1,000.0	True	1,446.5	20	28	J-1093
J-187	False	1,000.0	True	2,831.8	20	38	J-3072
J-188	False	1,000.0	True	2,832.5	20	35	J-3072
J-189	False	1,000.0	True	1,553.8	20	34	J-1093
J-190	False	1,000.0	True	1,553.8	20	34	J-1093
J-193	False	1,000.0	True	1,943.5	20	20	H-102
J-194	False	1,000.0	True	1,950.6	20	20	J-193
J-198	False	1,000.0	True	1,496.4	20	25	J-2096
J-206	False	1,000.0	True	2,855.0	20	20	J-3430
J-209	False	1,000.0	True	1,449.1	20	20	H-435
J-215	False	1,000.0	True	1,608.1	20	52	J-1093
J-216	False	1,000.0	True	1,607.6	20	52	J-1093
J-218	False	1,000.0	True	3,001.1	20	20	H-155
J-219	False	1,000.0	True	2,980.5	20	20	H-155
J-220	False	1,000.0	True	1,453.2	20	20	J-2643
J-221	False	1,000.0	True	1,452.8	20	20	J-2643
J-222	False	1,000.0	True	1,515.1	20	27	J-1068
J-223	False	1,000.0	True	1,515.1	20	27	J-1068
J-230	False	1,000.0	True	1,434.5	20	38	J-1068
J-231	False	1,000.0	True	1,434.5	20	38	J-1068
J-232	False	1,000.0	True	1,006.4	20	20	J-233
J-233	False	1,000.0	True	1,000.0	20	20	J-232
J-235	False	1,000.0	True	4,107.2	20	33	J-3430
J-236	False	1,000.0	True	4,107.1	20	33	J-3430
J-237	False	1,000.0	True	1,000.9	20	20	J-3210
J-245	False	1,000.0	True	1,110.3	20	20	J-1068
J-246	False	1,000.0	True	1,109.8	20	20	J-1068
J-247	False	1,000.0	True	1,558.9	20	33	J-1093
J-248	False	1,000.0	True	1,558.9	20	33	J-1093
J-252	False	1,000.0	True	4,110.3	20	23	J-2932
J-253	True	2,500.0	True	2,759.0	20	33	J-2096
J-255	False	1,000.0	True	1,607.5	20	51	J-1093
J-256	False	1,000.0	True	1,607.5	20	51	J-1093
J-259	False	1,000.0	True	1,026.9	20	20	J-2854
J-622 N. Water	True	1,750.0	True	1,751.0	20	56	J-2096
J-267	True	2,500.0	True	3,363.7	20	26	J-2932
J-268	False	1,000.0	True	2,304.4	20	26	J-2096
J-274	False	1,000.0	True	2,834.1	20	39	J-3072
J-275	False	1,000.0	True	2,834.0	20	38	J-3072
J-281	False	1,000.0	True	4,073.8	20	22	J-3430
J-284	False	1,000.0	True	2,412.6	20	27	J-1618
J-290	False	1,000.0	True	1,301.8	20	22	J-64
J-291	False	1,000.0	True	1,301.8	20	23	J-64
J-292	False	1,000.0	True	1,542.2	20	34	J-1093
J-293	False	1,000.0	True	1,542.6	20	34	J-1093

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J-294	False	1,000.0	True	3,822.3	20	20	J-295
J-295	False	1,000.0	True	3,817.0	20	20	J-1318
J-296	False	1,000.0	True	1,076.9	20	20	J-2766
J-299	False	1,000.0	True	1,007.2	20	20	J-300
J-300	False	1,000.0	True	1,006.7	20	20	J-299
J-301	True	2,500.0	True	2,713.9	20	42	J-2096
J-302	True	2,500.0	True	2,713.9	20	42	J-2096
J-304	False	1,000.0	True	1,763.4	20	21	J-3226
J-305	False	1,000.0	True	1,762.2	20	21	J-3226
J-309	False	1,000.0	True	3,145.1	20	20	J-2675
J-310	False	1,000.0	True	2,640.0	20	20	J-2932
J-311	False	1,000.0	True	2,828.1	20	38	J-3072
J-312	False	1,000.0	True	2,828.2	20	33	J-3072
J-316	False	1,000.0	True	3,930.3	20	25	J-2932
J-317	True	2,500.0	True	2,619.4	20	48	J-2096
J-320	False	1,000.0	True	4,500.0	20	102	J-3467
J-321	False	1,000.0	True	2,135.1	20	23	J-2096
J-325	True	2,500.0	True	3,363.8	20	26	J-2932
J-330	True	2,500.0	True	3,180.7	20	25	H-179
J-332	False	1,000.0	True	2,826.4	20	38	J-3072
J-333	False	1,000.0	True	2,826.5	20	33	J-3072
J-334	False	1,000.0	True	1,548.0	20	30	J-1093
J-335	False	1,000.0	True	1,548.0	20	30	J-1093
J-339	False	1,000.0	True	1,745.4	20	41	J-2096
J-340	False	1,000.0	True	1,745.4	20	41	J-2096
J-343	False	1,000.0	True	2,705.9	20	28	J-2096
J-344	False	1,000.0	True	2,705.9	20	28	J-2096
J-345	False	1,000.0	True	2,452.8	20	20	H-218
J-349	False	1,000.0	True	2,250.5	20	23	J-2096
J-350	False	1,000.0	True	2,250.1	20	23	J-2096
J-353	False	1,000.0	True	1,799.1	20	20	H-338
J-354	False	1,000.0	True	1,806.2	20	20	H-338
J-355	False	1,000.0	True	1,874.2	20	20	J-73
J-359	False	1,000.0	True	1,571.1	20	41	J-1093
J-360	False	1,000.0	True	1,571.1	20	41	J-1093
J-361	False	1,000.0	True	2,143.4	20	123	H-385
J-362	False	1,000.0	True	2,145.5	20	123	H-385
J-368	False	1,000.0	True	2,322.2	20	30	J-2096
J-370	True	2,500.0	True	2,758.9	20	43	J-2096
J-371	True	2,500.0	True	2,758.9	20	43	J-2096
J-375	False	1,000.0	True	1,584.2	20	20	H-11
J-388	False	1,000.0	True	2,547.5	20	20	H-119
J-390	True	2,500.0	True	2,721.8	20	25	H-261
J-392	False	1,000.0	True	1,137.1	20	20	H-312
J-394	False	1,000.0	True	4,220.0	20	54	J-3430
J-400	True	2,500.0	True	3,368.4	20	40	J-654
J-402	False	1,000.0	True	1,326.4	20	26	J-3094
J-410	False	1,000.0	True	2,411.3	20	25	J-2766
J-416	False	1,000.0	True	2,809.8	20	20	H-8A
J-420	False	1,000.0	True	4,139.7	20	54	J-3430
J-422	False	1,000.0	True	2,364.1	20	20	H-203
J-428	True	2,500.0	True	2,516.0	20	39	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-430	False	1,000.0	True	2,817.2	20	20	H-43
J-432	False	1,000.0	True	2,394.5	20	20	H-204
J-434	False	1,000.0	True	1,175.1	20	39	J-3226
J-438	True	2,500.0	True	3,208.0	20	46	J-2932
J-440	True	2,500.0	True	2,791.2	20	42	J-2096
J-442	False	1,000.0	True	1,197.3	20	26	J-3226
J-444	False	1,000.0	True	1,562.2	20	36	J-1093
J-448	False	1,000.0	True	3,281.7	20	26	J-2096
J-452	False	1,000.0	True	1,604.0	20	20	H-364
J-458	True	2,500.0	True	3,467.7	20	41	J-2932
J-462	True	2,500.0	True	2,548.5	20	41	J-2096
J-464	False	1,000.0	True	1,628.9	20	20	H-299
J-466	True	2,500.0	True	2,968.7	20	45	J-2932
J-468	True	2,500.0	True	2,934.2	20	39	J-3072
J-470	True	2,500.0	True	2,515.7	20	47	J-3072
J-476	False	1,000.0	True	2,396.1	20	20	H-225
J-484	False	1,000.0	True	3,351.3	20	20	H-173
J-486	False	1,000.0	True	2,338.7	20	33	J-2096
J-492	False	1,000.0	True	2,331.3	20	32	J-2096
J-500	False	1,000.0	True	1,439.4	20	20	H-433
J-502	True	2,500.0	True	2,519.8	20	47	J-3072
J-506	False	1,000.0	True	2,614.6	20	20	H-116
J-508	False	1,000.0	True	2,339.2	20	40	J-2096
J-510	False	1,000.0	True	1,358.3	20	20	H-199
J-512	False	1,000.0	True	3,273.7	20	21	J-2766
J-514	False	1,000.0	True	1,570.9	20	40	J-1093
J-516	False	1,000.0	True	3,027.7	20	35	J-654
J-518	False	1,000.0	True	2,096.3	20	21	H-320
J-520	False	1,000.0	True	1,689.8	20	20	H-188
J-526	False	1,000.0	True	3,456.3	20	29	J-3072
J-528	True	2,500.0	True	2,721.5	20	25	H-117
J-534	True	2,500.0	True	2,685.8	20	45	J-2096
J-536	False	1,000.0	True	2,157.3	20	20	H-161
J-538	False	1,000.0	True	2,010.8	20	28	J-654
J-540	False	1,000.0	True	2,528.7	20	20	H-193
J-542	False	1,000.0	True	1,545.9	20	40	J-1093
J-546	False	1,000.0	True	1,014.0	20	25	J-3219
J-548	False	1,000.0	True	1,010.4	20	36	J-3219
J-554	True	2,500.0	True	2,952.9	20	25	H-258
J-556	False	1,000.0	True	3,004.8	20	41	J-2932
J-558	False	1,000.0	True	2,639.8	20	20	H-62
J-560	False	1,000.0	True	1,113.4	20	20	H-305
J-566	True	2,500.0	True	2,716.1	20	49	J-3072
J-568	False	1,000.0	True	3,070.6	20	23	J-2766
J-570	True	2,500.0	True	2,862.0	20	25	H-262
J-572	False	1,000.0	True	1,847.8	20	20	H-6C
J-578	False	1,000.0	True	1,385.7	20	20	H-197
J-580	False	1,000.0	True	2,394.8	20	20	H-184
J-584	True	2,500.0	True	2,968.4	20	38	J-2096
J-588	False	1,000.0	True	3,783.1	20	20	J-2766
J-590	False	1,000.0	True	1,578.0	20	49	J-1093
J-594	False	1,000.0	True	4,131.1	20	28	J-3430

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-596	False	1,000.0	True	1,738.7	20	20	H-301
J-598	False	1,000.0	True	2,649.2	20	20	H-191
J-600	False	1,000.0	True	2,801.8	20	42	J-2096
J-602	False	1,000.0	True	3,471.7	20	32	J-2096
J-604	False	1,000.0	True	1,011.1	20	20	H-6A/7A
J-610	False	1,000.0	True	4,165.7	20	58	J-3430
J-612	False	1,000.0	True	2,936.3	20	35	J-2096
J-616	False	1,000.0	True	1,575.1	20	24	J-2766
J-626	False	1,000.0	True	2,579.3	20	20	H-153
J-628	False	1,000.0	True	1,562.3	20	35	J-1093
J-632	False	1,000.0	True	3,141.0	20	25	J-2096
J-634	True	2,500.0	True	3,147.1	20	25	H-180
J-642	False	1,000.0	True	3,855.9	20	20	H-183
J-646	False	1,000.0	True	2,974.4	20	20	H-205
J-648	False	1,000.0	True	2,549.8	20	20	H-209
J-650	False	1,000.0	True	2,905.6	20	20	H-208
J-654	False	1,000.0	True	1,595.0	20	20	H-295
J-658	True	2,500.0	True	2,538.6	20	50	J-3072
J-672	False	1,000.0	True	1,785.5	20	20	H-195
J-674	False	1,000.0	True	4,129.5	20	26	J-3430
J-680	False	1,000.0	True	1,315.8	20	29	J-3094
J-687	True	2,500.0	True	2,824.4	20	34	J-2096
J-688	False	1,000.0	True	3,294.6	20	33	J-2096
J-690	True	2,500.0	True	3,327.0	20	31	J-2932
J-694	False	1,000.0	True	1,607.4	20	29	J-1093
J-700	True	2,500.0	True	3,150.3	20	41	J-2932
J-702	False	1,000.0	True	4,246.6	20	56	J-3430
J-708	False	1,000.0	True	1,321.6	20	30	J-3094
J-710	False	1,000.0	True	1,569.6	20	40	J-1093
J-714	False	1,000.0	True	1,756.4	20	20	H-339
J-718	False	1,000.0	True	3,278.1	20	37	J-2972
J-720	False	1,000.0	True	1,450.2	20	20	H-198
J-726	True	2,500.0	True	2,927.4	20	34	J-2096
J-728	False	1,000.0	True	4,142.7	20	43	J-3430
J-730	True	2,500.0	True	2,519.8	20	49	J-3072
J-740	False	1,000.0	True	1,562.0	20	39	J-1093
J-746	True	2,500.0	True	2,703.9	20	39	J-2096
J-750	True	2,500.0	True	2,868.8	20	25	H-181
J-752	True	2,500.0	True	2,860.7	20	34	J-2096
J-756	False	1,000.0	True	2,601.6	20	20	H-118
J-758	False	1,000.0	True	2,133.7	20	20	H-189
J-762	False	1,000.0	True	3,762.2	20	25	J-2096
J-766	False	1,000.0	True	2,668.8	20	20	H-185
J-768	False	1,000.0	True	1,562.5	20	27	J-1093
J-770	True	2,500.0	True	3,224.2	20	25	H-260
J-775	False	1,000.0	True	1,595.7	20	52	J-1093
J-778	False	1,000.0	True	1,504.0	20	20	H-365
J-782	False	1,000.0	True	1,833.3	20	25	J-2766
J-786	False	1,000.0	True	1,569.1	20	47	J-1093
J-790	False	1,000.0	True	1,562.5	20	29	J-1093
J-792	True	2,500.0	True	2,636.7	20	43	J-2096
J-794	True	2,500.0	True	3,187.9	20	42	J-654

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J-796	False	1,000.0	True	3,114.0	20	20	H-373
J-798	False	1,000.0	True	1,957.7	20	20	H-103
J-800	False	1,000.0	True	1,380.2	20	20	H-302
J-802	True	2,500.0	True	2,828.7	20	48	J-3072
J-804	False	1,000.0	True	1,874.2	20	31	J-2932
J-807	False	1,000.0	True	1,095.3	20	20	H-F6
J-812	False	1,000.0	True	1,834.3	20	20	H-210
J-814	False	1,000.0	True	2,083.5	20	20	H-194
J-818	False	1,000.0	True	1,598.6	20	20	H-196
J-820	False	1,000.0	True	4,133.0	20	38	J-3430
J-822	False	1,000.0	True	3,513.0	20	20	H-228
J-824	False	1,000.0	True	1,899.7	20	20	H-160
J-826	False	1,000.0	True	1,731.6	20	20	H-300
J-830	False	1,000.0	True	4,153.3	20	36	J-3430
J-832	True	2,500.0	True	3,253.5	20	25	H-227
J-834	False	1,000.0	True	2,941.5	20	20	H-157
J-840	False	1,000.0	True	1,568.9	20	43	J-1093
J-842	False	1,000.0	True	3,181.8	20	20	H-162
J-844	False	1,000.0	True	1,920.8	20	21	J-3306
J-848	False	1,000.0	True	2,924.9	20	20	H-F8
J-852	False	1,000.0	True	1,187.8	20	26	J-3226
J-854	False	1,000.0	True	1,884.1	20	28	J-654
J-858	False	1,000.0	True	1,605.9	20	30	J-1093
J-862	False	1,000.0	True	3,221.8	20	22	J-2096
J-866	False	1,000.0	True	2,421.8	20	20	H-120
J-870	True	2,500.0	True	3,212.1	20	27	J-2096
J-878	False	1,000.0	True	3,344.4	20	20	H-360
J-880	False	1,000.0	True	2,337.6	20	38	J-2096
J-882	False	1,000.0	True	2,216.3	20	20	H-104
J-886	True	2,500.0	True	3,223.7	20	39	J-2932
J-888	False	1,000.0	True	1,121.3	20	20	H-314
J-890	False	1,000.0	True	1,112.1	20	20	H-1C/2C
J-892	True	2,500.0	True	2,883.0	20	34	J-2096
J-894	False	1,000.0	True	1,946.5	20	20	H-294
J-898	False	1,000.0	True	1,895.6	20	20	H-190
J-900	False	1,000.0	True	2,189.5	20	20	H-192
J-902	False	1,000.0	True	3,103.8	20	20	H-112
J-904	True	2,500.0	True	3,486.0	20	44	J-2932
J-912	False	1,000.0	True	1,459.9	20	20	J-913
J-913	False	1,000.0	True	1,460.2	20	20	J-912
J-915	False	1,000.0	True	1,341.8	20	37	J-3256
J-917	False	1,000.0	True	1,742.4	20	41	J-2096
J-918	False	1,000.0	True	1,742.7	20	41	J-2096
J-920	False	1,000.0	True	1,857.6	20	20	H-101
J-923	False	1,000.0	True	1,250.8	20	30	J-1068
J-924	False	1,000.0	True	1,250.8	20	30	J-1068
J-927	False	1,000.0	True	4,093.8	20	23	J-3430
J-938	False	1,000.0	True	1,810.6	20	20	H-338
J-939	False	1,000.0	True	1,810.6	20	20	J-938
J-940	False	1,000.0	True	1,446.5	20	29	J-1093
J-941	False	1,000.0	True	1,446.5	20	29	J-1093
J-944	False	1,000.0	True	2,705.8	20	28	J-2096

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J-945	False	1,000.0	True	2,820.4	20	36	J-3072
J-947	False	1,000.0	True	1,944.8	20	30	J-654
J-949	True	2,500.0	True	2,547.8	20	25	H-175
J-951	True	2,500.0	True	3,201.3	20	48	J-2932
J-952	True	2,500.0	True	3,200.3	20	48	J-2932
J-953	False	1,000.0	True	1,122.5	20	20	J-1068
J-954	False	1,000.0	True	1,122.4	20	20	J-1068
J-956	False	1,000.0	True	1,925.3	20	20	H-321
J-957	False	1,000.0	True	1,926.1	20	20	J-1051
J-958	False	1,000.0	True	3,278.1	20	50	J-2972
J-959	False	1,000.0	True	1,761.5	20	20	J-3430
J-960	False	1,000.0	True	2,297.0	20	23	J-2096
J-962	False	1,000.0	True	1,062.9	20	20	J-1446
J-963	False	1,000.0	True	1,061.2	20	20	J-1446
J-966	False	1,000.0	True	2,825.8	20	38	J-3072
J-967	False	1,000.0	True	2,825.7	20	37	J-3072
J-970	False	1,000.0	True	2,705.0	20	25	J-2096
J-978	False	1,000.0	True	4,106.3	20	20	J-3430
J-980	False	1,000.0	True	3,752.2	20	20	H-37
J-983	False	1,000.0	True	4,101.7	20	25	J-3430
J-984	False	1,000.0	True	4,119.3	20	27	J-3430
J-987	False	1,000.0	True	4,120.0	20	28	J-3430
J-989	False	1,000.0	True	4,016.2	20	20	H-9
J-1001	False	1,000.0	True	1,489.1	20	28	J-1093
J-1002	False	1,000.0	True	1,489.1	20	28	J-1093
J-1003	False	1,000.0	True	2,703.5	20	28	J-2096
J-1004	False	1,000.0	True	2,703.5	20	27	J-2096
J-1007	False	1,000.0	True	1,805.9	20	30	J-375
J-1008	False	1,000.0	True	1,804.7	20	30	J-375
J-1009	False	1,000.0	True	2,720.6	20	20	H-151
J-1010	False	1,000.0	True	2,697.5	20	20	H-151
J-1015	False	1,000.0	True	1,776.8	20	44	J-2096
J-1016	False	1,000.0	True	1,776.8	20	43	J-2096
J-1017	True	2,500.0	True	2,519.8	20	47	J-3072
J-1018	True	2,500.0	True	2,519.8	20	47	J-3072
J-1019	False	1,000.0	True	1,605.8	20	37	J-1093
J-1020	False	1,000.0	True	1,605.8	20	37	J-1093
J-1026	True	2,500.0	True	2,713.6	20	32	J-2096
J-1027	True	2,500.0	True	2,713.7	20	31	J-2096
J-1028	True	2,500.0	True	3,193.4	20	25	H-177
J-1032	False	1,000.0	True	1,128.9	20	23	J-2852
J-1033	False	1,000.0	True	1,128.9	20	23	J-2852
J-1036	False	1,000.0	True	1,110.3	20	23	J-1068
J-1038	False	1,000.0	True	2,289.2	20	27	J-2096
J-1039	False	1,000.0	True	2,289.8	20	27	J-2096
J-1042	False	1,000.0	True	2,683.5	20	20	J-1043
J-1043	False	1,000.0	True	2,678.9	20	20	J-2872
J-1046	False	1,000.0	True	2,488.5	20	20	J-2096
J-1047	False	1,000.0	True	2,020.9	20	33	J-654
J-1048	False	1,000.0	True	2,022.7	20	33	J-654
J-1049	False	1,000.0	True	1,173.7	20	24	J-3226
J-1051	False	1,000.0	True	1,791.9	20	20	H-320

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1052	False	1,000.0	True	1,801.0	20	20	J-1051
J-1053	False	1,000.0	True	3,158.9	20	20	J-3301
J-1061	False	1,000.0	True	2,819.6	20	30	J-3072
J-1062	False	1,000.0	True	2,819.3	20	36	J-3072
J-1067	False	1,000.0	True	1,166.8	20	20	J-1326
J-1068	False	1,000.0	True	1,109.6	20	20	J-246
J-1070	False	1,000.0	True	1,570.8	20	42	J-1093
J-1071	False	1,000.0	True	1,570.8	20	42	J-1093
J-1075	False	1,000.0	True	3,596.8	20	20	J-2675
J-1076	False	1,000.0	True	3,550.5	20	20	J-2675
J-1077	False	1,000.0	True	1,778.7	20	44	J-2096
J-1078	False	1,000.0	True	1,779.0	20	44	J-2096
J-1079	False	1,000.0	True	2,304.6	20	24	H-232
J-1080	False	1,000.0	True	2,304.6	20	25	H-232
J-1081	False	1,000.0	True	2,699.4	20	28	J-2096
J-1083	False	1,000.0	True	2,603.6	20	20	J-1084
J-1084	False	1,000.0	True	2,581.6	20	20	H-64
J-1093	False	1,000.0	True	1,373.9	20	20	J-2742
J-1095	True	2,500.0	True	2,547.1	20	47	J-3072
J-1096	True	2,500.0	True	2,547.3	20	47	J-3072
J-1099	False	1,000.0	True	3,929.4	20	32	J-2766
J-1100	False	1,000.0	True	2,122.0	20	20	H-294
J-1101	False	1,000.0	True	2,119.9	20	20	H-294
J-1102	False	1,000.0	True	2,650.9	20	20	H-65
J-1103	False	1,000.0	True	2,627.6	20	20	H-65
J-1104	True	2,500.0	True	2,907.3	20	48	J-2932
J-1106	False	1,000.0	True	1,760.2	20	21	J-1159
J-1107	False	1,000.0	True	1,587.7	20	21	J-1159
J-1109	False	1,000.0	True	2,699.3	20	23	J-2096
J-1110	False	1,000.0	True	2,699.3	20	22	J-2096
J-1115	False	1,000.0	True	2,298.5	20	23	J-2096
J-1122	False	1,000.0	True	2,698.3	20	23	J-2096
J-1126	True	2,500.0	True	3,296.5	20	38	J-2932
J-1127	True	2,500.0	True	3,296.3	20	39	J-2932
J-1130	False	1,000.0	True	2,683.4	20	20	J-1042
J-1131	False	1,000.0	True	2,683.1	20	20	J-1130
J-1132	False	1,000.0	True	3,341.3	20	23	J-2096
J-1133	False	1,000.0	True	3,329.9	20	23	J-2096
J-1134	True	2,500.0	True	2,519.8	20	50	J-3072
J-1135	True	2,500.0	True	2,519.8	20	50	J-3072
J-1136	False	1,000.0	True	1,561.9	20	36	J-1093
J-1137	False	1,000.0	True	1,561.8	20	36	J-1093
J-1139	False	1,000.0	True	1,437.7	20	34	J-2096
J-1140	False	1,000.0	True	1,437.7	20	34	J-2096
J-1142	False	1,000.0	True	2,297.2	20	27	J-2096
J-1143	False	1,000.0	True	2,297.2	20	27	J-2096
J-1144	False	1,000.0	True	2,010.0	20	33	J-654
J-1145	False	1,000.0	True	2,008.6	20	33	J-654
J-1148	True	2,500.0	True	3,197.7	20	47	J-2932
J-1149	False	1,000.0	True	1,759.7	20	21	J-3226
J-1150	False	1,000.0	True	2,706.1	20	21	J-2135
J-1151	False	1,000.0	True	2,696.9	20	20	J-2135

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1156	False	1,000.0	True	2,683.5	20	20	H-152
J-1157	False	1,000.0	True	2,657.6	20	20	H-152
J-1160	True	2,500.0	True	3,337.6	20	30	J-2932
J-210 C Street	True	1,750.0	True	1,751.0	20	57	J-2096
J-1162	False	1,000.0	True	1,742.6	20	41	J-2096
J-1164	False	1,000.0	True	1,647.3	20	40	J-2096
J-1166	False	1,000.0	True	1,703.4	20	40	J-2096
J-1168	False	1,000.0	True	1,923.4	20	45	J-2096
J-1170	False	1,000.0	True	1,709.4	20	32	J-2096
J-1172	False	1,000.0	True	2,009.7	20	46	J-2096
J-1174	False	1,000.0	True	1,971.2	20	41	J-2096
J-1176	False	1,000.0	True	3,299.0	20	33	J-2096
J-1177	False	1,000.0	True	3,327.1	20	33	J-2096
J-1180	False	1,000.0	True	4,073.2	20	23	J-3430
J-1181	False	1,000.0	True	4,072.7	20	23	J-3430
J-1182	True	2,500.0	True	2,545.3	20	42	J-3072
J-1183	True	2,500.0	True	2,545.3	20	47	J-3072
J-1184	False	1,000.0	True	2,824.3	20	37	J-3072
J-1185	False	1,000.0	True	2,824.5	20	30	J-3072
J-1186	False	1,000.0	True	1,023.0	20	77	H-385
J-1193	False	1,000.0	True	4,124.6	20	33	J-3430
J-1194	False	1,000.0	True	4,109.4	20	21	J-2932
J-1195	False	1,000.0	True	4,109.0	20	20	J-2932
J-1198	False	1,000.0	True	2,698.3	20	24	J-2096
J-1199	False	1,000.0	True	4,125.8	20	34	J-3430
J-1201	False	1,000.0	True	2,821.1	20	36	J-3072
J-1202	False	1,000.0	True	2,821.4	20	28	J-3072
J-1203	True	2,500.0	True	2,713.6	20	29	J-2096
J-1210	True	2,500.0	True	3,208.0	20	47	J-2932
J-1215	False	1,000.0	True	2,716.6	20	20	H-156
J-1216	False	1,000.0	True	2,687.4	20	20	H-156
J-1217	False	1,000.0	True	2,816.1	20	31	J-3072
J-1218	False	1,000.0	True	2,815.5	20	39	J-3072
J-1221	False	1,000.0	True	1,561.4	20	21	J-1386
J-1222	False	1,000.0	True	1,561.4	20	21	J-1386
J-1223	False	1,000.0	True	1,551.6	20	20	J-1386
J-1224	False	1,000.0	True	1,551.6	20	21	J-1386
J-1227	True	2,500.0	True	3,321.5	20	40	J-2932
J-1228	True	2,500.0	True	3,324.3	20	40	J-2932
J-1229	False	1,000.0	True	1,471.9	20	20	J-1230
J-1230	False	1,000.0	True	1,471.7	20	20	J-1229
J-1235	False	1,000.0	True	3,288.4	20	40	J-2096
J-1237	False	1,000.0	True	1,548.0	20	27	J-1093
J-1239	False	1,000.0	True	4,122.9	20	33	J-3430
J-1242	False	1,000.0	True	1,569.4	20	46	J-1093
J-1250	False	1,000.0	True	2,697.3	20	21	J-2135
J-1253	False	1,000.0	True	2,711.1	20	20	J-2135
J-1254	False	1,000.0	True	2,823.3	20	37	J-3072
J-1255	False	1,000.0	True	2,823.6	20	28	J-3072
J-1256	True	2,500.0	True	3,014.9	20	52	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1257	True	2,500.0	True	3,010.7	20	52	J-2932
J-1260	False	1,000.0	True	1,554.3	20	31	J-1093
J-1267	False	1,000.0	True	4,123.5	20	28	J-3430
J-1269	False	1,000.0	True	1,920.8	20	21	J-3306
J-1270	False	1,000.0	True	1,561.4	20	21	J-1386
J-1271	False	1,000.0	True	1,561.4	20	21	J-1386
J-1273	False	1,000.0	True	2,113.3	20	20	J-3321
J-1274	False	1,000.0	True	1,710.8	20	40	J-2096
J-1275	False	1,000.0	True	1,710.8	20	40	J-2096
J-1276	False	1,000.0	True	1,744.7	20	27	J-2932
J-1277	False	1,000.0	True	1,374.0	20	20	J-2932
J-1281	False	1,000.0	True	2,710.8	20	20	J-2675
J-1282	False	1,000.0	True	1,762.7	20	21	J-3226
J-1283	False	1,000.0	True	1,762.2	20	20	J-3226
J-1288	False	1,000.0	True	1,559.6	20	21	J-1386
J-1289	False	1,000.0	True	1,560.5	20	21	J-1386
J-1291	False	1,000.0	True	1,531.4	20	39	J-1093
J-1292	False	1,000.0	True	1,531.4	20	40	J-1093
J-1295	False	1,000.0	True	2,785.3	20	44	J-2096
J-1296	False	1,000.0	True	2,785.3	20	45	J-2096
J-1300	False	1,000.0	True	1,293.3	20	20	H-316
J-1304	False	1,000.0	True	1,109.0	20	22	J-3226
J-1306	True	2,500.0	True	2,972.4	20	47	J-2096
J-1308	True	2,500.0	True	3,472.7	20	36	J-2932
J-1310	True	2,500.0	True	2,513.5	20	52	J-3072
J-1311	True	2,500.0	True	2,516.5	20	50	J-3072
J-1312	False	1,000.0	True	3,268.9	20	42	J-2096
J-1313	False	1,000.0	True	3,268.9	20	44	J-2096
J-1318	False	1,000.0	True	3,746.3	20	20	J-295
J-1322	False	1,000.0	True	4,358.1	20	65	J-3430
J-1325	False	1,000.0	True	1,165.6	20	20	J-1326
J-1326	False	1,000.0	True	1,165.7	20	20	J-3226
J-1327	False	1,000.0	True	1,654.3	20	20	J-1328
J-1328	False	1,000.0	True	1,661.1	20	20	J-1327
J-1333	False	1,000.0	True	1,574.8	20	44	J-1093
J-1334	False	1,000.0	True	1,574.8	20	44	J-1093
J-1335	True	2,500.0	True	2,519.8	20	45	J-3072
J-1336	True	2,500.0	True	2,519.8	20	45	J-3072
J-1337	False	1,000.0	True	3,288.4	20	42	J-2096
J-1339	False	1,000.0	True	3,262.5	20	31	J-2096
J-1340	False	1,000.0	True	3,262.6	20	29	J-2096
J-1341	False	1,000.0	True	1,536.2	20	38	J-1093
J-1342	False	1,000.0	True	1,536.3	20	38	J-1093
J-1344	False	1,000.0	True	1,647.3	20	41	J-2096
J-1345	True	2,500.0	True	3,262.4	20	41	J-2932
J-1346	False	1,000.0	True	1,138.0	20	20	J-1347
J-1347	False	1,000.0	True	1,133.4	20	20	J-1346
J-1352	False	1,000.0	True	1,856.7	20	31	J-375
J-1356	False	1,000.0	True	1,950.9	20	20	J-1357
J-1357	False	1,000.0	True	1,949.2	20	20	J-1356
J-1362	False	1,000.0	True	1,496.4	20	26	J-2096
J-1363	False	1,000.0	True	4,109.0	20	32	J-3430

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1366	False	1,000.0	True	1,568.9	20	49	J-1093
J-1367	False	1,000.0	True	1,568.9	20	49	J-1093
J-1373	False	1,000.0	True	1,742.4	20	36	J-2096
J-1375	True	2,500.0	True	2,519.8	20	29	J-3072
J-1376	True	2,500.0	True	2,519.8	20	36	J-3072
J-1380	False	1,000.0	True	2,724.6	20	46	J-2096
J-1381	False	1,000.0	True	1,578.0	20	49	J-1093
J-1382	False	1,000.0	True	4,125.5	20	38	J-3430
J-1383	False	1,000.0	True	4,125.5	20	38	J-3430
J-1384	False	1,000.0	True	1,315.5	20	33	J-3094
J-1385	False	1,000.0	True	1,315.6	20	33	J-3094
J-1386	False	1,000.0	True	1,541.4	20	20	H-449
J-1388	False	1,000.0	True	2,124.5	20	20	J-1389
J-1389	False	1,000.0	True	2,140.6	20	20	J-1388
J-1390	False	1,000.0	True	1,709.4	20	31	J-2096
J-1391	False	1,000.0	True	1,709.4	20	32	J-2096
J-1394	True	2,500.0	True	2,709.6	20	41	J-2096
J-1395	True	2,500.0	True	2,709.6	20	42	J-2096
J-1396	False	1,000.0	True	1,595.7	20	53	J-1093
J-1397	False	1,000.0	True	2,705.9	20	28	J-2096
J-1398	False	1,000.0	True	2,705.9	20	28	J-2096
J-1400	True	2,500.0	True	2,520.0	20	52	J-3072
J-1401	True	2,500.0	True	2,520.0	20	53	J-3072
J-1407	False	1,000.0	True	1,452.3	20	20	J-2643
J-1408	False	1,000.0	True	1,452.8	20	20	J-2643
J-1409	False	1,000.0	True	3,446.4	20	20	J-3426
J-1412	False	1,000.0	True	1,554.0	20	20	H-450
J-1413	False	1,000.0	True	1,555.6	20	21	J-1684
J-1414	False	1,000.0	True	2,251.5	20	23	J-2096
J-1415	False	1,000.0	True	2,247.2	20	23	J-2096
J-1416	False	1,000.0	True	1,742.2	20	41	J-2096
J-1417	False	1,000.0	True	1,742.4	20	41	J-2096
J-1426	False	1,000.0	True	1,315.4	20	24	J-64
J-1427	False	1,000.0	True	1,570.2	20	44	J-1093
J-1428	False	1,000.0	True	1,570.2	20	44	J-1093
J-1429	False	1,000.0	True	2,004.1	20	22	H-320
J-1430	False	1,000.0	True	2,001.8	20	22	H-320
J-1434	False	1,000.0	True	1,608.1	20	52	J-1093
J-1435	False	1,000.0	True	4,209.5	20	55	J-3430
J-1439	False	1,000.0	True	2,379.1	20	20	H-28
J-1442	False	1,000.0	True	1,554.3	20	34	J-1093
J-1443	False	1,000.0	True	1,554.3	20	34	J-1093
J-1444	False	1,000.0	True	2,456.8	20	29	J-1618
J-1446	False	1,000.0	True	1,052.2	20	20	J-134
J-1447	False	1,000.0	True	1,604.8	20	22	J-1093
J-1448	False	1,000.0	True	1,604.8	20	23	J-1093
J-1452	False	1,000.0	True	4,120.3	20	34	J-3430
J-1457	False	1,000.0	True	4,120.4	20	34	J-3430
J-1458	False	1,000.0	True	1,792.9	20	20	J-1051
J-1464	False	1,000.0	True	1,566.8	20	40	J-1093
J-1466	False	1,000.0	True	2,713.1	20	22	J-1677
J-1467	False	1,000.0	True	2,732.8	20	22	J-1677

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1470	False	1,000.0	True	1,708.3	20	41	J-2096
J-1471	False	1,000.0	True	1,709.4	20	41	J-2096
J-1473	False	1,000.0	True	4,123.0	20	28	J-3430
J-1475	False	1,000.0	True	2,475.9	20	20	J-2096
J-1481	False	1,000.0	True	2,849.0	20	20	H-8A
J-1484	False	1,000.0	True	2,689.1	20	21	J-2135
J-1485	False	1,000.0	True	2,688.3	20	21	J-2135
J-1486	False	1,000.0	True	1,365.8	20	34	J-1068
J-1487	False	1,000.0	True	1,365.8	20	34	J-1068
J-1489	False	1,000.0	True	1,543.8	20	30	J-1093
J-1500	False	1,000.0	True	1,543.3	20	34	J-1093
J-1501	False	1,000.0	True	1,543.4	20	34	J-1093
J-1504	True	2,500.0	True	2,547.7	20	25	J-2733
J-1505	True	2,500.0	True	3,182.9	20	46	J-2932
J-1518	False	1,000.0	True	1,605.9	20	31	J-1093
J-1519	False	1,000.0	True	4,121.1	20	36	J-3430
J-1521	False	1,000.0	True	1,802.2	20	30	J-375
J-1525	False	1,000.0	True	1,562.9	20	44	J-1093
J-1526	False	1,000.0	True	1,562.9	20	44	J-1093
J-1528	False	1,000.0	True	4,123.1	20	33	J-3430
J-1529	False	1,000.0	True	4,123.0	20	33	J-3430
J-1530	False	1,000.0	True	1,172.1	20	21	H-232
J-1531	False	1,000.0	True	1,172.1	20	21	H-232
J-1534	False	1,000.0	True	2,680.5	20	20	J-2929
J-1535	False	1,000.0	True	2,682.8	20	20	J-1534
J-1536	False	1,000.0	True	2,345.4	20	48	J-2096
J-1537	False	1,000.0	True	2,329.0	20	48	J-2096
J-1540	False	1,000.0	True	1,446.5	20	24	J-1093
J-1550	False	1,000.0	True	4,103.8	20	25	J-3430
J-1551	False	1,000.0	True	4,103.8	20	25	J-3430
J-1552	False	1,000.0	True	1,570.2	20	41	J-1093
J-1554	False	1,000.0	True	1,568.9	20	43	J-1093
J-1556	False	1,000.0	True	2,705.0	20	26	J-2096
J-1559	False	1,000.0	True	2,702.1	20	23	J-2096
J-1560	False	1,000.0	True	2,702.1	20	22	J-2096
J-1562	False	1,000.0	True	1,006.4	20	37	J-3219
J-1563	False	1,000.0	True	1,005.8	20	37	J-3219
J-1565	False	1,000.0	True	2,699.2	20	22	J-2096
J-1566	False	1,000.0	True	2,699.2	20	22	J-2096
J-1570	False	1,000.0	True	3,412.8	20	28	J-3054
J-1574	False	1,000.0	True	1,548.0	20	31	J-1093
J-1575	False	1,000.0	True	1,547.9	20	31	J-1093
J-1576	True	2,500.0	True	3,333.1	20	30	J-2932
J-1578	False	1,000.0	True	1,871.0	20	20	H-101
J-1581	False	1,000.0	True	2,699.2	20	24	J-2096
J-1582	False	1,000.0	True	2,699.2	20	24	J-2096
J-1584	False	1,000.0	True	4,179.2	20	52	J-3430
J-1585	True	2,500.0	True	2,519.8	20	47	J-3072
J-1586	False	1,000.0	True	1,454.0	20	20	H-434
J-1589	False	1,000.0	True	1,797.2	20	46	J-2096
J-1590	False	1,000.0	True	1,794.4	20	46	J-2096
J-1591	False	1,000.0	True	1,229.4	20	20	J-2176

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1592	False	1,000.0	True	1,224.7	20	20	J-2176
J-1597	False	1,000.0	True	1,765.0	20	20	H-301
J-1603	False	1,000.0	True	1,563.4	20	39	J-1093
J-1604	False	1,000.0	True	1,563.4	20	39	J-1093
J-1605	False	1,000.0	True	1,322.4	20	21	J-3094
J-1606	False	1,000.0	True	1,321.4	20	30	J-3094
J-1610	False	1,000.0	True	1,562.7	20	37	J-1093
J-1611	False	1,000.0	True	1,562.7	20	37	J-1093
J-1612	False	1,000.0	True	2,096.5	20	22	H-320
J-1614	False	1,000.0	True	2,290.1	20	27	J-2096
J-1615	False	1,000.0	True	2,290.1	20	27	J-2096
J-1616	False	1,000.0	True	4,358.1	20	67	J-3430
J-1618	False	1,000.0	True	2,315.9	20	20	J-2861
J-1620	False	1,000.0	True	2,699.4	20	29	J-2096
J-1623	False	1,000.0	True	2,676.7	20	20	J-2928
J-1629	False	1,000.0	True	1,703.4	20	40	J-2096
J-1632	False	1,000.0	True	1,187.5	20	30	J-3352
J-1633	False	1,000.0	True	1,175.5	20	30	J-3352
J-1636	False	1,000.0	True	3,690.0	20	20	H-228
J-1639	False	1,000.0	True	2,767.3	20	21	J-3306
J-1640	False	1,000.0	True	2,771.0	20	20	J-3306
J-1641	False	1,000.0	True	1,548.0	20	28	J-1093
J-1645	False	1,000.0	True	4,133.9	20	45	J-3430
J-1647	False	1,000.0	True	2,696.9	20	31	J-2096
J-1648	False	1,000.0	True	2,696.8	20	31	J-2096
J-1650	False	1,000.0	True	2,291.1	20	26	J-2096
J-1656	True	2,500.0	True	2,619.4	20	50	J-2096
J-1657	False	1,000.0	True	1,566.8	20	40	J-1093
J-1658	False	1,000.0	True	1,571.6	20	44	J-1093
J-1659	False	1,000.0	True	1,571.9	20	44	J-1093
J-1660	False	1,000.0	True	1,974.7	20	20	J-798
J-1661	False	1,000.0	True	4,179.8	20	56	J-3430
J-1665	False	1,000.0	True	4,014.8	20	20	J-3430
J-1667	False	1,000.0	True	4,084.9	20	26	J-3430
J-1668	False	1,000.0	True	4,085.7	20	27	J-3430
J-1670	False	1,000.0	True	1,562.6	20	27	J-1093
J-1672	False	1,000.0	True	1,391.5	20	20	H-197
J-1674	False	1,000.0	True	1,478.8	20	20	J-1068
J-1677	False	1,000.0	True	2,353.8	20	20	J-1466
J-1679	False	1,000.0	True	1,108.7	20	20	J-807
J-1682	False	1,000.0	True	1,151.7	20	20	J-654
J-1684	False	1,000.0	True	1,519.4	20	20	J-2921
J-1687	False	1,000.0	True	2,330.4	20	35	J-2096
J-1688	False	1,000.0	True	1,709.2	20	26	J-2096
J-1689	False	1,000.0	True	1,709.3	20	26	J-2096
J-1690	False	1,000.0	True	1,944.8	20	31	J-654
J-1694	False	1,000.0	True	1,884.1	20	29	J-654
J-1695	False	1,000.0	True	3,671.8	20	20	J-3430
J-1697	False	1,000.0	True	3,278.1	20	48	J-2972
J-1703	False	1,000.0	True	2,086.1	20	20	J-1677
J-1709	False	1,000.0	True	1,559.4	20	20	J-1386
J-1711	False	1,000.0	True	2,526.1	20	20	J-2025

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1714	False	1,000.0	True	2,261.3	20	20	J-1798
J-1716	False	1,000.0	True	2,721.2	20	21	J-3306
J-1718	False	1,000.0	True	1,132.1	20	20	J-3226
J-1719	False	1,000.0	True	1,568.5	20	36	J-1093
J-1720	False	1,000.0	True	1,568.6	20	36	J-1093
J-1721	False	1,000.0	True	4,086.4	20	26	J-3430
J-1722	False	1,000.0	True	4,131.0	20	39	J-3430
J-1724	False	1,000.0	True	1,562.5	20	37	J-1093
J-1725	False	1,000.0	True	1,562.5	20	37	J-1093
J-1726	False	1,000.0	True	2,758.7	20	22	J-1677
J-1730	False	1,000.0	True	2,528.8	20	20	J-2096
J-1733	False	1,000.0	True	1,471.7	20	20	J-1230
J-1735	False	1,000.0	True	2,698.2	20	26	J-2096
J-1736	False	1,000.0	True	2,698.2	20	26	J-2096
J-1739	False	1,000.0	True	2,879.8	20	28	J-1618
J-1748	False	1,000.0	True	2,713.0	20	24	J-2096
J-1749	False	1,000.0	True	2,713.0	20	25	J-2096
J-1750	False	1,000.0	True	2,019.5	20	33	J-654
J-1751	False	1,000.0	True	2,027.4	20	33	J-654
J-1755	False	1,000.0	True	1,037.1	20	20	J-1756
J-1756	False	1,000.0	True	1,036.8	20	20	J-3326
J-1757	False	1,000.0	True	1,058.3	20	23	J-3226
J-1759	False	1,000.0	True	1,562.5	20	29	J-1093
J-1760	False	1,000.0	True	1,562.5	20	29	J-1093
J-1761	False	1,000.0	True	1,715.0	20	21	H-299
J-1762	False	1,000.0	True	1,717.3	20	20	H-299
J-1763	False	1,000.0	True	4,181.3	20	53	J-3430
J-1764	False	1,000.0	True	4,182.1	20	54	J-3430
J-1765	False	1,000.0	True	2,777.8	20	45	J-2096
J-1767	False	1,000.0	True	3,278.1	20	40	J-2972
J-1768	False	1,000.0	True	3,278.1	20	40	J-2972
J-1771	False	1,000.0	True	1,742.1	20	42	J-2096
J-1773	False	1,000.0	True	4,141.7	20	58	J-3430
J-1774	False	1,000.0	True	4,140.2	20	58	J-3430
J-1777	False	1,000.0	True	1,923.4	20	46	J-2096
J-1778	False	1,000.0	True	1,562.5	20	28	J-1093
J-1779	False	1,000.0	True	1,654.9	20	21	H-299
J-1782	True	2,500.0	True	3,326.9	20	34	J-2932
J-1783	False	1,000.0	True	1,568.9	20	44	J-1093
J-1784	False	1,000.0	True	1,399.7	20	20	H-302
J-1786	True	2,500.0	True	2,942.9	20	20	J-2932
J-1787	True	2,500.0	True	3,323.5	20	25	J-1800
J-1788	False	1,000.0	True	1,562.5	20	36	J-1093
J-1789	False	1,000.0	True	2,657.4	20	20	J-506
J-1790	False	1,000.0	True	1,776.4	20	20	H-300
J-1793	False	1,000.0	True	4,125.6	20	37	J-3430
J-1794	False	1,000.0	True	2,647.3	20	20	J-1795
J-1795	False	1,000.0	True	2,645.6	20	20	J-2955
J-1798	False	1,000.0	True	2,252.7	20	20	J-3443
J-1800	True	2,500.0	True	3,324.4	20	25	J-1787
J-1802	False	1,000.0	True	1,561.2	20	20	H-434
J-1803	False	1,000.0	True	1,566.1	20	20	H-434

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-1804	False	1,000.0	True	4,125.6	20	22	J-3430
J-1807	False	1,000.0	True	1,850.7	20	20	H-210
J-1808	False	1,000.0	True	2,010.8	20	30	J-654
J-1809	False	1,000.0	True	1,562.5	20	29	J-1093
J-1813	False	1,000.0	True	4,118.3	20	37	J-3430
J-1818	False	1,000.0	True	1,574.8	20	37	J-1093
J-1819	False	1,000.0	True	2,705.3	20	27	J-2096
J-1820	False	1,000.0	True	2,705.2	20	27	J-2096
J-1821	False	1,000.0	True	2,678.9	20	20	J-2096
J-1828	False	1,000.0	True	1,016.8	20	21	H-6A/7A
J-1829	False	1,000.0	True	1,199.2	20	24	J-3226
J-1836	True	2,500.0	True	2,519.8	20	45	J-3072
J-1837	True	2,500.0	True	2,519.8	20	45	J-3072
J-1838	False	1,000.0	True	1,531.0	20	40	J-1093
J-1839	False	1,000.0	True	1,530.7	20	40	J-1093
J-1842	False	1,000.0	True	1,359.3	20	34	J-3256
J-1843	False	1,000.0	True	1,557.3	20	42	J-1093
J-1844	False	1,000.0	True	1,556.9	20	42	J-1093
J-1845	True	2,500.0	True	3,150.3	20	43	J-2932
J-1849	False	1,000.0	True	4,089.8	20	25	J-3430
J-1854	False	1,000.0	True	3,509.9	20	20	J-1855
J-1855	False	1,000.0	True	3,577.6	20	20	J-1854
J-1856	False	1,000.0	True	1,173.7	20	25	J-3226
J-1858	False	1,000.0	True	2,113.0	20	20	J-814
J-410NorthWater	True	3,000.0	True	3,001.0	20	20	J-390
J-1862	False	1,000.0	True	4,139.2	20	45	J-3430
J-1864	False	1,000.0	True	4,032.8	20	21	J-3270
J-1867	False	1,000.0	True	1,315.4	20	31	J-3094
J-1868	False	1,000.0	True	2,592.7	20	20	J-648
J-1869	False	1,000.0	True	2,026.2	20	21	J-2812
J-1870	False	1,000.0	True	2,100.7	20	21	J-2812
J-1871	False	1,000.0	True	2,664.8	20	20	J-626
J-1872	True	2,500.0	True	2,519.8	20	45	J-3072
J-1873	True	2,500.0	True	2,519.8	20	46	J-3072
J-1874	False	1,000.0	True	1,562.6	20	24	J-1093
J-1875	False	1,000.0	True	1,562.6	20	23	J-1093
J-1876	True	2,500.0	True	3,363.2	20	31	J-2932
J-1877	True	2,500.0	True	3,362.9	20	33	J-2932
J-1878	False	1,000.0	True	1,007.1	20	37	J-3219
J-1880	True	2,500.0	True	3,341.6	20	22	J-1787
J-1883	False	1,000.0	True	1,790.6	20	20	J-714
J-1888	False	1,000.0	True	1,175.0	20	39	J-3226
J-1891	False	1,000.0	True	2,704.0	20	25	J-2096
J-1895	False	1,000.0	True	1,459.3	20	20	H-198
J-1897	False	1,000.0	True	1,487.5	20	33	J-1093
J-1898	False	1,000.0	True	1,489.2	20	33	J-1093
J-1899	True	2,500.0	True	2,527.3	20	49	J-3072
J-1900	True	2,500.0	True	2,519.8	20	51	J-3072
J-1901	False	1,000.0	True	2,010.2	20	47	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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J-1905	False	1,000.0	True	2,441.6	20	21	J-3058
J-1906	False	1,000.0	True	1,605.4	20	20	J-1907
J-1907	False	1,000.0	True	1,608.3	20	20	J-1906
J-1910	False	1,000.0	True	2,249.0	20	20	J-882
J-301 S. James	True	2,250.0	True	2,251.0	20	42	J-2932
J-1913	False	1,000.0	True	1,132.3	20	20	J-RobertFrostSchool1
J-1915	False	1,000.0	True	2,605.7	20	20	J-540
J-1916	False	1,000.0	True	2,337.4	20	39	J-2096
J-1922	True	2,500.0	True	2,748.9	20	40	J-2096
J-1928	False	1,000.0	True	1,546.4	20	21	J-3298
J-1929	False	1,000.0	True	2,733.9	20	22	J-3298
J-1931	False	1,000.0	True	1,552.0	20	20	H-432
J-1932	False	1,000.0	True	1,557.0	20	20	J-1931
J-1934	False	1,000.0	True	3,456.3	20	32	J-3072
J-1936	False	1,000.0	True	4,016.3	20	20	J-642
J-1937	False	1,000.0	True	1,014.0	20	25	J-3219
J-1938	False	1,000.0	True	1,536.5	20	38	J-1093
J-1940	False	1,000.0	True	1,301.7	20	25	J-2766
J-1941	False	1,000.0	True	1,314.1	20	25	J-2766
J-1942	False	1,000.0	True	1,562.6	20	27	J-1093
J-1943	False	1,000.0	True	1,562.6	20	27	J-1093
J-1944	False	1,000.0	True	1,950.6	20	20	J-193
J-1952	False	1,000.0	True	2,322.2	20	31	J-2096
J-1955	False	1,000.0	True	1,756.5	20	20	J-2899
J-1956	False	1,000.0	True	1,778.0	20	20	J-1955
J-1959	False	1,000.0	True	1,529.0	20	20	J-3226
J-1962	False	1,000.0	True	1,124.7	20	20	J-3226
J-1967	False	1,000.0	True	4,131.1	20	23	J-3430
J-1969	False	1,000.0	True	3,655.0	20	20	J-2932
J-1973	False	1,000.0	True	3,294.6	20	36	J-2096
J-1978	True	2,500.0	True	2,883.0	20	36	J-2096
J-1979	True	2,500.0	True	2,773.8	20	24	J-1980
J-1980	True	2,500.0	True	2,767.6	20	25	J-1979
J-1981	False	1,000.0	True	1,613.9	20	20	J-818
J-1989	False	1,000.0	True	3,772.7	20	20	J-3430
J-1992	False	1,000.0	True	1,513.2	20	32	J-1068
J-1993	False	1,000.0	True	1,515.0	20	32	J-1068
J-1996	False	1,000.0	True	3,750.8	20	20	J-3309
J-1997	False	1,000.0	True	3,736.4	20	20	J-3309
J-1998	False	1,000.0	True	1,545.9	20	42	J-1093
J-2000	False	1,000.0	True	1,605.8	20	41	J-1093
J-2002	False	1,000.0	True	1,640.9	20	41	J-2096
J-2003	False	1,000.0	True	1,638.7	20	41	J-2096
J-2005	False	1,000.0	True	3,228.2	20	21	J-73
J-2006	True	2,500.0	True	2,716.1	20	51	J-3072
J-2007	False	1,000.0	True	1,187.8	20	27	J-3226
J-2008	True	2,500.0	True	3,272.0	20	25	J-2932
J-2009	True	2,500.0	True	3,273.5	20	26	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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J-2010	False	1,000.0	True	3,929.0	20	25	J-2932
J-2011	False	1,000.0	True	3,927.8	20	25	J-2932
J-2012	False	1,000.0	True	3,413.1	20	22	J-2766
J-2013	False	1,000.0	True	3,413.1	20	22	J-2766
J-2014	True	2,500.0	True	2,636.7	20	45	J-2096
J-2015	False	1,000.0	True	1,160.7	20	20	H-314
J-2019	False	1,000.0	True	2,600.4	20	20	J-2943
J-2020	False	1,000.0	True	2,601.2	20	20	J-2943
J-2021	False	1,000.0	True	3,189.1	20	23	J-2096
J-2022	False	1,000.0	True	2,948.1	20	21	J-1904
J-2023	False	1,000.0	True	1,710.3	20	40	J-2096
J-2024	False	1,000.0	True	1,711.3	20	40	J-2096
J-2025	False	1,000.0	True	2,534.8	20	20	J-1711
J-2028	True	2,500.0	True	3,107.5	20	49	J-2932
J-2029	True	2,500.0	True	3,107.5	20	46	J-2932
J-2031	False	1,000.0	True	1,164.6	20	21	J-1904
J-2033	False	1,000.0	True	1,005.0	20	20	H-313
J-2036	False	1,000.0	True	1,613.3	20	20	J-654
J-2039	False	1,000.0	True	2,017.5	20	21	H-294
J-2040	False	1,000.0	True	1,921.6	20	46	J-2096
J-2041	False	1,000.0	True	1,919.1	20	47	J-2096
J-2046	False	1,000.0	True	1,709.4	20	33	J-2096
J-2051	False	1,000.0	True	1,188.0	20	28	J-3226
J-2052	False	1,000.0	True	1,201.4	20	21	J-3226
J-2053	False	1,000.0	True	1,202.1	20	21	J-3226
J-2054	False	1,000.0	True	2,304.4	20	28	J-2096
J-2062	False	1,000.0	True	1,562.0	20	40	J-1093
J-2063	False	1,000.0	True	1,631.9	20	20	H-364
J-2066	False	1,000.0	True	1,162.8	20	20	H-312
J-2067	True	2,500.0	True	2,824.4	20	38	J-2096
J-2068	False	1,000.0	True	2,709.8	20	20	J-598
J-2070	False	1,000.0	True	2,649.6	20	21	J-1327
J-2071	False	1,000.0	True	2,713.2	20	21	J-1327
J-2073	False	1,000.0	True	1,547.9	20	31	J-1093
J-2074	False	1,000.0	True	1,548.0	20	31	J-1093
J-2075	False	1,000.0	True	1,108.9	20	23	J-3226
J-2078	False	1,000.0	True	2,339.1	20	43	J-2096
J-2079	False	1,000.0	True	2,339.1	20	44	J-2096
J-2080	True	2,500.0	True	2,828.7	20	50	J-3072
J-2082	False	1,000.0	True	2,630.7	20	20	J-2096
J-2083	False	1,000.0	True	3,139.7	20	20	J-2084
J-2084	False	1,000.0	True	3,101.4	20	20	J-2083
J-2085	False	1,000.0	True	2,011.8	20	47	J-2096
J-2086	False	1,000.0	True	2,014.7	20	47	J-2096
J-2087	True	2,500.0	True	3,223.7	20	42	J-2932
J-2088	False	1,000.0	True	3,278.1	20	50	J-2972
J-2089	False	1,000.0	True	3,273.7	20	24	J-2766
J-2091	False	1,000.0	True	1,367.1	20	20	J-510
J-2095	True	2,500.0	True	3,023.0	20	25	J-570
J-2098	False	1,000.0	True	1,562.3	20	21	J-1386
J-2099	False	1,000.0	True	2,419.9	20	20	J-2100
J-2100	False	1,000.0	True	2,405.1	20	20	J-2099

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2101	True	2,500.0	True	2,735.7	20	40	J-2096
J-2102	True	2,500.0	True	2,735.7	20	42	J-2096
J-2107	False	1,000.0	True	1,665.1	20	41	J-2096
J-2108	False	1,000.0	True	1,665.1	20	34	J-2096
J-SilverCreekPlaza3	True	2,500.0	True	2,501.0	20	40	J-3072
J-2110	True	2,500.0	True	2,906.8	20	48	J-3072
J-2111	True	2,500.0	True	3,273.9	20	41	J-2932
J-2112	True	2,500.0	True	3,271.9	20	41	J-2932
J-2113	False	1,000.0	True	1,172.1	20	22	H-232
J-2114	False	1,000.0	True	2,700.6	20	29	J-2096
J-2115	False	1,000.0	True	1,934.5	20	21	J-2946
J-2117	False	1,000.0	True	3,070.6	20	28	J-2766
J-2120	False	1,000.0	True	1,607.4	20	30	J-1093
J-2123	False	1,000.0	True	1,569.5	20	41	J-1093
J-2125	False	1,000.0	True	3,328.2	20	20	J-2766
J-2126	True	2,500.0	True	2,598.3	20	43	J-2096
J-2127	True	2,500.0	True	2,627.0	20	50	J-2096
J-2128	True	2,500.0	True	2,848.5	20	37	J-2096
J-2131	False	1,000.0	True	2,339.5	20	42	J-2096
J-2135	False	1,000.0	True	2,374.3	20	20	J-1858
J-2136	True	2,500.0	True	2,837.6	20	32	J-3072
J-2137	True	2,500.0	True	2,835.9	20	50	J-3072
J-2139	False	1,000.0	True	3,118.6	20	31	J-2096
J-2140	False	1,000.0	True	3,118.6	20	34	J-2096
J-2141	True	2,500.0	True	3,187.9	20	45	J-654
J-2147	False	1,000.0	True	3,281.6	20	29	J-2096
J-2148	False	1,000.0	True	1,570.9	20	41	J-1093
J-2149	False	1,000.0	True	3,360.8	20	22	J-2766
J-2152	False	1,000.0	True	1,326.1	20	26	J-3094
J-2153	False	1,000.0	True	3,783.1	20	28	J-2766
J-2154	False	1,000.0	True	1,327.6	20	27	J-3094
J-2155	False	1,000.0	True	1,328.1	20	27	J-3094
J-2157	False	1,000.0	True	2,079.0	20	20	H-294
J-2158	False	1,000.0	True	3,044.0	20	20	H-157
J-2159	True	2,500.0	True	2,791.2	20	44	J-2096
J-2160	False	1,000.0	True	1,610.8	20	20	J-1446
J-2161	False	1,000.0	True	1,625.5	20	20	J-1446
J-2162	True	2,500.0	True	3,334.1	20	40	J-2932
J-2163	True	2,500.0	True	3,338.5	20	43	J-2932
J-2164	False	1,000.0	True	1,588.4	20	52	J-1093
J-2165	False	1,000.0	True	1,589.8	20	52	J-1093
J-2166	True	2,500.0	True	3,342.5	20	25	J-2932
J-2167	False	1,000.0	True	1,123.7	20	20	J-890
J-2168	False	1,000.0	True	2,243.0	20	22	J-1273
J-2169	False	1,000.0	True	2,253.4	20	22	J-1273
J-2171	True	2,500.0	True	2,860.7	20	36	J-2096
J-2175	False	1,000.0	True	2,267.7	20	20	J-1798
J-2176	False	1,000.0	True	1,129.6	20	20	J-3496
J-2180	True	2,500.0	True	2,732.4	20	20	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2181	True	2,500.0	True	3,337.5	20	31	J-2932
J-2184	False	1,000.0	True	3,117.8	20	20	J-3309
J-2185	False	1,000.0	True	2,445.3	20	20	J-432
J-2186	True	2,500.0	True	3,217.8	20	31	J-2096
J-2187	True	2,500.0	True	3,217.9	20	37	J-2096
J-2190	False	1,000.0	True	2,936.3	20	40	J-2096
J-2191	True	2,500.0	True	2,934.3	20	45	J-3072
J-2192	True	2,500.0	True	2,934.3	20	48	J-3072
J-2194	False	1,000.0	True	1,575.1	20	26	J-2766
J-2195	False	1,000.0	True	4,102.6	20	20	J-2932
J-2196	False	1,000.0	True	1,879.9	20	29	J-654
J-2197	False	1,000.0	True	1,876.3	20	30	J-654
J-2198	True	2,500.0	True	2,927.4	20	38	J-2096
J-2201	True	2,500.0	True	2,748.8	20	43	J-2096
J-2205	False	1,000.0	True	3,006.7	20	20	H-F8
J-2206	False	1,000.0	True	3,311.9	20	20	H-162
J-2207	False	1,000.0	True	3,349.4	20	36	J-1523
J-2208	False	1,000.0	True	3,449.9	20	37	J-2096
J-2211	False	1,000.0	True	2,195.8	20	20	J-3308
J-2212	False	1,000.0	True	2,273.5	20	20	J-2932
J-2213	False	1,000.0	True	2,994.0	20	20	J-3309
J-2216	False	1,000.0	True	1,544.3	20	42	J-1093
J-2217	False	1,000.0	True	1,544.7	20	42	J-1093
J-2219	True	2,500.0	True	3,183.8	20	45	J-2932
J-2220	True	2,500.0	True	3,181.5	20	45	J-2932
J-2225	True	2,500.0	True	2,855.4	20	24	J-3123
J-2226	True	2,500.0	True	3,364.0	20	33	J-2932
J-2231	False	1,000.0	True	2,975.9	20	40	J-654
J-2233	True	2,500.0	True	2,519.8	20	49	J-3072
J-2234	False	1,000.0	True	2,714.9	20	20	H-118
J-2235	True	2,500.0	True	2,934.1	20	38	J-3072
J-2236	True	2,500.0	True	2,933.7	20	40	J-3072
J-2237	False	1,000.0	True	1,562.6	20	36	J-1093
J-2241	True	2,500.0	True	2,642.9	20	44	J-2096
J-2242	True	2,500.0	True	2,645.8	20	45	J-2096
J-2246	True	2,500.0	True	2,879.4	20	25	J-528
J-2247	True	2,500.0	True	2,891.2	20	25	J-2246
J-2248	False	1,000.0	True	3,960.5	20	24	J-2932
J-2249	False	1,000.0	True	3,958.0	20	28	J-2932
J-2250	False	1,000.0	True	1,569.1	20	48	J-1093
J-2251	True	2,500.0	True	3,293.4	20	30	J-2932
J-2252	False	1,000.0	True	4,218.0	20	56	J-3430
J-2253	False	1,000.0	True	4,218.8	20	57	J-3430
J-2254	True	2,500.0	True	2,764.0	20	48	J-3072
J-2255	True	2,500.0	True	2,764.0	20	50	J-3072
J-2256	False	1,000.0	True	1,776.0	20	20	J-2966
J-2257	False	1,000.0	True	1,780.9	20	20	J-2966
J-2261	False	1,000.0	True	2,412.3	20	20	J-422
J-2262	True	2,500.0	True	2,511.3	20	25	J-2263
J-2263	True	2,500.0	True	2,511.9	20	25	J-2262
J-2264	False	1,000.0	True	3,471.7	20	36	J-2096
J-2265	True	2,500.0	True	2,685.8	20	47	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2266	False	1,000.0	True	1,607.9	20	52	J-1093
J-2269	False	1,000.0	True	3,440.3	20	34	J-654
J-2271	False	1,000.0	True	1,001.1	20	21	J-3210
J-2272	True	2,500.0	True	2,968.4	20	41	J-2096
J-2273	False	1,000.0	True	2,457.5	20	20	H-225
J-2274	False	1,000.0	True	2,762.8	20	21	J-3298
J-2275	False	1,000.0	True	2,256.0	20	20	J-3142
J-2276	False	1,000.0	True	2,642.0	20	20	J-2275
J-2278	False	1,000.0	True	1,681.2	20	20	J-3226
J-2279	False	1,000.0	True	1,722.3	20	20	J-2278
J-2280	True	2,500.0	True	2,639.5	20	25	H-175
J-2281	False	1,000.0	True	2,716.7	20	23	J-2096
J-2282	False	1,000.0	True	2,716.6	20	23	J-2096
J-2283	True	2,500.0	True	2,968.7	20	48	J-2932
J-2284	False	1,000.0	True	3,201.9	20	20	J-2786
J-2287	False	1,000.0	True	1,954.8	20	23	J-3226
J-2288	False	1,000.0	True	1,958.1	20	24	J-2946
J-2289	False	1,000.0	True	3,604.3	20	31	J-2096
J-2290	False	1,000.0	True	3,599.5	20	32	J-2096
J-2291	False	1,000.0	True	1,064.2	20	29	J-3219
J-2292	False	1,000.0	True	1,064.6	20	35	J-3219
J-2293	False	1,000.0	True	3,598.2	20	22	J-2932
J-2294	False	1,000.0	True	3,607.9	20	22	J-2932
J-2295	False	1,000.0	True	3,294.9	20	39	J-2096
J-2296	False	1,000.0	True	3,289.4	20	42	J-2096
J-2298	True	2,500.0	True	2,510.5	20	53	J-3072
J-2299	False	1,000.0	True	2,684.3	20	20	J-1915
J-2300	False	1,000.0	True	3,004.8	20	45	J-2932
J-2301	False	1,000.0	True	2,713.2	20	25	J-2096
J-2302	False	1,000.0	True	2,713.4	20	25	J-2096
J-2303	False	1,000.0	True	3,761.9	20	30	J-2096
J-2304	True	2,500.0	True	3,233.5	20	31	J-2932
J-2305	False	1,000.0	True	1,010.4	20	37	J-3219
J-2307	False	1,000.0	True	2,200.3	20	20	J-758
J-2310	False	1,000.0	True	3,754.4	20	34	J-2096
J-2311	False	1,000.0	True	3,762.8	20	34	J-2096
J-2312	False	1,000.0	True	3,278.1	20	41	J-2972
J-2313	False	1,000.0	True	3,278.1	20	40	J-2972
J-2316	True	2,500.0	True	2,866.8	20	25	J-528
J-2317	False	1,000.0	True	1,211.5	20	22	J-3226
J-2318	False	1,000.0	True	1,212.2	20	22	J-3226
J-2319	False	1,000.0	True	1,833.3	20	27	J-2766
J-2320	True	2,500.0	True	3,346.7	20	21	J-1787
J-2321	False	1,000.0	True	2,378.9	20	20	J-2322
J-2322	False	1,000.0	True	2,398.5	20	20	J-2321
J-2323	False	1,000.0	True	2,977.2	20	44	J-1618
J-2324	False	1,000.0	True	2,983.8	20	43	J-1618
J-2326	True	2,500.0	True	2,538.6	20	52	J-3072
J-2327	False	1,000.0	True	1,197.3	20	27	J-3226
J-2328	True	2,500.0	True	2,703.9	20	42	J-2096
J-2329	False	1,000.0	True	3,520.0	20	20	H-173
J-2330	False	1,000.0	True	2,801.7	20	45	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2331	False	1,000.0	True	1,702.7	20	26	J-2766
J-2332	False	1,000.0	True	1,699.4	20	26	J-2766
J-2333	False	1,000.0	True	3,768.6	20	34	J-2096
J-2334	False	1,000.0	True	3,769.1	20	34	J-2096
J-2340	True	2,500.0	True	3,183.5	20	45	J-654
J-606 Front Street	True	1,750.0	True	1,751.0	20	47	J-2932
J-2344	False	1,000.0	True	1,914.6	20	20	J-2968
J-2345	False	1,000.0	True	2,001.2	20	28	J-2766
J-2346	False	1,000.0	True	4,074.5	20	23	J-3430
J-2347	False	1,000.0	True	1,534.3	20	20	H-365
J-2349	True	2,500.0	True	3,337.5	20	32	J-2932
J-2352	False	1,000.0	True	3,221.9	20	26	J-2096
J-2353	True	2,500.0	True	3,361.1	20	20	J-654
J-2357	False	1,000.0	True	3,299.4	20	36	J-2096
J-2358	True	2,500.0	True	3,163.7	20	44	J-2932
J-2359	True	2,500.0	True	3,176.6	20	46	J-2932
J-2360	True	2,500.0	True	3,343.7	20	42	J-2932
J-2361	True	2,500.0	True	3,231.0	20	42	J-2932
J-2362	True	2,500.0	True	3,229.1	20	42	J-2932
J-2363	True	2,500.0	True	3,178.7	20	33	J-2932
J-2364	True	2,500.0	True	3,191.9	20	36	J-2932
J-2365	False	1,000.0	True	1,938.1	20	25	J-73
J-2373	True	2,500.0	True	2,519.8	20	51	J-3072
J-2375	False	1,000.0	True	4,218.8	20	56	J-3430
J-2376	False	1,000.0	True	3,926.9	20	20	J-2932
J-2377	True	2,500.0	True	2,991.3	20	49	J-2096
J-2378	True	2,500.0	True	2,991.3	20	50	J-2096
J-2379	False	1,000.0	True	2,996.9	20	20	J-2932
J-2380	False	1,000.0	True	3,064.1	20	20	J-2379
J-2383	False	1,000.0	True	2,428.6	20	20	J-3072
J-2384	False	1,000.0	True	2,205.2	20	21	J-1273
J-2385	False	1,000.0	True	1,923.7	20	20	J-3321
J-2386	False	1,000.0	True	2,301.0	20	20	J-3079
J-2387	False	1,000.0	True	2,355.3	20	20	J-2386
J-2389	False	1,000.0	True	1,177.8	20	27	J-3226
J-2393	False	1,000.0	True	1,083.5	20	29	J-3352
J-2394	False	1,000.0	True	1,083.5	20	28	J-3352
J-2397	True	2,500.0	True	2,974.1	20	51	J-2096
J-2398	True	2,500.0	True	2,976.2	20	51	J-2096
J-2400	False	1,000.0	True	2,411.2	20	29	J-2766
J-2401	False	1,000.0	True	1,738.2	20	21	J-3226
J-2402	False	1,000.0	True	1,749.2	20	20	J-3226
J-2403	False	1,000.0	True	3,759.6	20	32	J-2096
J-2404	False	1,000.0	True	3,759.6	20	32	J-2096
J-2405	False	1,000.0	True	3,759.3	20	29	J-2096
J-2406	False	1,000.0	True	2,622.1	20	20	J-388
J-2409	False	1,000.0	True	1,321.3	20	31	J-3094
J-2410	False	1,000.0	True	1,321.5	20	31	J-3094
J-2411	False	1,000.0	True	1,874.2	20	32	J-2932
J-2418	False	1,000.0	True	3,141.5	20	32	J-2096

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J-2419	True	2,500.0	True	3,200.3	20	35	J-2932
J-2420	True	2,500.0	True	3,197.5	20	37	J-2932
J-2426	False	1,000.0	True	3,746.2	20	27	J-2766
J-2427	False	1,000.0	True	3,757.0	20	27	J-2766
J-2428	False	1,000.0	True	1,418.0	20	24	J-2766
J-2429	False	1,000.0	True	1,418.0	20	25	J-2766
J-2430	False	1,000.0	True	3,002.3	20	29	J-2766
J-2431	False	1,000.0	True	2,990.1	20	30	J-2766
J-2432	True	2,500.0	True	3,459.5	20	45	J-2932
J-2434	False	1,000.0	True	1,700.4	20	20	J-2435
J-2435	False	1,000.0	True	1,678.6	20	20	H-197
J-2436	False	1,000.0	True	3,280.9	20	36	J-2096
J-2437	False	1,000.0	True	3,279.7	20	36	J-2096
J-2439	False	1,000.0	True	2,711.4	20	20	J-2440
J-2440	False	1,000.0	True	2,713.3	20	20	J-3000
J-2443	False	1,000.0	True	2,288.2	20	21	J-3154
J-2444	False	1,000.0	True	2,387.0	20	21	J-3154
J-2446	False	1,000.0	True	2,969.7	20	44	J-1618
J-2448	False	1,000.0	True	1,569.4	20	42	J-1093
J-2449	True	2,500.0	True	2,972.4	20	51	J-2096
J-2452	False	1,000.0	True	1,816.8	20	20	J-672
J-2453	False	1,000.0	True	2,298.7	20	26	J-2096
J-2456	False	1,000.0	True	2,426.3	20	20	H-46
J-2459	False	1,000.0	True	2,699.9	20	24	J-2096
J-2460	False	1,000.0	True	2,699.9	20	25	J-2096
J-2464	True	2,500.0	True	2,977.4	20	38	J-2096
J-2465	True	2,500.0	True	2,977.4	20	42	J-2096
J-2466	False	1,000.0	True	1,357.4	20	29	J-2096
J-2467	False	1,000.0	True	1,354.0	20	29	J-2096
J-2469	True	2,500.0	True	3,108.1	20	25	J-554
J-2470	False	1,000.0	True	2,578.6	20	20	J-3292
J-2471	False	1,000.0	True	2,715.4	20	20	J-2470
J-2472	False	1,000.0	True	2,496.5	20	20	J-2883
J-2473	False	1,000.0	True	2,514.2	20	20	H-120
J-2474	False	1,000.0	True	3,281.8	20	42	J-2096
J-2475	False	1,000.0	True	3,281.8	20	43	J-2096
J-2482	False	1,000.0	True	3,278.1	20	38	J-2972
J-2485	False	1,000.0	True	1,734.6	20	20	J-2597
J-2486	True	2,500.0	True	2,907.3	20	52	J-2932
J-2488	False	1,000.0	True	1,977.9	20	20	J-3226
J-2490	False	1,000.0	True	3,127.2	20	33	J-2096
J-2491	False	1,000.0	True	3,138.5	20	33	J-2096
J-2495	False	1,000.0	True	1,714.9	20	20	J-1327
J-2498	False	1,000.0	True	2,331.8	20	35	J-2096
J-2505	False	1,000.0	True	1,848.4	20	26	J-2766
J-2506	False	1,000.0	True	1,850.8	20	27	J-2766
J-2511	True	2,500.0	True	2,920.1	20	42	J-3219
J-2514	True	2,500.0	True	3,268.5	20	39	J-2932
J-2516	False	1,000.0	True	1,504.0	20	37	J-1093
J-2517	False	1,000.0	True	1,503.0	20	37	J-1093
J-2519	False	1,000.0	True	3,191.4	20	44	J-2096
J-2521	False	1,000.0	True	4,352.8	20	69	J-3430

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2525	True	2,500.0	True	2,669.2	20	40	J-2096
J-2526	True	2,500.0	True	2,669.2	20	44	J-2096
J-2529	True	2,500.0	True	2,519.8	20	49	J-3072
J-2530	True	2,500.0	True	2,519.8	20	49	J-3072
J-2532	True	2,500.0	True	2,633.8	20	45	J-2096
J-2533	True	2,500.0	True	2,627.1	20	45	J-2096
J-2535	True	2,500.0	True	2,706.4	20	20	J-2932
J-2536	True	2,500.0	True	3,483.9	20	50	J-2932
J-2539	False	1,000.0	True	1,606.6	20	42	J-1093
J-2541	False	1,000.0	True	1,701.1	20	21	H-299
J-2542	False	1,000.0	True	1,655.7	20	20	H-299
J-2548	False	1,000.0	True	3,210.2	20	23	H-232
J-2551	True	2,500.0	True	2,815.4	20	24	J-2552
J-2552	True	2,500.0	True	2,783.7	20	25	H-175
J-2554	True	2,500.0	True	2,635.8	20	45	J-2096
J-2556	True	2,500.0	True	3,343.4	20	25	J-2932
J-2557	True	2,500.0	True	3,333.6	20	25	J-2691
J-2559	False	1,000.0	True	2,620.2	20	20	J-2560
J-2560	False	1,000.0	True	2,635.2	20	20	J-2559
J-2561	True	2,500.0	True	2,555.4	20	49	J-2096
J-2562	True	2,500.0	True	2,556.8	20	49	J-2096
J-2564	False	1,000.0	True	1,605.9	20	30	J-1093
J-2565	False	1,000.0	True	2,790.1	20	41	J-2096
J-2566	False	1,000.0	True	2,790.1	20	45	J-2096
J-2568	False	1,000.0	True	4,143.7	20	36	J-3430
J-2570	False	1,000.0	True	3,511.6	20	23	J-2766
J-2571	False	1,000.0	True	3,516.2	20	22	J-2766
J-2572	True	2,500.0	True	2,548.4	20	47	J-2096
J-2573	False	1,000.0	True	1,660.2	20	21	J-1728
J-2576	False	1,000.0	True	2,339.9	20	46	J-2096
J-2577	False	1,000.0	True	2,340.0	20	46	J-2096
J-2578	False	1,000.0	True	1,083.5	20	27	J-3352
J-2579	False	1,000.0	True	2,510.6	20	20	H-120
J-2582	False	1,000.0	True	2,974.1	20	48	J-2932
J-2583	False	1,000.0	True	2,897.2	20	48	J-2932
J-2587	True	2,500.0	True	3,333.2	20	43	J-2932
J-2593	False	1,000.0	True	1,602.7	20	52	J-1093
J-2595	False	1,000.0	True	2,569.8	20	20	J-2656
J-2596	False	1,000.0	True	1,807.3	20	20	J-939
J-2597	False	1,000.0	True	1,759.7	20	20	J-2485
J-2599	False	1,000.0	True	1,570.2	20	45	J-1093
J-Bruce pac1	True	3,500.0	True	3,941.2	20	21	J-2884
J-2604	True	2,500.0	True	3,439.4	20	42	J-2932
J-2608	False	1,000.0	True	1,562.6	20	23	J-1093
J-2610	True	2,500.0	True	2,516.2	20	25	J-2263
J-2614	True	2,500.0	True	3,211.7	20	34	J-2096
J-2615	True	2,500.0	True	2,980.1	20	50	J-2096
J-2616	True	2,500.0	True	2,954.5	20	52	J-2096
J-2617	True	2,500.0	True	2,719.5	20	51	J-3072
J-2618	True	2,500.0	True	2,726.7	20	51	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2624	False	1,000.0	True	2,509.0	20	20	J-3108
J-2629	True	2,500.0	True	2,515.5	20	52	J-3072
J-2630	True	2,500.0	True	3,182.9	20	48	J-2932
J-2631	True	2,500.0	True	3,298.1	20	25	J-750
J-2634	False	1,000.0	True	1,958.1	20	24	J-2946
J-2635	False	1,000.0	True	1,879.1	20	30	J-654
J-2636	False	1,000.0	True	1,864.7	20	30	J-654
J-2638	True	2,500.0	True	2,515.2	20	43	J-3072
J-2639	False	1,000.0	True	1,064.6	20	36	J-3219
J-2640	False	1,000.0	True	1,075.8	20	37	J-3219
J-2642	False	1,000.0	True	3,278.1	20	41	J-2972
J-2643	False	1,000.0	True	1,451.3	20	20	J-3347
J-2648	True	2,500.0	True	3,109.9	20	44	J-2096
J-2650	False	1,000.0	True	1,632.5	20	20	J-3226
J-2651	False	1,000.0	True	1,285.5	20	21	J-3094
J-2652	False	1,000.0	True	1,280.0	20	21	J-3094
J-2653	False	1,000.0	True	1,052.5	20	29	J-3352
J-2654	False	1,000.0	True	1,117.4	20	29	J-3352
J-2655	False	1,000.0	True	2,699.2	20	21	J-2096
J-2656	False	1,000.0	True	2,559.2	20	20	J-2025
J-2659	False	1,000.0	True	2,960.8	20	20	J-2096
J-2660	False	1,000.0	True	1,925.9	20	47	J-2096
J-2661	False	1,000.0	True	1,913.0	20	47	J-2096
J-2662	False	1,000.0	True	2,010.8	20	32	J-654
J-2665	False	1,000.0	True	2,274.5	20	48	J-2096
J-2671	True	2,500.0	True	3,296.2	20	35	J-2932
J-2672	True	2,500.0	True	3,299.1	20	39	J-2932
J-2675	False	1,000.0	True	1,839.7	20	20	J-2096
J-2677	False	1,000.0	True	3,826.4	20	27	J-2932
J-2678	False	1,000.0	True	3,831.3	20	28	J-2932
J-2681	True	2,500.0	True	3,151.6	20	25	J-2818
J-2682	False	1,000.0	True	2,704.8	20	25	J-2096
J-2683	False	1,000.0	True	2,704.5	20	25	J-2096
J-2686	True	2,500.0	True	3,159.5	20	45	J-654
J-2687	True	2,500.0	True	3,196.4	20	45	J-654
J-2691	True	2,500.0	True	3,332.8	20	25	J-2557
J-2694	False	1,000.0	True	2,818.0	20	38	J-3072
J-2699	False	1,000.0	True	2,144.1	20	20	J-3072
J-2700	True	2,500.0	True	2,762.9	20	43	J-2096
J-2701	True	2,500.0	True	2,757.1	20	43	J-2096
J-2702	False	1,000.0	True	1,775.8	20	23	J-2946
J-2703	False	1,000.0	True	1,948.9	20	24	J-2946
J-2706	False	1,000.0	True	3,263.3	20	44	J-2096
J-2707	False	1,000.0	True	3,266.5	20	44	J-2096
J-2708	True	2,500.0	True	3,298.5	20	39	J-2932
J-507 N. Water	True	1,750.0	True	1,751.0	20	58	J-2932
J-2712	True	2,500.0	True	2,519.8	20	49	J-3072
J-2713	False	1,000.0	True	1,316.0	20	34	J-3094
J-2714	False	1,000.0	True	1,315.6	20	32	J-3094
J-2716	False	1,000.0	True	2,126.3	20	20	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2717	False	1,000.0	True	1,175.4	20	38	J-3226
J-2718	False	1,000.0	True	1,175.0	20	39	J-3226
J-2720	False	1,000.0	True	3,139.8	20	33	J-2096
J-2721	False	1,000.0	True	3,142.5	20	33	J-2096
J-2722	False	1,000.0	True	1,971.0	20	44	J-2096
J-2723	False	1,000.0	True	1,446.5	20	28	J-1093
J-2724	False	1,000.0	True	1,450.8	20	29	J-1093
J-2725	False	1,000.0	True	1,445.8	20	29	J-1093
J-2727	True	2,500.0	True	2,546.8	20	47	J-3072
J-822 Industry Way	True	1,500.0	True	1,501.0	20	64	J-2096
J-2729	False	1,000.0	True	1,728.6	20	20	J-3102
J-2730	False	1,000.0	True	1,705.5	20	20	J-3226
J-2734	False	1,000.0	True	1,182.3	20	20	J-3226
J-2735	False	1,000.0	True	1,181.1	20	21	J-3226
J-2736	False	1,000.0	True	2,296.4	20	25	J-2096
J-2738	False	1,000.0	True	1,515.0	20	31	J-1068
J-2739	False	1,000.0	True	1,461.8	20	20	J-913
J-2740	False	1,000.0	True	2,699.2	20	23	J-2096
J-2741	False	1,000.0	True	2,699.3	20	23	J-2096
J-2742	False	1,000.0	True	1,378.5	20	21	J-1093
J-2744	False	1,000.0	True	1,188.4	20	36	J-3226
J-2745	False	1,000.0	True	1,469.5	20	30	J-1093
J-2746	False	1,000.0	True	1,463.8	20	29	J-1093
J-2748	False	1,000.0	True	3,196.9	20	20	J-2456
J-2749	False	1,000.0	True	3,422.4	20	20	J-2748
J-2753	False	1,000.0	True	1,553.6	20	21	J-1386
J-2754	True	2,500.0	True	2,519.8	20	45	J-3072
J-2759	False	1,000.0	True	2,568.2	20	35	J-1618
J-2760	False	1,000.0	True	2,533.6	20	34	J-1618
J-2761	False	1,000.0	True	1,916.9	20	20	J-2096
J-2762	False	1,000.0	True	1,920.1	20	20	J-2096
J-2764	True	2,500.0	True	2,788.0	20	45	J-2096
J-2765	True	2,500.0	True	2,785.7	20	46	J-2096
J-2766	False	1,000.0	True	1,071.4	20	20	J-296
J-2769	False	1,000.0	True	1,175.4	20	36	J-3226
J-2770	False	1,000.0	True	3,003.0	20	42	J-1618
J-2773	True	2,500.0	True	2,515.8	20	25	H-186
J-2774	False	1,000.0	True	1,446.5	20	26	J-1093
J-2777	False	1,000.0	True	2,938.5	20	20	J-2932
J-2778	False	1,000.0	True	3,048.5	20	20	J-2932
J-2781	False	1,000.0	True	2,699.5	20	21	J-2096
J-2782	False	1,000.0	True	2,699.5	20	21	J-2096
J-2783	False	1,000.0	True	3,456.3	20	28	J-3072
J-2784	False	1,000.0	True	3,456.3	20	41	J-3072
J-2785	False	1,000.0	True	1,957.7	20	24	J-2946
J-2786	False	1,000.0	True	3,179.0	20	20	J-1053
J-2788	False	1,000.0	True	3,401.9	20	20	J-2932
J-2790	False	1,000.0	True	1,715.3	20	41	J-2096
J-2793	True	2,500.0	True	2,724.0	20	51	J-3072

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-2795	False	1,000.0	True	1,194.2	20	132	H-385
J-2796	False	1,000.0	True	1,202.1	20	132	H-385
J-2802	False	1,000.0	True	1,817.3	20	20	J-2096
J-2803	False	1,000.0	True	3,690.8	20	20	J-2932
J-2804	False	1,000.0	True	3,823.9	20	28	J-2932
J-2805	False	1,000.0	True	1,561.4	20	21	J-1386
J-2809	False	1,000.0	True	1,561.8	20	36	J-1093
J-2810	False	1,000.0	True	1,562.4	20	36	J-1093
J-2812	False	1,000.0	True	1,744.7	20	20	J-3226
J-2818	True	2,500.0	True	2,921.8	20	20	J-2096
J-2825	True	2,500.0	True	3,196.2	20	34	J-2932
J-2826	True	2,500.0	True	3,198.4	20	36	J-2932
J-2828	False	1,000.0	True	1,689.9	20	22	J-375
J-2829	False	1,000.0	True	1,675.9	20	21	J-375
J-2834	False	1,000.0	True	4,111.7	20	23	J-2932
J-2845	False	1,000.0	True	3,706.8	20	26	J-2766
J-2854	False	1,000.0	True	1,030.2	20	20	J-1446
J-2857	False	1,000.0	True	2,704.0	20	25	J-2096
J-2858	False	1,000.0	True	1,563.8	20	20	J-3226
J-2859	False	1,000.0	True	1,090.0	20	37	J-3219
J-2860	False	1,000.0	True	1,059.7	20	34	J-3219
J-2861	False	1,000.0	True	2,386.7	20	25	J-1618
J-2862	False	1,000.0	True	2,412.6	20	26	J-1618
J-2863	False	1,000.0	True	2,333.4	20	24	H-232
J-2865	False	1,000.0	True	2,173.8	20	49	J-2096
J-2866	False	1,000.0	True	1,114.7	20	20	J-1701
J-2867	False	1,000.0	True	1,134.6	20	21	J-2766
J-2871	False	1,000.0	True	3,604.2	20	25	J-2096
J-2872	False	1,000.0	True	2,605.5	20	20	J-2096
J-2874	False	1,000.0	True	3,452.0	20	40	J-654
J-2879	False	1,000.0	True	3,035.0	20	40	J-1618
J-2880	True	2,500.0	True	3,312.3	20	40	J-2932
J-2884	True	2,500.0	True	3,212.0	20	27	J-2096
J-2885	False	1,000.0	True	2,476.0	20	30	J-1618
J-2888	True	2,500.0	True	3,429.5	20	40	J-2932
J-2890	True	2,500.0	True	3,469.1	20	47	J-2932
J-2891	True	2,500.0	True	3,470.4	20	48	J-2932
J-2892	False	1,000.0	True	1,539.6	20	20	J-2096
J-2896	True	2,500.0	True	2,516.0	20	40	J-3072
J-2897	True	2,500.0	True	2,515.7	20	52	J-3072
J-2899	False	1,000.0	True	1,575.5	20	20	J-3226
J-2901	False	1,000.0	True	1,354.8	20	34	J-1068
J-2902	False	1,000.0	True	1,345.6	20	33	J-1068
J-2906	True	2,500.0	True	2,519.8	20	47	J-3072
J-2910	False	1,000.0	True	4,192.6	20	54	J-3430
J-2911	False	1,000.0	True	4,195.4	20	54	J-3430
J-2912	True	2,500.0	True	2,510.8	20	25	J-2263
J-2915	True	2,500.0	True	2,519.8	20	41	J-3072
J-321 Eska	True	2,250.0	True	2,251.0	20	54	J-2096
J-2919	False	1,000.0	True	3,027.7	20	44	J-2932
J-2920	False	1,000.0	True	2,933.7	20	48	J-2932

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J-2921	False	1,000.0	True	1,533.0	20	20	J-1684
J-2922	False	1,000.0	True	4,287.1	20	54	J-3430
J-2923	False	1,000.0	True	4,296.3	20	55	J-3430
J-2924	False	1,000.0	True	2,879.8	20	43	J-1618
J-2925	False	1,000.0	True	2,879.8	20	45	J-1618
J-2926	False	1,000.0	True	2,918.3	20	44	J-1618
J-2927	False	1,000.0	True	2,878.4	20	43	J-1618
J-2928	False	1,000.0	True	2,661.4	20	20	J-2096
J-2929	False	1,000.0	True	2,664.4	20	20	J-2096
J-2932	False	1,000.0	True	1,205.5	20	20	J-3346
J-2933	False	1,000.0	True	1,656.8	20	22	J-2932
J-2935	False	1,000.0	True	3,476.6	20	22	J-2766
J-2936	True	2,500.0	True	3,234.6	20	30	J-2932
J-2937	True	2,500.0	True	3,226.6	20	29	J-2932
J-2939	False	1,000.0	True	1,605.8	20	35	J-1093
J-2941	False	1,000.0	True	1,568.0	20	41	J-1093
J-2942	False	1,000.0	True	2,600.8	20	20	J-2943
J-2943	False	1,000.0	True	1,287.7	20	20	J-2096
J-2944	False	1,000.0	True	1,430.5	20	29	J-1093
J-2945	False	1,000.0	True	1,415.8	20	28	J-1093
J-2948	False	1,000.0	True	1,549.2	20	21	J-1684
J-2952	False	1,000.0	True	2,297.1	20	25	J-2096
J-2953	False	1,000.0	True	1,099.2	20	135	H-385
J-2954	False	1,000.0	True	1,087.2	20	139	H-385
J-2955	False	1,000.0	True	2,643.4	20	20	J-1795
J-2958	False	1,000.0	True	2,819.9	20	20	H-43
J-2959	False	1,000.0	True	2,614.3	20	20	J-3430
J-2960	True	2,500.0	True	2,991.4	20	43	J-2096
J-2962	True	2,500.0	True	2,515.9	20	20	J-3072
J-2963	False	1,000.0	True	1,332.2	20	33	J-1068
J-2964	False	1,000.0	True	3,278.1	20	47	J-2972
J-2965	False	1,000.0	True	1,761.6	20	20	J-2966
J-2966	False	1,000.0	True	1,605.8	20	20	J-2965
J-2967	False	1,000.0	True	1,662.9	20	41	J-2096
J-2968	False	1,000.0	True	1,094.1	20	20	J-2766
J-2971	False	1,000.0	True	3,278.1	20	23	J-2972
J-2972	False	1,000.0	True	3,277.9	20	20	J-2971
J-2974	False	1,000.0	True	4,117.1	20	25	J-3430
J-2977	False	1,000.0	True	1,137.3	20	22	J-1068
J-2978	False	1,000.0	True	1,563.5	20	39	J-1093
J-2981	True	2,500.0	True	2,671.4	20	44	J-2096
J-2982	True	2,500.0	True	2,713.2	20	42	J-2096
J-2983	False	1,000.0	True	2,487.3	20	24	H-232
J-2988	False	1,000.0	True	2,340.3	20	46	J-2096
J-2992	False	1,000.0	True	2,700.0	20	25	J-2096
J-2993	False	1,000.0	True	2,700.9	20	24	J-2096
J-2994	False	1,000.0	True	1,564.8	20	39	J-1093
J-2995	False	1,000.0	True	1,563.8	20	37	J-1093
J-2999	False	1,000.0	True	2,702.9	20	24	J-2096
J-3000	False	1,000.0	True	2,707.5	20	20	J-2610
J-3001	False	1,000.0	True	2,141.0	20	21	J-2812
J-3002	False	1,000.0	True	2,235.1	20	23	J-2812

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-210 Jefferson	True	1,750.0	True	1,751.0	20	61	J-2096
J-3007	True	2,500.0	True	2,763.7	20	46	J-2096
J-3008	False	1,000.0	True	3,296.5	20	42	J-2096
J-3009	False	1,000.0	True	3,268.2	20	44	J-2096
J-3011	False	1,000.0	True	1,744.4	20	20	J-2096
J-3014	False	1,000.0	True	1,306.2	20	25	J-3094
J-3017	False	1,000.0	True	2,318.6	20	24	J-2096
J-3020	False	1,000.0	True	2,833.6	20	20	J-1504
J-3021	True	2,500.0	True	2,902.8	20	24	J-2247
J-3022	False	1,000.0	True	1,607.5	20	51	J-1093
J-3023	False	1,000.0	True	4,128.8	20	26	J-3430
J-3024	False	1,000.0	True	4,129.7	20	30	J-3430
J-3025	False	1,000.0	True	4,120.3	20	28	J-3430
J-3026	False	1,000.0	True	1,373.3	20	35	J-1068
J-3027	False	1,000.0	True	2,879.8	20	38	J-1618
J-3028	False	1,000.0	True	2,879.8	20	41	J-1618
J-3030	False	1,000.0	True	2,700.7	20	29	J-2096
J-3031	False	1,000.0	True	2,699.4	20	29	J-2096
J-3032	False	1,000.0	True	1,731.6	20	20	J-2932
J-3033	False	1,000.0	True	4,116.9	20	25	J-3430
J-3034	False	1,000.0	True	1,562.5	20	37	J-1093
J-3040	False	1,000.0	True	3,762.0	20	33	J-2096
J-3041	False	1,000.0	True	1,562.5	20	28	J-1093
J-3042	False	1,000.0	True	1,562.6	20	27	J-1093
J-3043	True	2,500.0	True	2,566.2	20	48	J-2096
J-3044	False	1,000.0	True	3,278.1	20	43	J-2972
J-3045	False	1,000.0	True	1,931.8	20	25	J-73
J-3046	False	1,000.0	True	3,746.1	20	38	J-2096
J-3048	False	1,000.0	True	1,752.7	20	22	J-3049
J-3049	False	1,000.0	True	1,432.9	20	20	J-2096
J-3050	False	1,000.0	True	2,008.6	20	47	J-2096
J-3052	False	1,000.0	True	4,298.0	20	38	J-3430
J-3053	False	1,000.0	True	4,114.0	20	29	J-3067
J-3054	False	1,000.0	True	2,413.4	20	20	J-3444
J-3058	False	1,000.0	True	1,014.9	20	20	J-2096
J-3062	False	1,000.0	True	4,313.8	20	63	J-3430
J-3063	False	1,000.0	True	2,698.2	20	26	J-2096
J-3066	False	1,000.0	True	4,334.7	20	72	J-3430
J-3067	False	1,000.0	True	1,231.2	20	20	J-3430
J-3068	False	1,000.0	True	3,455.8	20	22	J-3067
J-3069	False	1,000.0	True	4,124.8	20	33	J-3430
J-3070	False	1,000.0	True	4,124.9	20	26	J-3430
J-3074	False	1,000.0	True	1,313.3	20	26	J-3256
J-3075	False	1,000.0	True	1,184.9	20	21	J-1904
J-3076	False	1,000.0	True	1,574.3	20	25	J-2096
J-3077	False	1,000.0	True	1,370.1	20	28	J-2096
J-3078	False	1,000.0	True	1,128.9	20	21	J-2852
J-3081	False	1,000.0	True	1,543.2	20	34	J-1093
J-3083	False	1,000.0	True	1,562.6	20	37	J-1093
J-3086	True	2,500.0	True	2,624.2	20	50	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3087	True	2,500.0	True	2,673.2	20	48	J-2096
J-3090	False	1,000.0	True	1,331.7	20	28	J-3094
J-3092	False	1,000.0	True	2,235.1	20	23	J-2812
J-3094	False	1,000.0	True	1,161.7	20	20	J-3256
J-3097	False	1,000.0	True	3,281.6	20	28	J-2096
J-3098	False	1,000.0	True	1,526.7	20	20	J-1093
J-636 McClaine	True	1,750.0	True	1,751.0	20	45	J-2096
J-3100	True	2,500.0	True	3,319.9	20	20	J-2932
J-3101	False	1,000.0	True	1,794.1	20	46	J-2096
J-3102	False	1,000.0	True	1,260.0	20	20	J-3226
J-3103	True	2,500.0	True	3,265.3	20	41	J-2932
J-3104	False	1,000.0	True	4,131.0	20	39	J-3430
J-3106	False	1,000.0	True	2,872.6	20	30	J-73
J-3108	False	1,000.0	True	1,623.2	20	20	J-1907
J-3109	False	1,000.0	True	1,430.1	20	20	J-1907
J-3115	True	2,500.0	True	2,972.6	20	47	J-2932
J-3117	False	1,000.0	True	3,886.6	20	40	J-654
J-3118	False	1,000.0	True	3,149.7	20	20	J-2766
J-3119	False	1,000.0	True	4,134.2	20	45	J-3430
J-3120	False	1,000.0	True	4,130.7	20	34	J-3430
J-3121	False	1,000.0	True	2,280.6	20	20	H-123
J-3122	True	2,500.0	True	2,526.4	20	42	J-2096
J-3125	False	1,000.0	True	4,233.2	20	63	J-3430
J-3126	True	2,500.0	True	2,519.6	20	28	J-3072
J-3129	False	1,000.0	True	1,321.6	20	30	J-3094
J-3132	False	1,000.0	True	1,193.4	20	27	J-1068
J-3134	True	2,500.0	True	3,158.8	20	20	J-2932
J-3135	True	2,500.0	True	3,320.6	20	37	J-2932
J-3136	False	1,000.0	True	4,500.0	20	76	J-3467
J-3138	False	1,000.0	True	1,489.6	20	33	J-1093
J-3143	True	2,500.0	True	3,199.2	20	21	J-410NorthWater
J-3145	True	2,500.0	True	3,254.8	20	36	J-2932
J-3146	True	2,500.0	True	2,516.0	20	38	J-3072
J-3149	False	1,000.0	True	1,568.9	20	49	J-1093
J-3150	True	2,500.0	True	3,259.6	20	41	J-2932
J-3151	False	1,000.0	True	2,395.6	20	20	J-2096
J-3154	False	1,000.0	True	1,508.9	20	20	J-2096
J-3155	False	1,000.0	True	2,101.8	20	20	J-2096
J-3156	False	1,000.0	True	1,801.5	20	23	J-3049
J-3157	True	2,500.0	True	3,230.3	20	33	J-2932
J-3158	False	1,000.0	True	1,507.0	20	20	J-3049
J-3159	False	1,000.0	True	1,107.6	20	20	J-1679
J-3160	False	1,000.0	True	1,133.2	20	20	J-1913
J-3162	True	2,500.0	True	3,465.7	20	48	J-2932
J-3163	True	2,500.0	True	2,847.6	20	37	J-2096
J-3165	False	1,000.0	True	3,030.0	20	20	H-157
J-3167	False	1,000.0	True	1,955.7	20	20	J-1660
J-3173	False	1,000.0	True	1,007.4	20	20	J-299

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3176	False	1,000.0	True	1,144.9	20	133	H-385
J-3177	False	1,000.0	True	3,278.1	20	43	J-2972
J-3179	False	1,000.0	True	1,572.3	20	44	J-1093
J-3180	False	1,000.0	True	1,568.7	20	36	J-1093
J-3183	False	1,000.0	True	1,988.3	20	20	J-1051
J-3184	False	1,000.0	True	1,519.6	20	32	J-1068
J-3185	False	1,000.0	True	4,103.9	20	26	J-3430
J-3186	False	1,000.0	True	2,696.9	20	31	J-2096
J-3190	False	1,000.0	True	3,065.9	20	26	J-654
J-3191	False	1,000.0	True	3,030.3	20	39	J-654
J-3192	False	1,000.0	True	4,120.5	20	34	J-3430
J-3194	False	1,000.0	True	1,187.9	20	20	J-3611
J-3195	False	1,000.0	True	1,429.9	20	20	J-3194
J-3196	False	1,000.0	True	4,180.4	20	55	J-3430
J-3197	False	1,000.0	True	4,182.5	20	53	J-3430
J-3204	False	1,000.0	True	2,699.2	20	21	J-2096
J-3205	False	1,000.0	True	1,704.8	20	21	J-3226
J-3206	True	2,500.0	True	2,975.1	20	42	J-2096
J-3207	True	2,500.0	True	3,022.5	20	49	J-2096
J-3209	True	2,500.0	True	2,672.4	20	43	J-2096
J-3212	False	1,000.0	True	1,177.8	20	27	J-3226
J-3220	False	1,000.0	True	3,326.0	20	20	J-2766
J-3222	False	1,000.0	True	3,283.5	20	42	J-2096
J-3223	True	2,500.0	True	2,972.6	20	48	J-2932
J-3230	False	1,000.0	True	3,364.3	20	22	J-2766
J-3232	False	1,000.0	True	2,102.4	20	20	J-1660
J-3233	False	1,000.0	True	1,005.8	20	36	J-3219
J-3234	False	1,000.0	True	3,288.1	20	42	J-2096
J-3236	False	1,000.0	True	1,568.3	20	41	J-1093
J-3237	False	1,000.0	True	1,556.6	20	42	J-1093
J-3238	False	1,000.0	True	4,117.5	20	36	J-3430
J-3241	False	1,000.0	True	1,711.1	20	41	J-2096
J-3242	False	1,000.0	True	1,906.8	20	20	J-2096
J-3243	True	2,500.0	True	3,482.8	20	49	J-2932
J-3244	True	2,500.0	True	3,535.8	20	51	J-2932
J-3251	False	1,000.0	True	3,768.8	20	34	J-2096
J-3254	False	1,000.0	True	1,132.2	20	21	J-2766
J-3255	False	1,000.0	True	1,264.7	20	131	H-385
J-3256	False	1,000.0	True	1,022.1	20	20	J-3094
J-3258	False	1,000.0	True	2,271.4	20	33	J-73
J-3259	False	1,000.0	True	1,326.8	20	27	J-3094
J-3260	False	1,000.0	True	1,779.7	20	37	J-2096
J-3261	False	1,000.0	True	2,407.9	20	20	J-3154
J-3262	False	1,000.0	True	3,096.0	20	20	J-2096
J-3263	False	1,000.0	True	3,262.3	20	31	J-2096
J-3265	False	1,000.0	True	1,310.9	20	24	J-64
J-3267	False	1,000.0	True	1,111.6	20	20	J-3496
J-3269	False	1,000.0	True	1,445.6	20	20	J-2096
J-3270	False	1,000.0	True	3,925.6	20	20	J-3430
J-3271	False	1,000.0	True	1,166.2	20	20	H-312
J-3272	False	1,000.0	True	1,344.5	20	130	H-385
J-3274	True	2,500.0	True	2,761.1	20	20	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

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Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3275	False	1,000.0	True	1,449.4	20	35	J-2096
J-3281	False	1,000.0	True	4,500.0	20	25	J-3467
J-3282	False	1,000.0	True	3,516.2	20	23	J-2766
J-3283	False	1,000.0	True	1,570.3	20	44	J-1093
J-3285	False	1,000.0	True	1,530.1	20	40	J-1093
J-3286	True	2,500.0	True	2,519.8	20	51	J-3072
J-3287	False	1,000.0	True	2,743.5	20	20	J-1327
J-3288	False	1,000.0	True	1,605.3	20	29	J-1093
J-3291	False	1,000.0	True	2,815.8	20	39	J-3072
J-3292	False	1,000.0	True	1,321.0	20	20	J-2096
J-3296	False	1,000.0	True	1,554.2	20	34	J-1093
J-3299	False	1,000.0	True	4,143.9	20	44	J-3430
J-3301	False	1,000.0	True	3,179.2	20	20	J-1053
J-3302	True	2,500.0	True	3,215.1	20	37	J-2096
J-3304	False	1,000.0	True	1,840.7	20	20	J-3325
J-3306	False	1,000.0	True	1,573.1	20	20	J-2096
J-3308	False	1,000.0	True	2,190.3	20	20	J-2211
J-3309	False	1,000.0	True	2,825.0	20	20	J-2213
J-3315	False	1,000.0	True	1,502.0	20	20	J-76
J-3316	True	2,500.0	True	2,542.7	20	52	J-3072
J-3317	True	2,500.0	True	3,035.9	20	49	J-2096
J-3321	False	1,000.0	True	1,899.7	20	20	J-2385
J-3323	False	1,000.0	True	2,326.1	20	33	J-2096
J-3325	False	1,000.0	True	1,843.2	20	20	J-3304
J-3326	False	1,000.0	True	1,014.4	20	20	J-1756
J-3327	False	1,000.0	True	1,190.6	20	23	J-3226
J-3331	False	1,000.0	True	4,158.9	20	62	J-3430
J-3334	False	1,000.0	True	1,640.7	20	41	J-2096
J-3335	False	1,000.0	True	1,931.4	20	23	J-2946
J-3337	False	1,000.0	True	2,726.9	20	120	H-385
J-3338	False	1,000.0	True	2,332.2	20	35	J-2096
J-3339	False	1,000.0	True	2,980.2	20	20	J-2096
J-3346	False	1,000.0	True	1,625.0	20	24	J-2932
J-3347	False	1,000.0	True	1,451.5	20	20	J-2643
J-3348	False	1,000.0	True	1,545.0	20	127	H-385
J-3349	False	1,000.0	True	4,500.0	20	26	J-3430
J-3351	True	2,500.0	True	2,873.0	20	36	J-2096
J-3353	False	1,000.0	True	3,343.0	20	23	J-2096
J-3355	False	1,000.0	True	1,867.9	20	27	J-2766
J-3356	False	1,000.0	True	1,998.0	20	24	J-2946
J-3357	False	1,000.0	True	1,314.1	20	24	J-2766
J-3359	False	1,000.0	True	1,996.5	20	20	J-1516
J-3362	False	1,000.0	True	1,630.1	20	20	J-1446
H-3	False	1,000.0	True	4,340.0	20	67	J-3430
J-3398	False	1,000.0	True	4,298.0	20	55	J-3430
J-3399	False	1,000.0	True	3,520.2	20	23	J-3067
H-4	False	1,000.0	True	3,438.1	20	20	J-3067
J-3400	False	1,000.0	True	4,340.0	20	71	J-3430
J-3401	False	1,000.0	True	4,295.0	20	55	J-3430
H-5	False	1,000.0	True	4,295.0	20	45	J-3430
J-3402	False	1,000.0	True	4,246.6	20	62	J-3430
J-3403	False	1,000.0	True	4,232.1	20	63	J-3430

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Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-6	False	1,000.0	True	4,209.5	20	50	J-3430
H-7	False	1,000.0	True	4,179.2	20	48	J-3430
J-3404	False	1,000.0	True	4,143.7	20	44	J-3430
J-3405	False	1,000.0	True	4,142.7	20	46	J-3430
J-3406	False	1,000.0	True	4,139.2	20	49	J-3430
J-3407	False	1,000.0	True	2,840.3	20	20	H-43
J-3408	False	1,000.0	True	4,134.0	20	45	J-3430
J-3409	False	1,000.0	True	4,131.0	20	39	J-3430
J-3410	False	1,000.0	True	4,131.0	20	31	J-3430
J-3411	False	1,000.0	True	4,129.4	20	29	J-3430
J-3412	False	1,000.0	True	4,127.4	20	24	J-3430
J-3413	False	1,000.0	True	4,125.8	20	35	J-3430
J-3414	False	1,000.0	True	4,123.5	20	30	J-3430
J-3415	False	1,000.0	True	4,124.7	20	23	J-3430
J-3416	False	1,000.0	True	4,124.7	20	33	J-3430
J-3417	False	1,000.0	True	4,133.0	20	42	J-3430
J-3418	False	1,000.0	True	4,124.0	20	32	J-3430
J-3419	False	1,000.0	True	4,120.4	20	35	J-3430
J-3420	False	1,000.0	True	4,120.0	20	32	J-3430
H-8	False	1,000.0	True	4,120.0	20	26	J-3430
H-9	False	1,000.0	True	3,938.1	20	20	J-3430
J-3421	False	1,000.0	True	4,117.9	20	23	J-3430
J-3422	False	1,000.0	True	4,123.0	20	33	J-3430
J-3423	False	1,000.0	True	4,117.1	20	26	J-3430
J-3426	False	1,000.0	True	3,468.8	20	20	J-1409
J-3427	False	1,000.0	True	4,089.8	20	26	J-3430
J-3428	False	1,000.0	True	4,093.7	20	25	J-3430
J-3429	False	1,000.0	True	4,073.7	20	23	J-3430
J-3430	False	1,000.0	True	4,043.0	20	20	J-1665
J-3431	False	1,000.0	True	4,500.0	20	26	J-3430
J-3434	False	1,000.0	True	4,101.7	20	26	J-3430
J-3435	False	1,000.0	True	4,109.0	20	35	J-3430
J-3436	False	1,000.0	True	4,117.9	20	36	J-3430
J-3437	False	1,000.0	True	4,139.7	20	55	J-3430
H-10	False	1,000.0	True	4,139.7	20	53	J-3430
J-3438	False	1,000.0	True	4,121.1	20	36	J-3430
J-3439	False	1,000.0	True	4,119.3	20	35	J-3430
J-3440	False	1,000.0	True	4,106.2	20	26	J-3430
J-3441	False	1,000.0	True	4,178.7	20	57	J-3430
J-3442	False	1,000.0	True	4,180.3	20	56	J-3430
J-3443	False	1,000.0	True	2,261.4	20	20	J-1798
J-3444	False	1,000.0	True	2,404.5	20	20	J-1439
J-3445	False	1,000.0	True	3,412.7	20	30	J-3054
J-3446	False	1,000.0	True	3,994.7	20	20	J-3270
J-3447	False	1,000.0	True	3,852.5	20	20	H-17
J-3448	False	1,000.0	True	2,605.0	20	38	J-73
J-3449	False	1,000.0	True	2,370.8	20	35	J-73
J-3450	False	1,000.0	True	2,090.7	20	26	J-73
J-3452	False	1,000.0	True	1,931.8	20	25	J-73
J-3453	False	1,000.0	True	1,856.7	20	31	J-375
J-3454	False	1,000.0	True	1,763.9	20	26	J-375
J-3455	False	1,000.0	True	1,745.6	20	22	J-3668

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3456	False	1,000.0	True	1,693.4	20	22	J-375
H-11	False	1,000.0	True	1,597.6	20	20	J-375
J-3457	False	1,000.0	True	1,598.7	20	20	J-375
J-3458	False	1,000.0	True	1,597.8	20	20	J-375
J-3460	False	1,000.0	True	3,278.1	20	50	J-2972
J-3461	False	1,000.0	True	3,278.1	20	47	J-2972
J-3462	False	1,000.0	True	3,278.1	20	40	J-2972
J-3463	False	1,000.0	True	3,221.7	20	24	J-1618
J-3464	False	1,000.0	True	2,879.8	20	43	J-1618
J-3465	False	1,000.0	True	2,456.8	20	29	J-1618
J-3466	False	1,000.0	True	2,412.6	20	26	J-1618
J-3467	False	1,000.0	True	4,500.0	20	24	H-14
J-3468	False	1,000.0	True	1,163.7	20	133	H-385
J-3470	False	1,000.0	True	1,023.0	20	76	H-385
J-3471	False	1,000.0	True	1,874.4	20	20	J-73
J-3472	False	1,000.0	True	4,220.0	20	57	J-3430
J-3473	False	1,000.0	True	4,153.3	20	39	J-3430
J-3474	False	1,000.0	True	4,165.7	20	60	J-3430
H-13	False	1,000.0	True	4,500.0	20	23	J-3430
H-14	False	1,000.0	True	4,500.0	20	20	J-3467
H-15	False	1,000.0	True	4,246.6	20	54	J-3430
H-16	False	1,000.0	True	4,220.0	20	44	J-3430
H-17	False	1,000.0	True	3,726.1	20	20	J-3430
H-18	False	1,000.0	True	3,193.4	20	20	J-21
H-19	False	1,000.0	True	2,605.3	20	35	J-73
H-20	False	1,000.0	True	2,371.3	20	32	J-73
H-10B	False	1,000.0	True	2,090.7	20	24	J-73
H-22	False	1,000.0	True	1,857.2	20	29	J-375
H-23	False	1,000.0	True	1,688.6	20	20	J-375
H-24	False	1,000.0	True	1,763.9	20	25	J-375
H-27	False	1,000.0	True	1,855.6	20	20	J-73
H-28	False	1,000.0	True	2,302.1	20	20	J-1439
H-29	False	1,000.0	True	3,412.8	20	23	J-3054
H-30	False	1,000.0	True	4,165.7	20	57	J-3430
H-31	False	1,000.0	True	4,109.0	20	25	J-3430
H-32	False	1,000.0	True	4,119.3	20	25	J-3430
H-33	False	1,000.0	True	4,101.8	20	23	J-3430
H-34	False	1,000.0	True	4,021.4	20	20	J-3430
H-35	False	1,000.0	True	4,093.8	20	22	J-3430
H-36	False	1,000.0	True	3,548.2	20	20	J-3430
H-37	False	1,000.0	True	3,668.3	20	20	J-980
H-38	False	1,000.0	True	4,123.6	20	22	J-3430
H-39	False	1,000.0	True	4,125.8	20	31	J-3430
H-41	False	1,000.0	True	4,129.5	20	25	J-3430
H-42	False	1,000.0	True	4,131.1	20	26	J-3430
H-43	False	1,000.0	True	2,807.1	20	20	J-430
H-44	False	1,000.0	True	4,133.1	20	28	J-3430
H-45	False	1,000.0	True	4,142.7	20	42	J-3430
H-46	False	1,000.0	True	2,389.2	20	20	J-2456
H-47	False	1,000.0	True	2,456.8	20	28	J-1618
H-50	False	1,000.0	True	3,278.1	20	36	J-2972
J-3475	True	2,500.0	True	3,546.4	20	51	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J-3476	True	2,500.0	True	3,529.6	20	51	J-2932
H-3C	True	2,500.0	True	3,529.6	20	40	J-2932
J-3477	True	2,500.0	True	3,485.9	20	49	J-2932
H-52	True	2,500.0	True	3,486.0	20	42	J-2932
J-3478	True	2,500.0	True	3,483.5	20	49	J-2932
J-3479	True	2,500.0	True	3,467.7	20	48	J-2932
H-53	True	2,500.0	True	3,467.7	20	39	J-2932
J-3481	True	2,500.0	True	3,465.7	20	48	J-2932
J-3482	True	2,500.0	True	3,472.7	20	49	J-2932
J-3484	True	2,500.0	True	3,469.8	20	48	J-2932
J-3485	True	2,500.0	True	3,392.0	20	45	J-654
J-3486	True	2,500.0	True	3,368.5	20	45	J-654
J-3487	True	2,500.0	True	3,181.1	20	45	J-654
J-3488	False	1,000.0	True	3,427.9	20	40	J-654
J-3489	False	1,000.0	True	3,021.6	20	40	J-654
J-3490	False	1,000.0	True	3,027.7	20	39	J-654
J-3491	False	1,000.0	True	1,175.0	20	39	J-3226
J-3492	False	1,000.0	True	1,175.1	20	39	J-3226
J-3493	False	1,000.0	True	1,175.7	20	37	J-3226
J-3494	False	1,000.0	True	1,177.9	20	27	J-3226
J-3495	False	1,000.0	True	1,133.3	20	20	J-560
J-3496	False	1,000.0	True	1,131.1	20	20	J-3267
J-3502	False	1,000.0	True	1,175.0	20	29	J-3226
J-3506	False	1,000.0	True	1,705.8	20	20	J-2096
H-58	False	1,000.0	True	2,699.5	20	27	J-2096
H-59	False	1,000.0	True	2,639.8	20	20	J-2096
H-60	False	1,000.0	True	2,702.1	20	20	J-2096
H-61	False	1,000.0	True	2,699.3	20	21	J-2096
H-62	False	1,000.0	True	2,625.8	20	20	J-558
H-63	False	1,000.0	True	2,698.4	20	22	J-2096
H-64	False	1,000.0	True	2,559.0	20	20	J-1084
H-65	False	1,000.0	True	2,604.6	20	20	J-2096
H-72	False	1,000.0	True	1,971.2	20	40	J-2096
H-73	False	1,000.0	True	1,745.4	20	40	J-2096
H-74	False	1,000.0	True	1,776.8	20	43	J-2096
H-75	False	1,000.0	True	1,923.4	20	45	J-2096
H-76	False	1,000.0	True	2,009.8	20	45	J-2096
H-77	False	1,000.0	True	1,703.4	20	39	J-2096
H-78	False	1,000.0	True	1,647.3	20	40	J-2096
H-79	False	1,000.0	True	1,742.6	20	41	J-2096
H-80	False	1,000.0	True	2,337.6	20	37	J-2096
H-81	False	1,000.0	True	2,338.7	20	32	J-2096
H-9C	False	1,000.0	True	2,339.3	20	40	J-2096
H-83	False	1,000.0	True	2,330.5	20	33	J-2096
H-84	False	1,000.0	True	2,331.3	20	31	J-2096
H-85	False	1,000.0	True	2,322.2	20	29	J-2096
H-86	False	1,000.0	True	2,297.5	20	22	J-2096
H-87	False	1,000.0	True	2,304.3	20	25	J-2096
H-88	False	1,000.0	True	2,298.5	20	22	J-2096
H-89	False	1,000.0	True	2,318.5	20	23	J-2096
H-90	False	1,000.0	True	2,135.1	20	22	J-2096
H-91	False	1,000.0	True	1,496.4	20	25	J-2096

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-92	False	1,000.0	True	1,437.7	20	33	J-2096
H-93	False	1,000.0	True	1,709.4	20	32	J-2096
H-99	False	1,000.0	True	2,705.0	20	24	J-2096
H-100	False	1,000.0	True	2,713.0	20	22	J-2096
H-101	False	1,000.0	True	1,852.4	20	20	J-920
H-102	False	1,000.0	True	1,934.5	20	20	J-193
H-103	False	1,000.0	True	1,951.5	20	20	J-798
H-104	False	1,000.0	True	2,206.4	20	20	J-882
H-105	False	1,000.0	True	3,294.6	20	32	J-2096
H-8B/9B	True	2,500.0	True	2,619.4	20	47	J-2096
H-109	True	2,500.0	True	2,685.8	20	44	J-2096
H-110	True	2,500.0	True	2,791.2	20	41	J-2096
H-111	True	2,500.0	True	2,860.7	20	33	J-2096
H-112	False	1,000.0	True	3,081.4	20	20	J-902
H-F8	False	1,000.0	True	2,906.0	20	20	J-848
H-8A	False	1,000.0	True	2,792.8	20	20	J-416
H-115	False	1,000.0	True	1,920.8	20	20	J-3306
H-116	False	1,000.0	True	2,600.1	20	20	J-506
H-117	True	2,500.0	True	2,721.5	20	24	J-528
H-118	False	1,000.0	True	2,576.5	20	20	J-756
H-119	False	1,000.0	True	2,532.8	20	20	J-388
H-120	False	1,000.0	True	2,409.7	20	20	J-866
H-123	False	1,000.0	True	2,267.6	20	20	J-3121
H-129	True	2,500.0	True	2,824.4	20	35	J-2096
H-131	True	2,500.0	True	2,883.0	20	33	J-2096
H-132	True	2,500.0	True	2,848.5	20	34	J-2096
J-3517	True	2,500.0	True	2,848.5	20	34	J-2096
H-133	True	2,500.0	True	2,927.4	20	34	J-2096
H-134	True	2,500.0	True	2,968.4	20	37	J-2096
H-136	True	2,500.0	True	3,109.9	20	33	J-2096
J-3518	True	2,500.0	True	3,109.9	20	34	J-2096
H-137	True	2,500.0	True	2,759.0	20	33	J-2096
H-138	True	2,500.0	True	2,748.9	20	38	J-2096
H-139	True	2,500.0	True	2,713.7	20	31	J-2096
H-140	True	2,500.0	True	2,703.9	20	39	J-2096
H-141	True	2,500.0	True	2,636.7	20	42	J-2096
H-142	True	2,500.0	True	2,548.4	20	40	J-2096
H-144	False	1,000.0	True	3,262.7	20	28	J-2096
H-146	False	1,000.0	True	3,299.0	20	32	J-2096
H-147	False	1,000.0	True	3,327.1	20	31	J-2096
H-151	False	1,000.0	True	2,631.8	20	20	J-1010
H-152	False	1,000.0	True	2,587.2	20	20	J-1157
H-153	False	1,000.0	True	2,553.2	20	20	J-626
H-154	False	1,000.0	True	3,288.4	20	39	J-2096
H-155	False	1,000.0	True	2,880.5	20	20	J-219
H-156	False	1,000.0	True	2,620.4	20	20	J-1216
H-157	False	1,000.0	True	2,916.2	20	20	J-834
H-158	False	1,000.0	True	3,281.7	20	25	J-2096
H-159	False	1,000.0	True	3,268.9	20	41	J-2096
H-160	False	1,000.0	True	1,892.7	20	20	J-824
H-161	False	1,000.0	True	2,148.5	20	20	J-536

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H-162	False	1,000.0	True	3,152.2	20	20	J-842
H-163	True	2,500.0	True	2,972.4	20	46	J-2096
H-164	True	2,500.0	True	2,984.7	20	49	J-2096
H-165	False	1,000.0	True	1,500.9	20	20	J-76
H-166	False	1,000.0	True	2,801.8	20	41	J-2096
H-167	False	1,000.0	True	2,936.3	20	34	J-2096
H-168	False	1,000.0	True	3,141.2	20	24	J-2096
H-172	False	1,000.0	True	3,471.7	20	31	J-2096
H-173	False	1,000.0	True	3,315.0	20	20	J-484
H-174	False	1,000.0	True	3,762.2	20	24	J-2096
H-175	True	2,500.0	True	2,548.2	20	24	J-949
H-176	True	2,500.0	True	3,212.1	20	26	J-2096
H-177	True	2,500.0	True	2,993.4	20	20	J-2932
H-178	True	2,500.0	True	3,333.1	20	28	J-2932
H-179	True	2,500.0	True	3,181.1	20	24	J-330
H-180	True	2,500.0	True	3,147.1	20	24	J-634
H-181	True	2,500.0	True	2,868.4	20	24	J-750
H-182	True	2,500.0	True	3,363.7	20	20	J-2932
H-183	False	1,000.0	True	3,811.0	20	20	J-642
H-184	False	1,000.0	True	2,382.7	20	20	J-580
H-185	False	1,000.0	True	2,642.4	20	20	J-766
H-188	False	1,000.0	True	1,685.0	20	20	J-520
H-189	False	1,000.0	True	2,119.1	20	20	J-758
H-190	False	1,000.0	True	1,889.3	20	20	J-898
H-191	False	1,000.0	True	2,633.0	20	20	J-598
H-192	False	1,000.0	True	2,180.1	20	20	J-900
H-193	False	1,000.0	True	2,506.5	20	20	J-540
H-194	False	1,000.0	True	2,074.1	20	20	J-814
H-195	False	1,000.0	True	1,779.7	20	20	J-672
H-196	False	1,000.0	True	1,594.1	20	20	J-818
H-197	False	1,000.0	True	1,383.1	20	20	J-578
H-198	False	1,000.0	True	1,446.8	20	20	J-720
H-199	False	1,000.0	True	1,355.9	20	20	J-510
H-201	False	1,000.0	True	1,000.8	20	20	J-3210
H-202	False	1,000.0	True	1,050.0	20	20	J-134
H-203	False	1,000.0	True	2,352.9	20	20	J-422
H-204	False	1,000.0	True	2,382.0	20	20	J-432
H-205	False	1,000.0	True	2,940.4	20	20	J-646
H-206	False	1,000.0	True	2,861.8	20	20	J-166
H-207	False	1,000.0	True	2,578.6	20	20	J-66
H-208	False	1,000.0	True	2,873.4	20	20	J-650
H-209	False	1,000.0	True	2,535.5	20	20	J-648
H-210	False	1,000.0	True	1,828.7	20	20	J-812
H-212	False	1,000.0	True	3,221.9	20	21	J-2096
H-218	False	1,000.0	True	2,423.0	20	20	J-345
H-219	False	1,000.0	True	2,304.6	20	24	H-232
H-225	False	1,000.0	True	2,372.9	20	20	J-476
H-226	True	2,500.0	True	3,327.0	20	30	J-2932
H-227	True	2,500.0	True	3,254.2	20	24	J-832
H-228	False	1,000.0	True	3,450.1	20	20	J-822
H-229	False	1,000.0	True	1,874.2	20	31	J-2932
H-230	False	1,000.0	True	3,004.4	20	41	J-2932

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-244	False	1,000.0	True	1,162.2	20	20	J-93
H-245	False	1,000.0	True	1,301.8	20	22	J-64
H-252	False	1,000.0	True	1,326.3	20	26	J-3094
H-253	False	1,000.0	True	1,321.5	20	30	J-3094
H-254	True	2,500.0	True	2,907.3	20	48	J-2932
H-255	False	1,000.0	True	3,573.9	20	35	J-2932
H-256	True	2,500.0	True	3,150.3	20	40	J-2932
H-257	True	2,500.0	True	3,223.7	20	38	J-2932
H-258	True	2,500.0	True	2,952.7	20	24	J-554
H-259	True	2,500.0	True	3,208.0	20	45	J-2932
H-260	True	2,500.0	True	3,225.1	20	24	J-770
H-261	True	2,500.0	True	2,721.1	20	24	J-390
H-262	True	2,500.0	True	2,861.7	20	24	J-570
H-263	True	2,500.0	True	2,933.7	20	38	J-3072
H-264	False	1,000.0	True	3,456.3	20	28	J-3072
H-265	True	2,500.0	True	2,828.7	20	47	J-3072
H-7C/8C	True	2,500.0	True	2,716.1	20	48	J-3072
H-267	True	2,500.0	True	2,538.6	20	49	J-3072
H-270	False	1,000.0	True	2,818.2	20	32	J-3072
H-271	False	1,000.0	True	2,826.0	20	32	J-3072
H-272	False	1,000.0	True	2,834.6	20	37	J-3072
H-273	True	2,500.0	True	2,544.7	20	45	J-3072
H-274	True	2,500.0	True	2,516.0	20	38	J-3072
H-275	True	2,500.0	True	2,515.7	20	47	J-3072
H-277	True	2,500.0	True	2,519.8	20	49	J-3072
H-278	True	2,500.0	True	2,519.8	20	46	J-3072
H-279	True	2,500.0	True	2,519.8	20	40	J-3072
H-294	False	1,000.0	True	1,927.6	20	20	J-3226
H-295	False	1,000.0	True	1,587.9	20	20	J-654
H-296	False	1,000.0	True	1,884.1	20	28	J-654
H-297	False	1,000.0	True	1,944.8	20	30	J-654
H-298	False	1,000.0	True	2,010.8	20	28	J-654
H-299	False	1,000.0	True	1,619.7	20	20	J-464
H-300	False	1,000.0	True	1,716.6	20	20	J-826
H-301	False	1,000.0	True	1,728.2	20	20	J-3226
H-302	False	1,000.0	True	1,373.9	20	20	J-800
H-6A/7A	False	1,000.0	True	1,009.3	20	20	J-604
H-F6	False	1,000.0	True	1,090.2	20	20	J-807
H-305	False	1,000.0	True	1,106.3	20	20	J-560
H-6B	False	1,000.0	True	1,175.1	20	38	J-3226
H-307	False	1,000.0	True	1,004.6	20	20	J-300
H-309	False	1,000.0	True	1,046.0	20	20	J-RobertFrost2
H-310	False	1,000.0	True	1,173.7	20	24	J-3226
H-311	False	1,000.0	True	1,162.1	20	20	J-3226
H-312	False	1,000.0	True	1,133.3	20	20	J-392
H-314	False	1,000.0	True	1,111.0	20	20	J-888
H-315	False	1,000.0	True	1,109.0	20	22	J-3226
H-316	False	1,000.0	True	1,282.7	20	20	J-1300
H-6C	False	1,000.0	True	1,791.1	20	20	J-572

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-318	False	1,000.0	True	1,197.3	20	26	J-3226
H-319	False	1,000.0	True	1,187.8	20	26	J-3226
H-320	False	1,000.0	True	1,767.6	20	20	J-1051
H-321	False	1,000.0	True	1,901.8	20	20	J-1051
H-322	False	1,000.0	True	2,096.3	20	20	H-320
H-323	False	1,000.0	True	3,027.7	20	34	J-654
H-324	True	2,500.0	True	3,187.7	20	41	J-654
H-325	True	2,500.0	True	3,368.4	20	39	J-654
H-326	True	2,500.0	True	3,472.4	20	32	J-2932
H-329	False	1,000.0	True	1,010.4	20	36	J-3219
H-F3	False	1,000.0	True	1,014.0	20	25	J-3219
H-338	False	1,000.0	True	1,777.4	20	20	J-353
H-339	False	1,000.0	True	1,745.5	20	20	J-714
H-340	False	1,000.0	True	1,315.8	20	28	J-3094
H-342	False	1,000.0	True	4,153.3	20	35	J-3430
H-358	False	1,000.0	True	3,761.0	20	20	J-2766
H-360	False	1,000.0	True	3,331.2	20	20	J-878
H-361	False	1,000.0	True	3,273.7	20	20	J-2766
H-362	False	1,000.0	True	3,070.6	20	22	J-2766
H-363	False	1,000.0	True	2,411.3	20	24	J-2766
H-364	False	1,000.0	True	1,596.4	20	20	J-452
H-365	False	1,000.0	True	1,498.2	20	20	J-778
H-366	False	1,000.0	True	1,833.3	20	24	J-2766
H-2A	False	1,000.0	True	1,575.1	20	24	J-2766
H-368	False	1,000.0	True	1,209.0	20	20	J-2766
H-F2	False	1,000.0	True	1,326.3	20	25	J-2766
H-373	False	1,000.0	True	3,085.7	20	20	J-796
H-1C/2C	False	1,000.0	True	1,109.2	20	20	J-890
H-430	False	1,000.0	True	1,605.9	20	30	J-1093
H-431	False	1,000.0	True	1,606.2	20	40	J-1093
H-432	False	1,000.0	True	1,537.1	20	20	J-1931
H-433	False	1,000.0	True	1,437.4	20	20	J-500
H-434	False	1,000.0	True	1,450.8	20	20	J-1586
H-435	False	1,000.0	True	1,448.1	20	20	J-209
H-436	False	1,000.0	True	1,607.4	20	29	J-1093
H-1B	False	1,000.0	True	1,595.7	20	52	J-1093
H-438	False	1,000.0	True	1,578.0	20	49	J-1093
H-439	False	1,000.0	True	1,574.2	20	36	J-1093
H-440	False	1,000.0	True	1,569.6	20	40	J-1093
H-441	False	1,000.0	True	1,568.9	20	43	J-1093
H-442	False	1,000.0	True	1,569.1	20	47	J-1093
H-443	False	1,000.0	True	1,569.4	20	46	J-1093
H-444	False	1,000.0	True	1,569.4	20	41	J-1093
H-F1	False	1,000.0	True	1,570.2	20	43	J-1093
H-1A	False	1,000.0	True	1,570.9	20	40	J-1093
H-447	False	1,000.0	True	1,562.6	20	29	J-1093
H-448	False	1,000.0	True	1,562.6	20	27	J-1093
H-449	False	1,000.0	True	1,546.9	20	20	J-1386
H-450	False	1,000.0	True	1,534.6	20	20	J-1684
H-451	False	1,000.0	True	1,553.9	20	33	J-1093
H-452	False	1,000.0	True	1,558.9	20	32	J-1093

Fire Flow Node FlexTable: Fire Flow Report (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Specify Local Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
H-453	False	1,000.0	True	1,548.0	20	29	J-1093
H-454	False	1,000.0	True	1,543.0	20	33	J-1093
H-455	False	1,000.0	True	1,250.8	20	29	J-1068
H-456	False	1,000.0	True	1,121.9	20	20	J-1068
H-457	False	1,000.0	True	1,414.5	20	28	J-1093
H-458	False	1,000.0	True	1,446.1	20	27	J-1093
H-459	False	1,000.0	True	1,365.8	20	34	J-1068
H-460	False	1,000.0	True	1,531.4	20	39	J-1093
H-461	False	1,000.0	True	1,545.9	20	40	J-1093
H-462	False	1,000.0	True	1,561.8	20	35	J-1093
H-463	False	1,000.0	True	1,561.9	20	35	J-1093
H-464	False	1,000.0	True	1,562.0	20	38	J-1093
H-465	False	1,000.0	True	1,562.9	20	43	J-1093
H-466	False	1,000.0	True	1,566.8	20	39	J-1093
H-467	False	1,000.0	True	1,434.5	20	38	J-1068
H-468	False	1,000.0	True	1,515.1	20	27	J-1068
H-469	False	1,000.0	True	1,570.8	20	42	J-1093
H-470	False	1,000.0	True	1,489.1	20	26	J-1093
J-3522	True	2,500.0	True	2,650.5	20	51	J-3072
J-3528	False	1,000.0	True	2,143.4	20	116	H-385
J-3540	False	1,000.0	True	2,829.4	20	38	J-3072
J-3555	False	1,000.0	True	2,279.6	20	20	J-1278
J-3567	False	1,000.0	True	2,688.0	20	36	J-2096
J-3577	True	2,500.0	True	2,661.6	20	42	J-2932
J-3578	False	1,000.0	True	3,853.9	20	20	J-2932
J-3579	False	1,000.0	True	4,500.0	20	43	J-2932
J-3607	False	1,000.0	True	4,095.1	20	23	J-3430
J-3608	False	1,000.0	True	4,095.4	20	24	J-3430
J-3611	False	1,000.0	True	1,141.5	20	20	J-1093
J-3667	False	1,000.0	True	2,398.0	20	20	J-3261
J-3668	False	1,000.0	True	1,724.3	20	20	J-375

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Existing System Peak Hour Pressures

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2954	151	252.68	0.9
J-2953	146	263.53	0.9
J-3468	145	268.12	2.0
J-3176	145	268.00	2.0
J-2796	144	269.71	2.2
J-2795	144	270.00	1.9
J-3255	144	272.00	2.4
J-3272	143	275.01	2.8
J-3348	140	281.70	3.2
J-362	137	291.38	2.2
J-361	137	291.39	2.5
J-3528	137	291.43	0.0
J-3337	134	300.81	2.2
J-320	124	325.10	0.9
J-2351	118	446.00	0.9
J-2959	116	347.18	2.2
J-3273	113	337.27	0.9
J-1930	113	456.25	0.9
J-385	113	337.82	0.9
J-380	113	338.03	0.9
J-698	113	457.52	0.9
J-2958	110	360.81	2.2
J-3028	110	358.77	0.9
J-3027	110	358.95	0.9
J-3407	110	362.59	2.5
J-430	109	363.22	2.2
J-3340	108	467.22	0.9
J-2925	108	363.47	0.9
J-2924	107	364.00	0.9
J-1739	107	365.60	0.9
J-2926	102	376.95	0.9
J-2446	101	378.00	0.9
J-2323	101	378.20	0.9
J-159	101	378.50	0.9
J-3464	101	378.60	0.9
J-2324	101	378.63	0.9
J-2927	101	378.74	0.9
J-2770	100	380.96	0.9
J-3066	100	393.62	0.9
J-3400	99	393.94	0.9
J-141	99	371.30	0.9
J-140	99	371.34	0.9
J-1463	99	371.58	0.9
J-3107	98	371.84	0.9
J-1299	98	371.98	0.9
J-2521	98	397.04	0.0
J-494	98	372.56	0.9
J-1023	98	374.10	0.9
J-101	97	374.16	0.9
J-100	97	374.20	0.9
J-2879	97	387.20	0.9
J-2801	97	374.46	0.9
J-53	97	399.67	0.0
J-54	97	400.06	0.0
J-1680	97	375.36	0.9
J-1681	97	375.44	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-78	97	375.77	0.9
J-77	97	375.81	0.9
J-1616	97	401.47	0.0
J-1322	96	401.93	0.0
1955	96	402.83	0.0
J-111	96	378.19	0.9
J-3203	96	378.22	0.9
J-119	96	378.27	0.9
J-284	95	393.03	0.9
J-3320	95	499.40	0.9
J-1967	95	396.98	2.2
J-3112	94	381.54	0.9
J-90	94	381.68	0.9
J-935	94	381.84	0.9
J-89	94	381.84	0.9
J-934	94	382.36	0.9
J-3105	93	383.52	0.9
J-3136	93	396.59	0.9
J-3448	93	404.69	2.8
J-1462	92	386.03	0.9
J-2759	92	399.10	0.9
J-874	92	386.61	0.9
J-2312	92	399.67	0.9
J-1767	92	399.82	0.9
J-2642	92	399.96	0.9
J-1768	92	399.96	0.9
J-2313	92	400.45	0.9
J-3462	92	400.49	0.9
J-2456	91	405.00	2.4
J-2760	91	401.40	0.9
J-2482	91	401.68	0.9
J-718	91	401.94	0.9
J-1804	91	405.08	0.9
J-2455	90	391.19	0.9
J-1697	90	404.24	0.0
J-2454	90	391.58	0.9
J-2088	90	404.51	0.0
J-3460	90	404.51	0.0
J-958	90	404.52	0.0
J-959	90	404.56	0.0
J-3514	90	392.00	0.9
J-3410	90	408.04	2.3
J-3502	90	280.00	3.5
J-594	90	408.41	0.9
J-2964	90	405.41	0.0
J-3449	90	411.92	2.1
J-3461	90	405.48	0.0
J-810	89	393.03	0.9
J-3300	89	393.66	0.9
J-3527	89	393.75	0.0
J-2840	89	309.46	0.9
J-2664	89	394.25	0.9
J-1635	89	309.60	0.9
J-3062	89	417.48	0.9
J-1352	89	413.84	0.9
J-3453	89	414.01	2.6

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3153	89	310.29	0.9
J-258	88	310.69	0.9
J-3044	88	408.20	0.0
J-3294	88	309.76	2.0
J-265	88	311.01	1.9
J-213	88	311.02	0.9
J-214	88	311.02	0.9
J-239	88	395.73	0.9
J-1186	88	397.35	2.1
J-2839	88	311.42	0.9
J-3470	88	397.58	0.9
J-3053	88	418.75	2.0
J-1561	88	396.18	0.9
J-365	88	311.68	2.4
J-2885	88	409.94	0.9
J-2748	88	413.67	2.3
J-1444	88	410.04	0.9
J-1482	87	397.40	0.9
J-1862	87	413.75	2.5
J-341	87	397.58	0.9
J-342	87	397.66	0.9
J-2094	87	397.98	0.9
J-3258	87	417.51	2.4
J-1521	87	417.62	0.9
J-1007	87	417.64	2.1
J-1008	87	417.66	0.9
J-3004	87	398.30	0.9
J-3406	87	414.73	2.7
J-2093	87	398.56	0.9
J-107	87	417.99	0.9
J-3454	87	418.07	0.9
J-2961	87	313.16	2.2
J-3465	87	412.42	0.9
J-2749	86	416.19	1.9
J-728	86	416.40	2.0
J-157	86	419.29	0.9
J-1545	86	314.20	1.9
J-156	86	419.42	0.9
J-1544	86	314.38	2.4
J-3405	86	416.78	2.2
J-1894	86	400.66	0.9
J-1893	86	401.11	0.9
J-2991	86	401.08	0.9
J-3005	86	401.25	0.9
J-3116	86	402.00	2.1
J-3455	85	421.75	0.9
J-2821	85	316.46	2.1
J-2568	85	419.00	1.9
J-147	85	316.70	0.9
J-968	85	402.75	0.9
J-3091	85	290.30	0.9
J-1507	85	316.92	0.9
J-3065	85	403.01	0.9
J-3404	85	419.73	0.9
J-1368	85	403.21	0.9
J-1196	85	403.28	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1197	85	403.31	0.9
J-2862	85	416.22	0.9
J-2975	85	403.63	0.9
J-1461	85	317.76	2.3
J-3299	85	420.42	3.1
J-2523	85	403.92	0.9
J-3106	84	423.67	2.0
J-2726	84	404.44	0.9
J-329	84	318.59	2.5
J-327	84	318.74	0.9
J-2524	84	404.69	0.9
J-2976	84	404.76	0.9
J-3052	84	427.63	0.9
J-2224	84	406.22	2.1
J-3290	84	319.93	0.9
J-3466	84	418.60	0.9
J-2223	84	406.93	2.9
J-3064	84	406.00	0.9
J-2325	84	407.06	3.0
J-3085	84	406.30	0.9
J-937	84	407.09	2.1
J-211	83	407.14	0.9
J-936	83	407.20	0.9
J-212	83	407.21	2.3
J-1343	83	407.24	0.9
J-1939	83	407.50	2.4
J-2984	83	406.92	0.9
J-530	83	407.84	0.9
J-828	83	321.37	1.9
J-472	83	407.87	0.9
J-3402	83	427.85	2.0
J-2121	83	321.60	2.0
J-322	83	322.80	2.7
J-249	83	322.83	0.9
J-3668	83	426.81	0.0
J-3125	83	427.71	0.9
J-702	83	428.60	0.9
J-3403	83	428.16	0.9
J-656	83	295.80	0.9
J-2337	83	295.93	0.9
J-2704	83	322.81	2.2
J-3139	82	409.56	2.1
J-2861	82	422.12	0.9
J-224	82	323.63	2.7
J-225	82	323.74	2.5
J-1792	82	528.20	0.9
J-3084	82	409.76	0.9
J-3319	82	528.29	0.9
J-1959	82	297.42	2.3
J-3279	82	208.21	0.0
J-1146	82	208.28	0.0
J-732	82	528.98	0.9
J-3463	82	423.37	0.9
J-2413	82	208.43	0.0
J-2271	82	208.53	0.0
J-1147	82	208.45	0.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1579	82	324.93	0.9
J-3199	82	208.87	0.0
J-237	82	209.00	0.0
J-1226	81	208.94	0.0
J-1722	81	427.07	2.0
J-3399	81	433.76	2.5
J-176	81	325.36	2.2
J-175	81	325.37	2.4
J-2412	81	208.99	0.0
J-3511	81	209.00	0.9
J-2592	81	209.09	0.9
J-1580	81	325.49	2.3
J-1232	81	209.10	0.0
J-1225	81	209.21	0.0
J-1370	81	411.33	0.9
J-1231	81	209.27	0.0
J-3409	81	427.46	2.5
J-1539	81	209.89	0.9
J-3104	81	428.02	2.2
J-1511	81	209.91	0.9
J-3284	81	412.06	0.9
J-3036	81	209.98	0.0
J-2395	81	210.00	0.0
J-2396	81	210.00	0.0
J-2688	81	210.00	0.0
J-2898	81	210.00	0.0
J-229	81	413.07	2.4
J-1247	81	300.01	2.1
J-2985	81	210.39	0.0
J-125	81	433.68	2.2
J-228	81	413.14	2.1
J-124	81	433.74	2.0
J-2870	81	210.50	0.9
J-2415	81	210.60	0.9
J-2949	81	210.61	0.0
J-2697	81	210.60	0.0
J-2849	81	210.56	0.0
J-3210	81	210.69	0.9
J-1538	81	210.67	0.9
J-1512	81	210.70	0.9
J-3068	81	435.63	2.4
J-243	81	413.00	0.9
J-2698	81	210.86	0.0
J-1141	81	413.04	0.9
J-1985	81	327.11	2.9
J-169	81	328.47	0.9
J-2048	81	413.61	0.9
J-1469	81	210.91	0.0
J-1468	81	210.95	0.0
J-3509	81	211.00	0.9
J-3082	81	413.24	0.9
J-396	81	327.38	2.1
J-2847	81	211.22	0.9
J-184	81	328.81	1.9
J-183	81	328.81	0.9
J-2414	80	211.39	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2846	80	211.43	0.0
J-3216	80	414.21	2.0
J-2049	80	414.24	2.3
J-177	80	211.56	0.9
J-3450	80	433.27	4.0
J-3045	80	433.32	2.4
J-2882	80	211.77	0.0
J-3398	80	436.60	0.9
J-3035	80	211.98	0.0
J-2850	80	212.00	0.0
J-2986	80	212.00	0.0
J-3198	80	212.00	0.0
J-2881	80	212.00	0.9
J-2017	80	212.00	0.9
J-2016	80	212.00	0.9
J-2950	80	212.11	0.9
J-1014	80	329.96	2.2
J-1013	80	330.00	0.9
J-3452	80	434.09	2.3
J-2365	80	434.10	3.1
J-2512	80	415.77	3.3
J-2923	80	437.63	0.9
J-1846	80	415.19	0.9
J-2564	80	314.00	1.9
J-1435	80	434.94	4.5
J-454	80	416.39	0.9
J-3092	80	303.15	0.9
J-2909	80	213.48	0.0
J-3278	79	213.64	0.0
J-3401	79	438.32	0.9
J-1909	79	330.08	2.0
J-1908	79	330.26	2.3
J-264 Airport	79	214.00	0.9
J-576	79	416.04	0.9
J-3456	79	435.51	0.9
J-3002	79	303.74	0.9
J-1518	79	315.02	2.1
J-858	79	315.05	0.9
J-3473	79	433.77	4.4
J-830	79	433.99	0.9
J-3067	79	439.61	2.4
J-2488	79	304.49	0.9
J-1557	79	416.93	0.9
J-2828	79	436.42	0.9
J-3098	79	316.15	0.9
J-2829	79	437.00	0.9
J-3342	79	417.66	0.9
J-1101	79	305.36	0.9
J-1886	79	332.22	0.9
J-1558	79	417.96	0.9
J-1100	78	305.56	0.9
J-2157	78	305.64	0.9
J-3211	78	302.47	2.1
J-636	78	216.33	0.9
J-264 Airport	78	216.33	2.1
J-1828	78	305.93	2.3

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3239	78	333.71	2.3
J-2205	78	217.42	2.2
J-902	78	217.59	0.9
J-848	78	217.51	0.9
J-3133	78	332.98	0.9
J-3060	78	418.80	0.9
J-2039	78	306.34	0.9
J-2922	78	441.28	2.1
J-259	78	217.06	0.0
J-2284	78	217.98	2.2
J-1408	78	317.79	0.9
J-604	78	306.77	0.9
J-1857	78	334.74	2.4
J-221	78	317.90	0.9
J-2939	78	318.00	2.1
J-1407	78	317.98	0.9
J-2286	78	217.28	0.0
J-876	78	333.70	0.9
J-220	78	318.12	0.9
J-55	78	439.00	0.9
J-3457	78	439.00	0.9
J-3458	78	439.00	0.9
J-3347	78	318.19	2.3
J-2643	78	318.20	0.9
J-1618	78	432.71	0.9
J-894	78	307.35	0.9
J-364	78	335.32	2.1
J-2391	78	538.41	0.9
J-1019	78	318.55	1.9
J-1020	78	318.59	0.9
J-1447	78	318.68	0.9
J-1448	78	318.78	0.9
J-3001	77	307.97	0.9
J-3288	77	319.15	0.9
J-3119	77	436.60	2.4
J-500	77	319.16	0.9
J-375	77	440.00	0.9
J-1803	77	319.30	0.9
J-3472	77	440.25	0.9
J-1931	77	319.35	0.9
J-1802	77	319.41	0.9
J-1932	77	319.47	1.9
J-1870	77	308.47	0.9
J-1481	77	219.67	3.0
J-912	77	319.57	0.9
J-913	77	319.57	0.9
J-416	77	219.72	0.9
J-2739	77	319.69	1.9
J-1383	77	436.99	0.9
J-836	77	539.69	0.9
J-1584	77	439.20	3.2
J-394	77	440.76	0.9
J-1645	77	437.31	2.5
J-2000	77	320.00	0.9
J-2539	77	320.00	1.9
J-844	77	220.00	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1269	77	220.00	2.9
J-3408	77	437.39	0.9
J-1586	77	320.00	0.9
J-2343	77	335.73	2.2
J-2335	77	335.83	0.9
J-3331	77	438.88	3.2
J-2336	77	335.90	2.0
J-1763	77	439.71	0.9
J-2390	77	540.25	0.9
J-510	77	219.81	0.9
J-479	77	336.08	0.9
J-2091	77	219.90	2.2
J-1764	77	439.97	2.1
J-1869	77	309.44	0.9
J-256	77	320.66	1.9
J-255	77	320.68	0.9
J-1524	77	540.52	0.9
J-3022	77	320.72	1.9
J-1382	77	437.87	0.9
J-3197	77	440.15	4.0
J-2868	77	540.81	0.0
J-1793	77	438.16	0.9
J-2253	77	441.90	0.9
J-706	77	310.05	2.4
J-1716	77	221.24	0.9
J-3160	77	310.06	0.9
J-1640	77	221.27	3.0
J-3326	77	221.83	2.0
J-1639	77	221.31	2.1
J-1756	76	221.97	2.2
J-2878	76	337.04	2.3
J-1755	76	222.02	0.9
J-748	76	541.55	0.9
J-682	76	541.77	0.9
J-RobertFrostSchool1	76	310.76	0.9
J-694	76	322.00	0.9
J-2120	76	322.00	0.9
J-2252	76	442.82	2.8
J-3474	76	440.90	2.9
J-2899	76	310.95	0.9
J-1913	76	310.97	0.9
J-3611	76	322.00	0.0
J-610	76	441.07	0.9
J-21	76	443.10	0.9
J-2375	76	443.25	2.1
J-2786	76	222.70	0.9
J-3306	76	222.55	2.9
J-2812	76	311.41	0.9
J-775	76	322.56	0.9
J-1396	76	322.77	0.9
J-1895	76	222.30	2.1
J-720	76	222.38	0.9
J-506	76	223.10	0.9
J-3121	76	222.66	0.9
J-1789	76	223.17	2.2
J-3059	76	424.63	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1955	76	312.21	0.9
J-1882	76	425.44	2.3
J-2005	76	444.30	0.9
J-2266	76	323.58	1.9
J-3301	76	223.78	1.9
J-109	75	323.70	0.9
J-3166	75	339.10	2.2
J-1199	75	440.98	0.9
J-2593	75	323.84	0.9
J-2165	75	323.83	2.2
J-1434	75	323.99	0.9
J-1347	75	312.77	2.0
J-1053	75	224.19	0.9
J-1346	75	312.81	2.2
J-3215	75	425.93	2.5
J-216	75	324.09	0.9
J-1956	75	312.90	0.9
J-2281	75	224.65	0.9
J-1881	75	426.01	1.9
J-209	75	324.22	0.9
J-215	75	324.24	0.9
J-2834	75	224.00	2.0
J-1388	75	224.00	0.9
J-1389	75	224.00	2.4
J-3194	75	324.08	2.3
J-2164	75	324.25	2.5
J-1017	75	224.23	0.9
J-1861	75	224.15	1.9
J-1860	75	224.17	1.9
J-1018	75	224.30	0.9
J-3413	75	441.60	0.9
J-1183	75	224.32	0.9
J-1182	75	224.36	0.9
J-2906	75	224.39	0.9
J-2188	75	339.91	2.3
J-1982	75	426.46	3.0
J-1096	75	224.43	0.9
J-179	75	224.43	0.9
J-180	75	224.44	0.9
J-1585	75	224.46	0.9
J-2727	75	224.46	0.9
J-3555	75	224.00	0.0
J-1095	75	224.48	0.9
J-1790	75	313.47	2.0
J-822 Industry Way	75	224.50	1.9
J-2282	75	225.27	0.9
J-SilvertonSeniorCenter	75	313.49	0.9
J-1475	75	225.31	0.9
J-3080	75	222.93	2.0
J-3471	75	445.52	2.3
J-355	75	445.54	0.9
J-2872	75	225.41	0.9
J-754	75	426.11	0.9
J-1131	75	225.44	0.9
J-1130	75	225.52	0.9
J-640	75	426.88	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2931	75	224.50	0.9
J-1043	75	225.58	0.9
J-3304	75	225.51	0.9
J-1042	75	225.59	0.9
J-1329	75	340.47	0.9
J-2819	75	545.00	0.0
J-2869	75	545.00	0.0
J-3526	75	545.00	0.0
J-826	75	314.03	0.9
J-RobertFrost2	75	314.00	2.5
J-3325	75	225.72	2.2
J-3024	75	442.66	2.2
J-2854	75	224.71	0.0
J-73	75	446.37	0.9
J-3128	75	343.49	2.2
J-275	75	225.65	0.9
J-274	75	225.68	0.9
J-2930	75	225.34	0.9
J-3021	75	225.57	1.9
J-752	74	226.26	0.9
J-2247	74	225.60	0.9
J-1588	74	427.45	0.9
J-3079	74	225.52	2.1
J-2716	74	225.91	0.9
J-2246	74	225.73	0.9
J-1872	74	226.00	0.9
J-1873	74	226.00	0.9
J-2171	74	226.43	1.9
J-187	74	226.00	0.9
J-188	74	226.00	0.9
J-1134	74	226.07	0.9
J-860	74	427.66	0.9
J-1578	74	226.74	2.4
J-2256	74	225.96	1.9
J-2316	74	225.87	2.2
J-812	74	226.00	0.9
J-1807	74	226.00	2.0
J-2257	74	226.00	0.9
J-2965	74	226.00	2.1
J-528	74	225.88	0.9
J-1135	74	226.14	0.9
J-920	74	226.82	2.2
J-1672	74	225.66	2.6
J-3020	74	225.99	0.9
J-1279	74	225.78	0.9
J-3330	74	225.80	0.9
J-1278	74	225.81	0.9
J-524	74	225.89	0.9
J-2301	74	227.10	0.9
J-578	74	225.83	2.0
J-1823	74	343.27	2.2
J-2966	74	226.30	2.1
J-297	74	225.99	0.9
J-2233	74	226.47	0.9
J-2883	74	226.00	0.9
J-122	74	226.00	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-123	74	226.00	0.9
J-1055	74	226.00	0.9
J-1056	74	226.00	0.9
J-117	74	226.00	0.9
J-313	74	226.00	0.9
J-314	74	226.00	0.9
J-1833	74	226.00	0.9
J-1834	74	226.00	0.9
J-1066	74	226.02	2.0
J-3540	74	226.50	0.0
J-2302	74	227.25	0.9
J-134	74	225.95	0.0
J-2529	74	226.55	0.9
J-3362	74	226.00	2.1
J-2161	74	226.00	0.9
J-818	74	226.00	0.9
J-1981	74	226.00	2.0
J-2160	74	226.00	2.3
J-2712	74	226.57	0.9
J-3016	74	343.45	0.9
J-962	74	226.00	0.4
J-963	74	226.00	0.0
J-1446	74	226.00	0.0
J-1748	74	227.32	0.9
J-1948	74	226.14	0.9
J-846	74	226.27	0.9
J-1836	74	226.76	0.9
J-2560	74	226.63	2.3
J-3142	74	226.64	2.0
J-311	74	226.78	0.9
J-972	74	343.66	1.9
J-312	74	226.78	0.9
J-2559	74	226.66	2.1
J-820	74	444.31	0.9
J-1336	74	226.85	0.9
J-3417	74	444.33	2.5
J-2699	74	226.86	0.9
J-1837	74	226.89	0.9
J-1749	74	227.67	0.9
J-1335	74	226.95	0.9
J-422	74	226.55	0.9
J-1503	74	226.74	0.9
J-2733	74	226.77	0.9
J-730	74	227.03	0.9
J-3109	74	226.56	2.0
J-252	74	226.94	0.9
J-3286	74	227.07	0.9
J-2261	74	226.68	2.6
J-3149	74	327.00	1.9
J-502	74	227.14	0.9
J-1504	74	226.95	0.9
J-2530	74	227.22	0.9
J-674	74	444.61	0.9
J-2373	74	227.29	0.9
J-332	74	227.29	0.9
J-333	74	227.30	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3411	74	444.69	2.1
J-2128	74	227.87	0.9
J-193	74	228.00	0.9
J-194	74	228.00	0.9
J-1944	74	228.00	0.9
J-1356	74	228.00	2.6
J-1357	74	228.00	2.2
J-2772	74	227.18	0.9
J-2773	74	227.18	2.0
J-966	74	227.45	0.9
J-967	74	227.46	0.9
J-2764	74	228.00	0.9
J-2765	74	228.00	0.9
J-1900	74	227.49	0.9
J-210 Jefferson	74	228.00	0.9
J-3147	74	227.05	0.9
J-2434	74	226.97	2.4
J-3163	74	228.00	0.9
J-2422	74	227.09	0.9
J-2435	74	227.07	0.9
J-3007	74	228.19	0.9
J-3442	74	447.08	2.1
J-2472	74	227.21	0.9
J-1366	74	327.55	2.3
J-1899	74	227.72	0.9
J-2518	74	429.12	0.9
J-2579	74	227.30	2.0
J-161	74	228.31	0.9
J-3196	74	447.19	0.9
J-160	74	228.34	2.0
J-3169	74	227.35	0.9
J-3351	74	228.41	0.9
J-724	74	227.40	0.9
J-1661	74	447.30	0.9
J-2250	74	327.81	1.9
J-1184	74	227.94	0.9
J-1367	74	327.82	2.4
J-1185	74	227.94	0.9
J-2754	74	227.97	0.9
J-1218	74	228.00	0.9
J-1217	74	228.00	0.9
J-2761	74	228.00	0.9
J-3291	74	228.00	0.9
J-2802	74	228.02	0.9
J-2473	74	227.57	0.9
J-3292	74	227.63	2.4
J-3037	74	228.04	0.9
J-2848	74	227.84	0.9
J-2159	74	228.60	0.9
J-2718	74	317.37	2.4
J-840	73	328.00	0.9
J-1783	73	328.00	2.4
J-786	73	328.00	0.9
J-1242	73	328.00	2.0
J-648	73	228.00	0.9
J-1868	73	228.00	2.6

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-866	73	227.75	0.9
J-206	73	450.78	2.0
J-2448	73	328.13	2.0
J-3441	73	447.69	3.4
J-3517	73	228.85	0.9
J-3011	73	229.10	2.6
J-1978	73	229.04	0.9
J-3148	73	228.01	0.9
J-2892	73	228.50	0.9
J-1554	73	328.41	2.0
J-2915	73	228.56	0.9
J-8	73	328.47	0.9
J-7	73	328.47	2.5
J-440	73	229.13	0.9
J-892	73	229.17	0.9
J-3358	73	229.39	2.4
J-1906	73	228.34	0.9
J-1907	73	228.38	2.0
J-428	73	228.89	0.9
J-3108	73	228.50	2.2
J-2730	73	317.96	0.9
J-2638	73	229.02	0.9
J-3102	73	318.00	0.9
J-1552	73	328.92	2.4
J-66	73	228.95	0.9
J-65	73	228.95	2.1
J-2275	73	229.02	2.0
J-3491	73	318.49	0.9
J-2729	73	318.21	0.9
J-2276	73	229.11	2.2
J-300	73	318.26	0.9
J-3177	73	443.71	0.0
J-1888	73	318.62	2.9
J-2659	73	230.00	1.9
J-317	73	230.00	0.9
J-2126	73	230.01	0.9
J-2897	73	229.39	0.9
J-1656	73	230.02	0.9
J-2629	73	229.40	0.9
J-233	73	318.34	0.9
J-1255	73	229.41	0.9
J-299	73	318.35	0.9
J-534	73	230.01	2.1
J-3167	73	230.11	2.0
J-434	73	318.73	0.9
J-2858	73	318.45	2.1
J-232	73	318.43	0.9
J-3173	73	318.43	2.5
J-2650	73	318.48	0.9
J-1254	73	229.51	0.9
J-3086	73	230.16	0.9
J-3492	73	318.83	0.9
J-2127	73	230.23	2.0
J-2896	73	229.62	0.9
J-2476	73	345.33	0.9
J-2265	73	230.22	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3146	73	229.71	0.9
J-676	73	345.41	0.9
J-2144	73	345.44	2.0
J-672	73	229.21	0.9
J-2911	73	449.82	2.8
J-2624	73	229.32	2.3
J-87	73	346.75	2.1
J-2477	73	345.55	2.1
J-88	73	346.77	1.9
J-2918	73	345.60	2.8
J-2452	73	229.37	2.2
J-3087	73	230.52	2.0
J-2540	73	549.95	0.9
J-2962	73	230.00	0.9
J-1976	73	230.71	2.2
J-388	73	229.56	0.9
J-2406	73	229.57	2.0
J-2599	73	330.00	2.5
J-470	73	230.14	0.9
J-2658	73	230.83	1.9
J-1428	73	330.02	2.1
J-2791	73	345.85	0.9
J-1979	73	230.00	2.0
J-1929	73	230.00	2.3
J-766	73	230.00	0.9
J-2274	73	230.00	2.0
J-1980	73	230.00	2.1
J-1928	73	230.00	2.3
J-1977	73	230.89	0.9
J-1427	73	330.14	0.9
J-2762	73	230.28	0.9
J-2694	73	230.28	0.9
J-764	73	230.29	0.9
J-2657	73	231.00	2.2
J-3283	73	330.17	2.0
J-1311	73	230.31	0.9
J-2387	73	230.00	2.4
J-2386	73	230.00	2.0
J-3195	73	330.25	2.0
J-162	72	346.16	0.9
J-2912	72	230.00	2.0
J-590	72	330.43	0.9
J-HighSchool_Schlador	72	230.36	2.0
J-163	72	346.17	0.9
J-2262	72	230.02	0.9
J-2263	72	230.06	0.9
J-2509	72	346.25	0.9
J-2792	72	346.31	0.9
J-2610	72	230.16	0.9
J-2717	72	319.99	0.9
J-2169	72	230.33	2.1
J-2198	72	231.46	0.9
J-2876	72	346.58	0.9
J-3000	72	230.43	2.0
J-1854	72	230.78	2.2
J-2279	72	319.90	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-726	72	231.51	0.9
J-798	72	231.61	0.9
J-1381	72	330.94	2.2
J-1660	72	231.68	2.2
J-2440	72	230.55	2.2
J-1855	72	230.90	2.2
J-2067	72	231.58	0.9
J-2278	72	320.03	0.9
J-1996	72	230.94	2.0
J-2168	72	230.66	0.9
J-2439	72	230.66	2.4
J-1997	72	231.01	0.9
J-2212	72	231.03	0.9
J-646	72	231.06	0.9
J-1075	72	231.10	0.9
J-580	72	231.12	0.9
J-687	72	231.80	0.9
J-1203	72	232.00	0.9
J-1076	72	231.14	2.0
J-3187	72	232.00	2.2
J-882	72	232.00	2.1
J-1910	72	232.00	2.1
J-2470	72	230.89	2.4
J-1774	72	449.38	2.1
J-2744	72	320.55	2.2
J-1310	72	231.34	0.9
J-2184	72	231.23	0.9
J-3354	72	232.00	0.9
J-2213	72	231.25	0.9
J-584	72	232.00	0.9
J-2272	72	232.00	0.9
J-3309	72	231.29	0.9
J-1773	72	449.51	2.6
J-2234	72	231.13	2.0
J-1761	72	320.56	2.3
J-2072	72	347.32	0.9
J-3232	72	232.27	2.2
J-2464	72	232.20	0.9
J-598	72	231.16	0.9
J-2471	72	231.24	2.4
J-3206	72	232.25	0.9
J-309	72	231.60	2.0
J-2465	72	232.36	0.9
J-310	72	231.63	0.9
J-756	72	231.37	0.9
J-106	72	348.67	0.9
J-2068	72	231.34	2.3
J-2076	72	232.59	2.3
J-2910	72	451.75	3.1
J-3499	72	320.80	0.9
J-3170	72	320.81	2.4
J-2297	72	231.91	0.9
J-1762	72	320.89	0.9
J-2298	72	231.93	0.9
J-1027	72	232.65	0.9
J-856	72	347.67	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2071	72	231.58	2.0
J-742	72	551.96	0.9
J-1400	72	232.00	0.9
J-1401	72	232.00	0.9
J-636 McClaine	72	232.00	0.9
J-1375	72	232.00	0.9
J-1376	72	232.00	0.9
J-1062	72	232.00	0.9
J-1061	72	232.00	0.9
J-945	72	232.00	0.9
J-1201	72	232.00	0.9
J-1202	72	232.00	0.9
J-2383	72	232.00	0.9
J-1026	72	232.75	0.9
J-2077	72	232.78	0.9
J-1286	72	348.90	1.9
J-2070	72	231.67	2.0
J-3667	72	232.00	0.0
J-650	72	232.00	2.0
J-301 S. James	72	232.00	1.9
J-2083	72	232.00	2.2
J-2084	72	232.00	2.5
J-165	72	232.00	0.9
J-166	72	232.00	0.9
J-1281	72	232.00	2.3
J-2675	72	232.00	2.3
J-540	72	231.73	0.9
J-3493	72	321.44	0.9
J-2875	72	347.97	2.3
J-3287	72	231.86	2.2
J-432	72	232.00	0.9
J-2185	72	232.00	2.3
J-1283	72	321.29	0.9
J-758	72	232.00	0.9
J-2307	72	232.00	2.2
J-2384	72	231.89	2.0
J-2211	72	232.00	0.9
J-3308	72	232.00	2.1
J-456	72	233.08	0.9
J-2210	72	232.00	2.0
J-304	72	321.40	2.0
J-305	72	321.43	0.9
J-1516	72	233.15	2.8
J-1851	72	233.10	0.9
J-95	72	349.41	1.9
J-1149	72	321.49	2.1
J-20	72	349.42	0.9
J-19	72	349.43	0.9
J-1398	72	233.25	0.9
J-1282	72	321.53	0.9
J-1915	72	232.12	0.9
J-900	72	232.15	0.9
J-343	72	233.31	0.9
J-344	72	233.32	0.9
J-944	72	233.32	0.9
J-814	72	232.11	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1397	72	233.38	0.9
J-1772	72	233.31	0.9
J-2541	72	321.67	0.9
J-2299	72	232.26	0.9
J-1858	71	232.25	2.0
J-1253	71	232.33	2.3
J-1250	71	232.39	0.9
J-2326	71	232.88	0.9
J-1150	71	232.41	0.9
J-1151	71	232.49	0.9
J-359	71	332.82	0.9
J-360	71	332.82	2.3
J-999	71	233.76	0.9
J-658	71	233.00	0.9
J-998	71	233.77	0.9
J-3123	71	233.05	2.0
J-1194	71	232.88	0.9
J-3316	71	233.03	2.0
J-2148	71	332.96	2.0
J-1485	71	232.62	2.0
J-1819	71	233.82	0.9
J-1912	71	233.20	0.9
J-1213	71	234.00	0.9
J-1214	71	234.00	2.0
J-2228	71	234.00	0.9
J-2227	71	234.00	2.0
J-776	71	233.23	0.9
J-2822	71	234.00	0.9
J-2823	71	234.00	0.9
J-3111	71	234.00	0.9
J-3310	71	434.70	0.9
J-1484	71	232.79	2.1
J-2328	71	234.00	0.9
J-1394	71	234.00	0.9
J-1395	71	234.00	0.9
J-2982	71	234.00	0.9
J-301	71	234.00	0.9
J-302	71	234.00	0.9
J-2102	71	234.00	0.9
J-2201	71	234.00	0.9
J-2701	71	234.00	0.9
J-370	71	234.00	0.9
J-371	71	234.00	0.9
J-253	71	234.00	0.9
J-2322	71	234.00	2.1
J-2321	71	234.00	2.0
J-596	71	322.27	0.9
J-1597	71	322.28	2.0
J-3261	71	233.23	1.9
J-3207	71	234.00	0.9
J-1820	71	234.10	0.9
J-3317	71	234.00	0.9
J-1779	71	322.39	2.0
J-688	71	234.16	0.9
J-2101	71	234.23	0.9
J-3209	71	234.27	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2981	71	234.30	0.9
J-1973	71	234.27	1.9
J-746	71	234.32	0.9
J-2542	71	322.59	2.0
J-514	71	333.54	0.9
J-2444	71	233.63	2.1
J-1922	71	234.42	0.9
J-2525	71	234.47	0.9
J-1411	71	234.39	2.3
J-164	71	234.43	0.9
J-115	71	234.43	0.9
J-564	71	234.44	0.9
J-2526	71	234.55	0.9
J-2769	71	323.06	3.1
J-2378	71	234.59	0.9
J-1800	71	234.00	0.9
J-1786	71	234.00	1.9
J-1787	71	234.00	0.9
J-1880	71	234.00	2.2
J-2320	71	234.00	2.1
J-2631	71	234.02	0.9
J-2700	71	234.67	1.9
J-2021	71	234.73	0.9
J-2376	71	233.86	2.1
J-2377	71	234.65	0.9
J-3359	71	234.72	2.5
J-3518	71	234.60	0.9
J-1195	71	233.90	1.9
J-2562	71	234.84	0.9
J-898	71	233.61	0.9
J-1969	71	233.94	2.2
J-2022	71	234.84	2.0
J-2788	71	234.00	2.2
J-294	71	234.00	1.9
J-295	71	234.00	0.9
J-1318	71	234.00	2.3
J-2443	71	234.07	2.2
J-3245	71	234.98	2.1
J-2195	71	234.05	1.9
J-2519	71	234.99	1.9
J-2385	71	233.79	2.5
J-750	71	234.31	0.9
J-2615	71	234.95	0.9
J-3023	71	451.66	2.1
J-2495	71	233.92	2.0
J-464	71	323.29	0.9
J-642	71	234.22	0.9
J-3046	71	235.02	1.9
J-520	71	234.00	0.9
J-3122	71	235.20	2.0
J-2648	71	235.04	0.9
J-3321	71	234.00	2.2
J-1328	71	234.08	0.9
J-1327	71	234.10	2.1
J-2616	71	235.21	0.9
J-1936	71	234.43	2.6

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1340	71	235.34	0.9
J-2572	71	235.35	1.9
J-1339	71	235.36	2.0
J-3043	71	235.35	0.9
J-2561	71	235.36	2.0
J-2398	71	235.31	2.1
J-3263	71	235.42	2.2
J-2601	71	235.44	0.9
J-1593	71	235.35	2.0
J-2145	71	235.42	2.3
J-1594	71	235.36	2.6
J-2607	71	235.59	0.9
J-2146	71	235.56	2.4
J-2014	71	235.62	2.8
J-2397	71	235.56	0.9
J-2554	71	235.62	0.9
J-970	71	235.57	0.9
J-462	71	235.67	0.9
J-1556	71	235.60	0.9
J-2533	71	235.68	0.9
J-2449	71	235.63	2.0
J-2532	71	235.71	0.9
J-692	71	350.44	0.9
J-3522	71	235.00	2.0
J-792	71	235.77	0.9
J-SilverCreekPlaza2	71	235.06	0.9
J-1306	71	235.76	0.9
J-2135	70	234.59	2.1
J-2242	70	235.87	2.8
J-2018	70	350.69	2.7
J-1003	70	235.92	0.9
J-2606	70	236.07	0.9
J-2241	70	236.06	3.2
J-1004	70	236.00	0.9
J-2960	70	236.00	0.9
J-3298	70	235.28	2.3
J-2623	70	235.26	2.1
J-2225	70	235.72	2.0
J-1825	70	352.63	2.1
J-566	70	235.76	0.9
J-760	70	352.64	0.9
J-2622	70	235.36	2.0
J-1273	70	235.33	2.2
J-2226	70	235.86	2.5
J-3154	70	235.87	2.2
J-3201	70	236.02	0.9
J-2618	70	236.06	2.0
J-1877	70	236.07	0.9
J-2006	70	236.08	1.9
J-3274	70	236.00	1.9
J-325	70	236.14	0.9
J-2617	70	236.14	0.9
J-622 N. Water	70	236.15	0.9
J-870	70	236.64	0.9
J-267	70	236.17	0.9
J-1876	70	236.20	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2793	70	236.20	0.9
J-2535	70	236.21	1.9
J-3364	70	234.00	0.9
J-98	70	353.58	2.0
J-2612	70	237.12	0.9
J-3075	70	237.07	1.9
J-Brucepac1	70	236.91	0.9
J-3302	70	236.95	0.9
J-2584	70	237.24	0.9
J-2187	70	236.96	2.0
J-2031	70	237.17	2.0
J-3268	70	236.44	0.9
J-1891	70	237.19	0.9
J-2683	70	237.22	0.9
J-2857	70	237.23	0.9
J-2030	70	237.28	2.6
J-2186	70	237.13	0.9
J-496	70	237.41	0.9
J-2614	70	237.19	0.9
J-2613	70	237.48	0.9
J-3262	70	237.41	2.1
J-1826	70	438.63	2.6
J-3159	70	325.77	2.2
J-2047	70	438.29	0.9
J-933	70	438.29	0.9
J-772	70	438.73	2.2
J-2586	70	237.75	0.9
J-2681	70	237.50	0.9
J-418	70	326.01	0.9
J-2255	70	237.21	2.3
J-2585	70	238.09	0.9
J-2114	70	238.00	0.9
J-3030	70	238.00	0.9
J-1106	70	238.00	0.9
J-1107	70	238.00	0.9
J-2682	70	238.00	0.9
J-2999	70	238.00	2.7
J-1559	70	238.00	2.7
J-1560	70	238.00	0.9
J-2993	70	238.00	0.9
J-2992	70	238.00	0.9
J-3126	70	237.30	0.9
J-807	70	326.27	0.9
J-2	70	238.08	0.9
J-1679	70	326.31	1.9
J-3336	69	557.36	0.9
J-3498	69	326.33	2.1
J-173	69	238.26	0.9
J-1177	69	238.30	2.2
J-2460	69	238.20	0.9
J-3056	69	326.45	3.5
J-2417	69	557.49	0.9
J-802	69	237.69	0.9
J-2254	69	237.68	1.9
J-3013	69	353.12	2.2
J-1700	69	557.60	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-634	69	238.00	0.9
J-2166	69	238.00	0.9
J-2556	69	238.00	0.9
J-2691	69	238.00	0.9
J-2557	69	238.00	0.9
J-2818	69	238.32	0.9
J-2333	69	238.68	2.4
J-2884	69	238.37	0.9
J-420	69	455.85	0.9
J-3202	69	238.02	0.9
J-2334	69	238.81	2.0
J-662	69	237.96	0.9
J-2136	69	238.10	0.9
J-2080	69	238.11	2.2
J-3437	69	456.01	3.1
J-2416	69	558.12	0.9
J-3559	69	239.00	0.0
J-2137	69	238.31	0.9
J-3251	69	239.22	2.1
J-1971	69	238.44	0.9
J-2459	69	239.17	0.9
J-3208	69	238.54	0.9
J-3345	69	439.87	0.9
J-1081	69	239.31	0.9
J-3168	69	238.74	2.0
J-1361	69	239.45	0.9
J-3031	69	239.34	0.9
J-1360	69	239.55	0.9
J-536	69	239.43	0.9
J-925	69	238.72	0.9
J-1620	69	239.48	0.9
J-1508	69	238.81	0.9
J-2303	69	239.83	2.8
J-2402	69	327.91	0.9
J-2215	69	239.78	0.9
J-626	69	240.00	0.9
J-1871	69	240.00	3.2
J-1711	69	239.82	0.9
J-762	69	240.03	0.9
J-3205	69	328.14	2.2
J-592	69	240.00	0.9
J-2407	69	240.00	0.9
J-1211	69	240.00	0.9
J-1212	69	240.00	0.9
J-1128	69	239.20	0.9
J-2997	69	239.96	0.9
J-2401	69	328.25	2.0
J-2781	69	240.00	0.9
J-660	69	240.15	0.9
J-1963	69	239.93	0.9
J-1158	69	240.00	0.9
J-1159	69	240.00	0.9
J-1514	69	239.35	0.9
J-2843	69	240.30	0.9
J-1526	69	339.32	2.8
J-2587	69	240.00	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1576	69	240.00	2.0
J-2360	69	240.00	2.0
J-2163	69	240.00	0.9
J-2162	69	240.00	2.2
J-3200	69	239.62	2.0
J-1903	69	240.24	2.4
J-2349	69	239.91	0.9
J-1902	69	240.40	0.9
J-2025	69	240.26	0.9
J-1418	69	240.41	0.9
J-210 C Street	69	239.95	0.9
J-2280	69	240.16	0.9
J-2181	69	239.98	0.9
J-1160	69	240.00	0.9
J-2551	69	240.22	0.9
J-2180	69	240.00	0.9
J-1904	69	240.35	2.0
J-1525	69	339.50	2.1
J-949	69	240.26	1.9
J-330	69	240.06	0.9
J-2845	69	290.22	2.5
J-2844	68	240.61	0.9
J-1782	68	240.08	0.9
J-2552	68	240.43	2.1
J-690	68	240.15	0.9
J-2684	68	240.76	1.9
J-2656	68	240.95	0.9
J-324	68	357.60	2.5
J-2426	68	290.87	0.9
J-824	68	241.07	0.9
J-2595	68	241.09	2.2
J-1091	68	240.38	0.9
J-323	68	357.72	2.2
J-1532	68	240.48	0.9
J-2782	68	241.20	0.9
J-2427	68	291.07	0.9
J-1730	68	241.23	2.1
J-2153	68	291.13	0.9
J-1658	68	340.52	2.5
J-588	68	291.23	0.9
J-171	68	241.72	0.9
J-1099	68	291.46	0.9
J-1176	68	241.77	2.3
J-2916	68	241.89	0.9
J-321 Eska	68	241.94	0.9
J-1784	68	330.05	2.2
J-2998	68	241.85	0.9
J-3179	68	341.00	2.5
J-1659	68	341.00	0.9
J-3412	68	458.50	0.9
J-800	68	330.17	0.9
J- SilverCreekPlaza1	68	241.39	0.9
J-1648	68	242.00	2.0
J-3186	68	242.00	0.9
J-1647	68	242.00	0.9
J-3063	68	242.01	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1582	68	242.00	2.3
J-1581	68	242.00	0.9
J-2740	68	242.00	0.9
J-2741	68	242.00	0.9
J-1109	68	242.00	2.4
J-1110	68	242.00	0.9
J-1102	68	242.00	2.4
J-1103	68	242.00	0.9
J-1794	68	242.00	0.9
J-1795	68	242.00	2.1
J-2955	68	242.06	2.1
J-1718	68	330.34	1.9
J-2110	68	241.54	2.0
J-SilverCreekPlaza3	68	241.55	0.9
J-3307	68	242.28	1.9
J-3018	68	241.43	0.9
J-2514	68	242.00	2.1
J-127	68	242.31	2.2
J-126	68	242.31	2.2
J-3150	68	242.02	1.9
J-1345	68	242.05	0.9
J-1334	68	341.43	2.1
J-3282	68	292.00	2.6
J-2571	68	292.00	2.8
J-2570	68	292.00	2.0
J-2655	68	242.24	0.9
J-3103	68	242.09	2.0
J-1663	68	241.57	0.9
J-1028	68	242.12	0.9
J-1565	68	242.38	0.9
J-2206	68	242.58	2.7
J-1735	68	242.46	2.3
J-2151	68	241.75	0.9
J-3213	68	443.36	2.4
J-704	68	241.77	0.9
J-1905	68	242.54	2.2
J-1736	68	242.57	0.9
J-2438	68	242.80	0.9
J-1333	68	341.83	2.0
J-3204	68	242.67	2.3
J-1566	68	242.67	2.6
J-480	68	241.98	0.9
J-842	67	242.89	0.9
J-2708	67	242.47	0.9
J-507 N. Water	67	242.48	0.9
J-2672	67	242.55	0.9
J-1126	67	242.57	0.9
J-1154	67	243.04	0.9
J-1127	67	242.59	0.9
J-1155	67	243.10	0.9
J-606 Front Street	67	242.66	0.9
J-3324	67	357.75	2.1
J-2671	67	242.79	0.9
J-2935	67	292.83	2.0
J-2248	67	242.91	2.2
J-468	67	242.58	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-558	67	243.20	0.9
J-2251	67	242.96	2.1
J-2236	67	242.72	0.9
J-2249	67	243.06	2.4
J-1821	67	243.35	2.8
J-3227	67	444.19	0.9
J-2235	67	242.81	0.9
J-832	67	243.11	2.0
J-2929	67	243.37	2.2
J-1535	67	243.40	0.9
J-1534	67	243.64	0.9
J-796	67	293.42	2.9
J-200	67	242.93	0.9
J-1122	67	243.68	0.9
J-1198	67	243.69	3.0
J-167	67	243.87	0.9
J-195	67	243.88	0.9
J-2191	67	243.16	0.9
J-2827	67	243.91	0.9
J-3280	67	244.00	0.9
J-3214	67	444.78	2.8
J-2192	67	243.32	2.5
J-3012	67	358.67	2.0
J-3567	67	244.00	0.0
J-1623	67	243.97	0.9
J-2082	67	244.00	3.7
J-1083	67	244.00	2.4
J-1084	67	244.00	0.9
J-2020	67	244.00	0.9
J-2942	67	244.00	2.0
J-2019	67	244.00	2.1
J-2943	67	244.00	2.0
J-2355	67	244.28	0.9
J-2777	67	244.18	2.0
J-2803	67	244.00	2.1
J-1464	67	343.28	0.9
J-2804	67	244.00	0.9
J-2677	67	244.00	2.0
J-2678	67	244.00	1.9
J-1657	67	343.38	3.6
J-2125	67	294.00	2.0
J-2012	67	294.00	2.4
J-3220	67	294.00	2.4
J-2380	67	244.38	0.9
J-2379	67	244.42	2.1
J-2778	67	244.47	2.1
J-3019	67	243.68	0.9
J-788	67	244.68	0.9
J-1057	67	244.78	0.9
J-1156	67	244.84	0.9
J-1157	67	244.86	0.9
J-3120	67	461.28	3.2
J-2013	67	294.44	2.0
J-1070	67	343.88	0.9
J-3339	67	245.04	0.9
J-2356	67	244.98	2.2

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1071	67	344.06	2.0
J-3	66	245.40	0.9
J-620	66	446.00	2.1
J-1785	66	446.00	2.6
J-2436	66	245.33	2.1
J-2437	66	245.45	2.3
J-2928	66	245.43	0.9
J-3164	66	246.00	2.0
J-3058	66	245.89	2.2
J-1927	66	360.69	2.4
J-678	66	360.78	0.9
J-3175	66	246.37	2.3
J-3230	66	296.00	1.9
J-878	66	296.00	2.0
J-2149	66	296.00	2.6
J-351	66	246.59	0.9
J-1473	66	463.02	0.9
J-1425	66	246.72	0.9
J-568	66	296.21	2.0
J-352	66	246.65	2.0
J-2273	66	246.79	2.0
J-652	66	447.40	0.9
J-2117	66	296.38	2.3
J-121	66	246.90	0.9
J-120	66	246.94	0.9
J-1379	66	363.31	2.0
J-3165	66	247.23	2.0
J-2293	66	247.25	2.5
J-2431	66	296.48	1.9
J-476	66	246.98	0.9
J-316	66	246.69	2.4
J-390	66	247.02	0.9
J-2294	66	247.37	2.4
J-1478	66	447.69	0.9
J-964	66	247.19	0.9
J-2430	66	296.64	2.6
J-490	66	335.20	0.9
J-1437	66	247.21	0.9
J-2403	66	247.29	2.3
J-410NorthWater	66	247.13	2.2
J-3497	66	335.27	3.4
J-2099	66	247.22	0.9
J-2010	66	246.90	0.9
J-2784	66	246.62	3.2
J-2011	66	246.99	2.0
J-1843	66	346.33	2.2
J-2100	66	247.40	2.2
J-2404	66	247.60	2.1
J-2603	66	247.55	0.9
J-2968	66	296.93	0.9
J-2158	65	247.87	2.2
J-1636	65	247.33	2.2
J-526	65	246.98	2.0
J-2405	65	247.78	1.9
J-834	65	248.05	0.9
J-1934	65	247.12	1.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-822	65	247.48	0.9
J-3143	65	247.80	2.0
J-3118	65	297.46	2.4
J-2329	65	248.00	2.5
J-1216	65	248.05	0.9
J-2089	65	297.47	3.3
J-512	65	297.48	2.0
J-1215	65	248.10	0.9
J-2783	65	247.33	1.9
J-1009	65	248.15	0.9
J-2750	65	248.00	2.1
J-2493	65	248.13	0.9
J-2009	65	248.24	0.9
J-2492	65	248.21	1.9
J-1420	65	248.18	0.9
J-2751	65	248.24	0.9
J-1727	65	248.21	0.9
J-484	65	248.36	0.9
J-1421	65	248.25	2.0
J-2008	65	248.37	0.9
J-1010	65	248.45	0.9
J-2994	65	347.34	3.1
J-1591	65	336.49	2.0
J-1592	65	336.59	0.9
J-410	65	298.00	0.9
J-1844	65	347.48	2.8
J-2400	65	298.01	2.5
J-3237	65	347.50	2.3
J-3577	65	249.05	0.0
J-2216	65	347.65	2.7
J-2217	65	347.69	0.9
J-3447	65	469.07	0.9
J-3157	65	249.23	0.9
J-2304	65	249.46	0.9
J-2936	65	249.55	0.9
J-1998	65	348.42	2.3
J-3115	65	250.00	0.9
J-770	65	249.67	0.9
J-2775	65	249.65	0.9
J-3223	65	250.08	2.6
J-710	65	348.58	0.9
J-2937	65	249.71	2.0
J-1363	65	466.02	2.3
J-2537	65	249.81	0.9
J-1314	65	249.82	0.9
J-1266	65	249.82	0.9
J-72	65	249.82	0.9
J-1265	65	249.82	0.9
J-466	65	250.24	0.9
J-71	65	249.83	0.9
J-2538	65	249.83	0.9
J-3134	65	249.90	0.9
J-3578	65	250.04	0.0
J-3435	65	466.17	2.3
J-2283	65	250.31	2.0
J-1308	64	249.94	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2776	64	250.00	0.9
J-2369	64	250.00	0.9
J-2370	64	250.00	0.9
J-544	64	250.00	0.9
J-1815	64	250.00	0.9
J-1816	64	250.00	0.9
J-3093	64	250.00	0.9
J-113	64	250.00	0.9
J-155	64	250.00	0.9
J-991	64	250.00	0.9
J-992	64	250.00	0.9
J-1583	64	250.00	0.9
J-1995	64	250.00	0.9
J-1994	64	250.00	0.9
J-2806	64	250.00	0.9
J-286	64	250.00	0.9
J-287	64	250.00	0.9
J-3078	64	366.41	2.0
J-3212	64	338.39	3.1
J-2123	64	349.07	2.1
J-3236	64	349.08	0.9
J-2619	64	250.08	0.9
J-1111	64	250.08	2.0
J-29	64	250.09	0.9
J-30	64	250.10	0.9
J-1818	64	349.23	2.0
J-1112	64	250.17	2.0
J-3494	64	338.61	2.0
J-2095	64	250.53	0.9
J-1746	64	250.39	0.9
J-2311	64	250.64	2.4
J-570	64	250.63	0.9
J-2941	64	349.54	2.7
J-2389	64	338.92	2.9
J-3040	64	250.81	2.1
J-2310	64	250.86	2.0
J-1626	64	250.65	0.9
J-542	64	349.66	0.9
J-2363	64	250.78	1.9
J-2199	64	249.87	0.9
J-1044	64	251.63	0.9
J-2825	64	250.84	2.2
J-1045	64	251.71	0.9
J-1864	64	470.90	2.1
J-3503	64	250.00	0.9
J-1625	64	250.88	0.9
J-3252	64	451.51	2.1
J-666	64	250.07	0.9
J-1249	64	251.82	0.9
J-2364	64	251.01	0.9
J-2361	64	251.29	0.9
J-2864	64	250.96	0.9
J-2919	64	251.40	2.5
J-230	64	350.00	0.9
J-231	64	350.00	3.1
J-2420	64	251.16	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2300	64	251.57	0.9
J-2362	64	251.48	0.9
J-3145	64	251.57	0.9
J-2483	64	251.56	0.9
J-3097	64	251.61	2.6
J-2826	64	251.39	1.9
J-2419	64	251.44	2.0
J-556	64	251.81	0.9
J-2087	64	251.75	2.0
J-3446	64	471.51	0.9
J-2147	64	251.79	2.0
J-1652	64	251.55	0.9
J-1405	64	251.62	0.9
J-3224	64	367.71	3.1
J-886	64	251.90	0.9
J-2582	64	252.03	0.9
J-2371	64	251.89	0.9
J-448	64	251.94	0.9
J-1406	64	251.69	0.9
J-3096	64	252.00	2.3
J-2372	64	252.00	0.9
J-3231	64	251.78	0.9
J-2345	64	301.22	2.5
J-2344	64	301.27	0.9
J-1845	64	252.19	2.6
J-816	64	570.93	0.9
J-3485	64	251.56	0.9
J-3486	64	251.57	0.9
J-2920	64	252.36	0.9
J-2348	64	252.00	0.9
J-1449	64	252.00	0.9
J-1450	64	252.00	0.9
J-207	64	252.00	0.9
J-1372	64	252.00	0.9
J-400	64	251.68	0.9
J-2358	64	252.39	0.9
J-3117	64	251.78	0.9
J-2583	64	252.53	2.4
J-700	64	252.46	0.9
J-2119	64	368.53	2.0
J-2787	63	252.18	0.9
J-2486	63	252.67	2.0
J-2353	63	251.84	2.4
J-1104	63	252.77	2.0
J-1228	63	252.47	1.9
J-1630	63	452.82	0.9
J-3135	63	252.50	0.9
J-69	63	252.83	0.9
J-70	63	252.84	0.9
J-3270	63	472.35	0.9
J-1227	63	252.55	0.9
J-2220	63	252.68	1.9
J-2118	63	368.78	0.9
J-2359	63	252.72	1.9
J-1034	63	368.82	0.9
J-3482	63	252.52	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3285	63	351.43	2.9
J-1035	63	368.93	2.0
J-2219	63	252.86	2.0
J-452	63	302.00	0.9
J-2063	63	302.00	2.7
J-1839	63	351.60	2.7
J-2522	63	368.65	2.0
J-1257	63	253.31	2.0
J-1256	63	253.33	0.9
J-3234	63	252.92	0.9
J-2880	63	253.07	0.9
J-1838	63	351.77	0.9
J-2979	63	369.25	2.2
J-1454	63	368.81	0.9
J-263	63	453.45	0.9
J-554	63	253.27	0.9
J-2865	63	253.55	0.9
J-218	63	253.08	0.9
J-219	63	253.10	0.9
J-3361	63	253.85	0.9
J-2469	63	253.33	0.9
J-2505	63	302.45	2.0
J-1292	63	351.98	2.0
J-2111	63	253.40	0.9
J-1432	63	453.61	0.9
J-2995	63	352.00	0.9
J-1337	63	253.23	0.9
J-1380	63	254.00	2.0
J-2112	63	253.44	0.9
J-1235	63	253.26	0.9
J-2045	63	253.73	0.9
J-3137	63	254.00	0.9
J-2028	63	253.70	2.0
J-1291	63	352.10	2.1
J-2044	63	253.83	0.9
J-2141	63	252.64	2.7
J-2445	63	453.73	0.9
J-1262	63	369.18	2.3
J-2029	63	253.84	0.9
J-1502	63	369.26	0.9
J-2506	63	302.75	0.9
J-3355	63	302.78	0.9
J-1744	63	253.34	0.9
J-794	63	252.85	0.9
J-235	63	469.70	0.9
J-2319	63	302.89	1.9
J-1938	63	352.45	0.9
J-2710	63	253.49	0.9
J-1433	63	454.07	0.9
J-236	63	469.83	0.9
J-3100	63	253.94	0.9
J-278	63	369.50	2.8
J-2637	63	253.55	0.9
J-2062	63	352.55	2.8
J-1342	63	352.58	0.9
J-3155	63	254.64	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1341	63	352.65	2.0
J-782	63	303.14	0.9
J-279	63	369.67	0.9
J-2687	63	253.25	0.9
J-2296	63	254.00	0.9
J-2973	63	454.37	0.9
J-2295	63	254.00	0.9
J-2628	63	254.00	0.9
J-2357	63	254.00	0.9
J-2340	63	253.29	0.9
J-438	63	254.37	0.9
J-1210	63	254.39	0.9
J-740	63	352.89	0.9
J-3513	63	254.00	0.9
J-3487	63	253.50	2.0
J-2665	63	254.72	0.9
J-1654	63	254.09	0.9
J-1813	63	470.84	2.1
J-2686	63	253.59	2.0
J-2474	63	254.47	2.0
J-12	63	353.15	2.1
J-11	63	353.15	2.1
J-1901	63	254.83	2.3
J-1148	63	254.69	1.9
J-951	63	254.72	0.9
J-952	63	254.75	0.9
J-17	63	254.79	0.9
J-18	63	254.79	0.9
J-3238	63	471.01	2.3
J-1172	63	254.98	0.9
J-2085	63	255.00	0.9
J-2891	63	254.52	0.9
J-1885	62	573.53	0.9
J-2475	62	254.78	0.9
J-3475	62	256.00	3.2
J-2176	62	342.65	0.9
J-2874	62	254.00	0.9
J-3488	62	254.00	2.6
J-2086	62	255.20	0.9
J-2269	62	254.00	2.0
J-3244	62	256.00	0.9
J-2331	62	303.97	2.2
J-3050	62	255.21	2.1
J-3222	62	254.88	0.9
J-3476	62	256.00	1.9
J-2536	62	256.00	2.0
J-2347	62	304.00	2.8
J-2630	62	255.10	2.0
J-1604	62	353.58	0.9
J-2332	62	304.03	2.1
J-2978	62	353.63	2.1
J-3267	62	342.83	2.1
J-2888	62	254.84	1.9
J-778	62	304.12	0.9
J-1603	62	353.72	0.9
J-2511	62	256.00	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-602	62	255.21	0.9
J-2713	62	371.91	2.0
J-3496	62	342.97	0.9
J-560	62	342.98	0.9
J-3436	62	471.58	2.1
J-1505	62	255.38	0.9
J-3495	62	343.10	2.0
J-3034	62	354.00	0.9
J-1725	62	354.00	2.0
J-1724	62	354.00	0.9
J-1312	62	255.52	0.9
J-3008	62	255.53	2.1
J-1313	62	255.58	0.9
J-910	62	455.64	0.9
J-2707	62	255.62	0.9
J-2208	62	255.58	2.1
J-2264	62	255.57	2.1
J-3009	62	255.66	2.1
J-1765	62	256.31	2.0
J-3246	62	455.91	0.9
J-2722	62	256.00	2.4
J-1174	62	256.00	0.9
J-2660	62	256.00	2.1
J-1777	62	256.00	2.0
J-1168	62	256.00	0.9
J-2040	62	256.00	0.9
J-2041	62	256.00	0.9
J-2661	62	256.00	2.0
J-3303	62	255.42	0.9
J-3484	62	255.48	0.9
J-82	62	456.00	0.9
J-81	62	456.02	0.9
J-2207	62	255.88	2.1
J-3242	62	256.48	2.5
J-2706	62	255.98	0.9
J-1537	62	256.20	0.9
J-1719	62	354.53	2.4
J-2889	62	255.47	0.9
J-1536	62	256.36	0.9
J-1742	62	255.71	0.9
J-2565	62	256.72	2.0
J-1296	62	256.73	0.9
J-2903	62	574.85	0.9
J-2604	62	256.20	0.9
J-272	62	574.84	0.9
J-2432	62	256.65	0.9
J-3479	62	256.31	0.9
J-1295	62	256.80	2.5
J-3477	62	256.76	1.9
J-3180	62	354.88	2.1
J-904	62	256.86	0.9
J-616	62	305.36	0.9
J-458	62	256.48	0.9
J-3243	62	256.84	0.9
J-2577	62	256.68	0.9
J-3269	62	255.42	2.6

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-1628	62	255.98	0.9
J-2566	62	256.99	0.9
J-3162	62	256.43	0.9
J-2194	62	305.42	2.4
J-3478	62	256.93	0.9
J-2890	62	256.19	0.9
J-3481	62	256.51	0.9
J-1720	62	355.05	2.3
J-1853	62	256.11	0.9
J-2079	62	256.92	0.9
J-2807	62	256.21	0.9
J-2078	62	256.97	0.9
J-2290	62	256.59	2.0
J-1788	62	355.22	2.7
J-1611	62	355.25	0.9
J-3083	62	355.25	0.9
J-518	62	255.74	2.0
J-424	62	372.56	0.9
J-358	62	456.95	0.9
J-1612	62	255.82	2.0
J-1693	62	457.01	0.9
J-600	62	257.52	0.9
J-1610	62	355.49	0.9
J-1627	62	256.53	0.9
J-2576	62	257.25	0.9
J-2820	62	256.57	0.9
J-1429	62	256.00	0.9
J-1430	62	256.00	2.8
J-3183	62	256.00	4.3
J-2988	62	257.30	0.9
J-1385	62	373.75	0.9
J-2330	62	257.68	2.3
J-444	62	355.65	0.9
J-2289	62	257.07	2.2
J-1796	61	372.96	3.5
J-1852	61	256.77	0.9
J-1589	61	257.44	2.0
J-1590	61	257.45	2.6
J-2090	61	256.86	0.9
J-3101	61	257.55	0.9
J-1480	61	257.02	0.9
J-1676	61	257.02	0.9
J-628	61	356.00	0.9
J-2237	61	356.00	2.5
J-2810	61	356.00	2.0
J-2808	61	257.03	0.9
J-2429	61	306.49	2.4
J-1015	61	258.00	0.9
J-1016	61	258.00	0.9
J-339	61	258.00	0.9
J-340	61	258.00	0.9
J-917	61	258.00	0.9
J-918	61	258.00	0.9
J-1416	61	258.00	1.9
J-1417	61	258.00	0.9
J-1078	61	258.08	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2428	61	306.82	3.1
J-2813	61	256.00	0.9
J-1077	61	258.12	0.9
J-1264	61	257.56	0.9
J-2674	61	256.00	0.9
J-2673	61	256.00	2.2
J-1443	61	356.63	0.9
J-3296	61	356.64	0.9
J-3189	61	256.00	2.0
J-2231	61	257.17	2.5
J-1384	61	374.84	0.9
J-1442	61	356.70	0.9
J-190	61	356.71	1.9
J-3489	61	257.22	2.6
J-189	61	356.73	0.9
J-2714	61	374.95	1.9
J-1263	61	257.87	0.9
J-2814	61	256.00	2.1
J-630	61	255.85	0.9
J-3490	61	257.70	0.9
J-2131	61	259.01	0.9
J-1136	61	357.31	0.9
J-516	61	257.80	0.9
J-3055	61	256.36	0.9
J-508	61	259.12	0.9
J-3191	61	257.92	2.1
J-1916	61	259.25	0.9
J-1137	61	357.46	0.9
J-2174	61	373.96	2.8
J-956	61	258.00	1.9
J-957	61	258.00	3.6
J-2996	61	459.21	0.9
J-2809	61	357.67	0.9
J-3500	61	256.62	0.9
J-880	61	259.52	0.9
J-83	61	308.16	2.0
J-3188	61	257.08	2.0
J-84	61	308.17	0.9
J-1941	61	308.22	0.9
J-2871	61	259.21	2.0
J-1570	61	475.60	0.9
J-3357	61	308.28	0.9
J-293	61	357.89	0.9
J-994	61	375.37	2.0
J-292	61	357.91	0.9
J-1940	61	308.35	2.1
J-1373	61	259.66	0.9
J-1260	61	358.00	0.9
J-3081	61	358.00	0.9
J-1500	60	358.01	0.9
J-1501	60	358.05	0.9
J-1867	60	376.22	2.4
J-3129	60	376.22	2.2
J-696	60	374.63	0.9
J-2516	60	358.18	2.9
J-2669	60	257.15	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-712	60	578.36	0.9
J-3445	60	475.97	2.3
J-2904	60	578.36	0.9
J-3026	60	358.28	2.3
J-3171	60	257.54	2.2
J-738	60	258.48	0.9
J-714	60	258.88	0.9
J-1883	60	258.98	4.3
J-2596	60	259.07	0.9
J-3322	60	258.79	0.9
J-684	60	578.76	0.9
J-2374	60	257.39	0.9
J-939	60	259.10	0.9
J-938	60	259.11	0.9
J-486	60	260.40	0.9
J-2517	60	358.71	2.1
J-1188	60	460.33	0.9
J-2859	60	256.19	2.1
J-1509	60	578.91	0.9
J-3579	60	262.92	0.0
J-1189	60	460.41	0.9
J-1549	60	460.51	0.9
J-2485	60	259.31	2.1
J-2547	60	578.99	0.9
J-2597	60	259.32	0.9
J-2221	60	259.04	0.9
J-1946	60	259.04	0.9
J-354	60	259.41	0.9
J-2639	60	256.23	2.2
J-353	60	259.43	0.9
J-337	60	460.64	0.9
J-488	60	460.78	0.9
J-2790	60	260.80	1.9
J-997	60	460.79	0.9
J-2640	60	256.52	0.9
J-976	60	460.87	0.9
J-708	60	377.38	0.9
J-1486	60	359.38	0.9
J-2222	60	259.57	0.9
J-2292	60	256.74	0.9
J-1219	60	461.16	0.9
J-1220	60	461.21	0.9
J-2901	60	359.58	0.9
J-1529	60	477.04	0.9
J-3363	60	359.67	2.3
J-2860	60	256.90	2.2
J-3228	60	461.41	0.9
J-378	60	461.42	0.9
J-3172	60	258.93	2.0
J-2291	60	257.09	2.4
J-3260	60	261.51	0.9
J-1331	60	579.98	0.9
J-1606	60	378.04	1.9
J-1274	60	261.68	0.9
J-1487	60	360.04	0.9
J-2024	60	261.74	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2588	60	260.23	0.9
J-1492	60	461.75	0.9
J-1771	60	261.81	2.8
J-1275	60	261.81	0.9
J-3422	60	477.58	0.9
J-2023	60	261.86	0.9
J-1162	60	261.94	0.9
J-1605	60	378.39	2.3
J-1166	60	262.00	0.9
J-1629	60	262.00	0.9
J-248	59	360.43	0.9
J-680	59	378.58	2.0
J-398	59	260.67	0.9
J-1528	59	477.99	0.9
J-247	59	360.63	0.9
J-548	59	257.45	0.9
J-2305	59	257.47	2.2
J-1919	59	260.94	0.9
J-1878	59	257.54	0.9
J-1562	59	257.58	0.9
J-995	59	462.54	0.9
J-1563	59	257.65	2.1
J-546	59	258.00	2.1
J-1937	59	258.00	2.8
J-1674	59	361.17	2.1
J-3233	59	257.85	2.0
J-1489	59	361.17	0.9
J-1030	59	311.48	2.5
J-1239	59	478.60	0.9
J-301WestField	59	261.36	0.9
J-1424	59	462.92	2.4
J-1423	59	463.09	2.0
J-2797	59	261.59	0.9
J-1051	59	262.00	2.1
J-1052	59	262.00	2.8
J-1458	59	262.00	2.0
J-2902	59	361.69	0.9
J-3088	59	312.00	2.3
J-1812	59	312.00	2.0
J-3521	59	312.00	0.9
J-3003	59	312.00	2.6
J-2908	59	262.09	0.9
J-1753	59	263.70	2.1
J-2768	59	260.00	0.9
J-3305	59	262.49	1.9
J-2480	59	260.00	0.9
J-2647	59	312.69	2.1
J-2798	59	262.58	0.9
J-2479	59	260.06	2.0
J-2963	59	362.53	0.9
J-2409	59	380.74	2.0
J-2767	59	260.17	0.9
J-2073	58	362.79	0.9
J-2646	58	313.12	2.1
J-1687	58	264.67	0.9
J-1575	58	362.97	1.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2368	58	259.56	2.1
J-1695	58	480.55	2.5
J-1574	58	363.09	0.9
J-2367	58	259.65	2.0
J-2410	58	381.28	2.2
J-2074	58	363.14	0.9
J-1032	58	380.73	2.0
J-3315	58	265.33	0.9
J-1033	58	380.86	2.7
J-3241	58	265.12	2.1
J-532	58	259.97	2.0
J-2027	58	260.00	2.3
J-131	58	265.50	2.2
J-76	58	265.52	0.9
J-1471	58	265.29	2.2
J-334	58	363.62	1.9
J-2980	58	314.00	2.4
J-3069	58	481.18	2.6
J-335	58	363.69	0.9
J-2381	58	314.00	2.0
J-2382	58	314.00	1.9
J-1701	58	314.00	1.9
J-1470	58	265.39	2.0
J-3174	58	260.93	0.9
J-3416	58	481.64	2.3
J-1992	58	364.18	2.7
J-1193	58	481.68	0.9
J-2130	58	264.74	0.9
J-3414	58	482.01	0.9
J-872	58	261.33	0.9
J-2451	58	261.39	0.9
J-1935	58	261.47	2.0
J-2866	58	315.17	2.0
J-890	58	315.21	0.9
J-3184	58	364.90	2.1
J-1993	58	364.90	0.9
J-2129	58	265.06	0.9
J-2450	58	261.58	2.0
J-2258	58	262.18	2.0
J-2167	57	315.31	0.9
J-2738	57	365.01	0.9
J-2441	57	265.27	0.9
J-1097	57	466.72	0.9
J-1025	57	466.81	0.9
J-1267	57	482.63	0.9
J-716	57	262.47	0.9
J-1024	57	466.83	0.9
J-2867	57	315.61	2.1
J-1088	57	466.95	0.9
J-3254	57	315.71	0.9
J-1974	57	261.89	2.0
J-3418	57	482.91	0.9
J-2108	57	267.21	2.1
J-1975	57	262.09	0.9
J-3338	57	267.42	0.9
J-3161	57	262.16	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2442	57	265.81	0.9
J-1641	57	365.77	0.9
J-2107	57	267.51	2.0
J-2967	57	267.58	2.0
J-2948	57	365.91	0.9
J-644	57	262.43	0.9
J-492	57	267.76	0.9
J-222	57	366.00	0.9
J-2498	57	267.83	0.9
J-223	57	366.09	2.1
J-2143	57	262.62	2.2
J-1237	57	366.18	1.9
J-790	57	366.35	0.9
J-1809	57	366.37	2.5
J-2690	57	266.57	0.9
J-668	57	266.60	0.9
J-1670	57	366.48	2.0
J-446	57	266.69	0.9
J-1344	57	268.31	2.0
J-1412	57	366.76	0.9
J-1413	57	366.80	1.9
J-2756	57	263.11	2.4
J-1164	57	268.58	0.9
J-1856	57	356.46	3.8
J-1245	57	263.23	0.9
J-1244	57	263.29	0.9
J-1572	57	263.31	2.0
J-3295	57	267.25	0.9
J-2002	57	268.79	0.9
J-1573	57	263.33	0.9
J-3323	57	269.01	0.9
J-612	57	269.33	0.9
J-3334	57	268.85	0.9
J-3182	57	264.00	1.9
J-2003	57	268.94	0.9
J-102	56	317.62	0.9
J-103	56	317.64	0.9
J-2190	56	269.46	2.7
J-1049	56	356.85	0.9
J-1441	56	263.57	0.9
J-2940	56	264.00	0.9
J-1440	56	263.59	0.9
J-2755	56	263.74	2.4
J-1006	56	385.02	2.8
J-1644	56	263.78	0.9
J-1759	56	367.64	0.9
J-296	56	318.02	0.9
J-1760	56	367.78	2.0
J-1005	56	385.26	2.2
J-3158	56	270.14	2.0
J-3138	56	367.95	2.1
J-2921	56	367.98	2.0
J-2259	56	264.64	0.9
J-3041	56	368.00	2.0
J-1684	56	368.04	2.0
J-3276	56	385.16	2.6

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2260	56	264.79	0.9
J-980	56	485.64	0.9
J-3010	56	268.39	0.9
J-2831	56	264.89	0.9
J-2644	56	469.99	0.9
J-1898	56	368.37	2.1
J-868	56	470.08	0.9
J-1178	56	264.79	0.9
J-1179	56	264.82	2.0
J-923	56	368.53	0.9
J-3249	56	264.81	2.0
J-2766	56	318.94	0.9
J-1040	56	264.81	0.9
J-924	56	368.63	0.9
J-1280	56	264.86	2.0
J-144	56	264.89	2.3
J-2046	56	270.37	2.2
J-145	56	264.91	0.9
J-3253	56	470.34	2.1
J-191	56	264.93	2.8
J-1170	56	270.43	0.9
J-1073	56	470.40	0.9
J-1897	56	368.83	0.9
J-1892	56	470.49	0.9
J-2058	56	265.39	0.9
J-1637	56	470.53	0.9
J-2059	56	265.49	0.9
J-1059	56	265.34	2.2
J-1060	56	265.37	2.0
J-1456	56	265.43	2.4
J-229EurekaAve	56	359.13	3.5
J-2956	56	265.72	0.9
J-3181	56	265.78	1.9
J-1709	56	369.42	2.2
J-1087	56	471.17	0.9
J-2851	55	386.57	2.5
J-2855	55	266.00	2.0
J-426	55	266.00	0.9
J-2209	55	266.00	0.9
J-1608	55	266.00	0.9
J-2051	55	359.55	0.9
J-1607	55	266.00	2.1
J-1391	55	271.49	0.9
J-3218	55	270.00	0.9
J-1951	55	386.82	0.9
J-2007	55	359.74	2.1
J-1390	55	271.64	2.0
J-624	55	386.96	0.9
J-2573	55	271.70	2.4
J-3070	55	487.58	2.3
J-3240	55	387.15	2.1
J-768	55	370.15	0.9
J-2856	55	266.48	1.9
J-1778	55	370.22	2.7
J-2957	55	266.59	2.1
J-3061	55	388.10	2.4

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2852	55	387.80	2.4
J-852	55	360.69	0.9
J-1191	55	388.54	0.9
J-1476	55	472.89	0.9
J-1190	55	388.68	2.5
J-1477	55	473.08	2.2
J-1953	55	267.67	0.9
J-1942	55	371.67	0.9
J-3434	55	488.74	0.9
J-3506	55	272.00	1.9
J-3250	55	269.06	2.4
J-3192	55	489.28	0.9
J-983	55	488.85	0.9
J-1457	55	489.32	2.3
J-3042	54	371.89	2.0
J-1943	54	371.94	1.9
J-3419	54	489.61	0.9
J-896	54	268.30	0.9
J-2805	54	372.19	2.2
J-1841	54	272.46	2.0
J-2150	54	268.47	3.0
J-1751	54	272.86	2.5
J-1452	54	489.90	0.9
J-3469	54	268.04	1.9
J-1234	54	268.00	0.9
J-2105	54	268.00	2.1
J-1338	54	268.08	0.9
J-1233	54	268.08	0.9
J-1728	54	274.24	2.4
J-366	54	268.08	0.9
J-367	54	268.09	0.9
J-1048	54	273.09	0.9
J-1241	54	268.15	0.9
J-1047	54	273.21	2.5
J-2172	54	268.24	0.9
J-1144	54	273.30	0.9
J-1750	54	273.32	0.9
J-622	54	268.34	0.9
J-2173	54	268.45	0.9
J-1145	54	273.49	2.1
J-3318	54	391.25	1.9
J-2662	54	273.59	0.9
J-3217	54	268.63	0.9
J-1874	54	373.21	1.9
J-1270	54	373.27	1.9
J-1222	54	373.29	0.9
J-1690	54	273.78	2.8
J-504	54	269.68	2.5
J-1221	54	373.33	0.9
J-1952	54	275.24	0.9
J-1875	54	373.36	0.9
J-1271	54	373.39	0.9
J-2098	54	373.41	0.9
J-670	54	273.68	0.9
J-2608	54	373.50	0.9
J-1289	54	373.52	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-3415	54	491.09	0.9
J-1288	54	373.64	0.9
J-586	54	475.29	0.9
J-1808	54	274.25	2.3
J-947	54	274.28	0.9
J-368	54	275.71	0.9
J-1850	54	475.59	0.9
J-3235	54	269.88	2.1
J-3029	54	269.61	0.9
J-2753	54	374.10	0.9
J-1633	54	364.21	2.4
J-3420	54	491.64	2.7
J-2268	53	269.97	2.6
J-2842	53	269.97	2.1
J-2267	53	270.00	2.2
J-2104	53	270.00	0.9
J-2841	53	270.00	2.1
J-2103	53	270.00	1.9
J-987	53	491.76	0.9
J-1224	53	374.49	0.9
J-538	53	275.02	0.9
J-1632	53	364.72	2.0
J-1223	53	374.66	0.9
J-28	53	393.29	3.1
J-27	53	393.30	0.9
J-412	53	275.06	0.9
J-915	53	393.42	0.9
J-2654	53	365.06	2.0
J-2393	53	365.39	2.0
J-1688	53	277.09	2.1
J-3110	53	270.74	2.1
J-2653	53	365.59	3.2
J-2835	53	271.57	2.1
J-1689	53	277.56	1.9
J-1323	53	271.68	0.9
J-381	53	272.00	0.9
J-1957	53	272.00	2.2
J-2064	53	272.00	1.9
J-2065	53	272.00	2.6
J-2887	53	271.69	0.9
J-1324	53	271.73	0.9
J-2745	53	376.02	0.9
J-2886	53	271.79	2.2
J-2394	53	366.14	0.9
J-736	53	596.22	0.9
J-3156	53	278.55	2.1
J-282	53	272.02	0.9
J-2667	53	272.00	2.1
J-3132	53	376.30	1.9
J-2836	53	272.00	2.1
J-1453	53	596.50	0.9
J-1673	53	272.12	0.9
J-2668	53	272.18	2.3
J-1933	53	394.62	2.4
J-1393	52	393.92	2.6
J-1386	52	376.52	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-270	52	272.32	0.9
J-3341	52	271.86	2.1
J-2799	52	272.42	0.9
J-2578	52	366.81	0.9
J-1714	52	494.54	0.9
J-2944	52	376.82	0.9
J-1991	52	272.00	1.9
J-460	52	272.00	2.0
J-2203	52	272.00	0.9
J-2204	52	272.00	2.5
J-3443	52	494.65	0.9
J-1392	52	394.41	0.9
J-97	52	395.63	0.9
J-2175	52	494.78	2.1
J-3048	52	279.47	2.0
J-1002	52	377.28	2.3
J-606	52	479.00	0.9
J-1001	52	377.39	0.9
J-1259	52	394.92	0.9
J-1258	52	394.92	0.9
J-1987	52	273.13	0.9
J-1988	52	273.20	2.2
J-1798	52	495.30	0.9
J-1350	52	395.12	0.9
J-1741	52	479.31	0.9
J-2800	52	273.39	2.3
J-2746	52	377.73	0.9
J-940	52	377.94	0.9
J-2725	52	377.94	0.9
J-2724	52	377.97	0.9
J-1965	52	479.67	2.1
J-941	52	378.00	0.9
J-3025	52	495.43	2.0
J-1966	52	479.82	0.9
J-1349	52	395.57	2.0
J-582	52	396.56	2.0
J-2723	52	378.42	0.9
J-128	52	397.07	0.0
J-1842	52	397.36	0.3
J-2945	51	378.83	0.9
J-474	51	480.56	0.9
J-182	51	378.95	0.9
J-1949	51	274.00	2.3
J-1950	51	274.00	2.2
J-1596	51	274.00	2.1
J-1649	51	274.00	2.0
J-722	51	274.00	0.9
J-1595	51	274.00	2.1
J-181	51	379.00	0.9
J-1483	51	480.74	0.9
J-3311	51	481.00	2.1
J-132	51	379.35	0.9
J-133	51	379.44	0.9
J-2635	51	280.00	2.2
J-3190	51	280.03	2.1
J-960	51	281.51	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2905	51	275.08	2.1
J-3127	51	274.64	2.2
J-2626	51	275.18	2.7
J-2877	51	275.41	1.9
J-1896	51	275.43	0.9
J-2625	51	275.50	0.9
J-1439	51	497.77	0.9
J-2197	51	280.49	0.9
J-864	51	275.60	0.9
J-1036	51	380.21	0.9
J-780	51	275.86	2.1
J-1348	51	275.89	3.4
J-16	51	398.69	0.9
J-93	51	398.72	0.9
J-2196	51	280.93	0.9
J-3444	51	498.24	2.1
J-2636	51	280.99	2.2
J-2894	51	276.00	1.9
J-3293	51	482.24	0.9
J-2504	51	276.00	0.9
J-2503	51	276.00	2.1
J-2893	51	276.00	2.3
J-1694	51	281.21	2.1
J-3054	51	498.53	2.1
J-3014	51	399.15	1.9
J-2550	51	276.00	2.1
J-2182	51	276.00	2.0
J-854	50	281.66	2.2
J-2183	50	276.09	0.9
J-2774	50	381.30	0.9
J-3130	50	276.88	2.9
J-2649	50	276.30	2.0
J-2549	50	276.38	2.1
J-347	50	276.47	0.9
J-1358	50	276.50	0.9
J-1496	50	276.67	2.0
J-1065	50	276.68	0.9
J-1497	50	276.71	2.1
J-1064	50	276.74	1.9
J-1920	50	483.46	0.9
J-3038	50	277.51	2.2
J-2327	50	372.30	2.1
J-3090	50	400.60	2.4
J-3049	50	284.77	1.9
J-442	50	372.78	0.9
J-2757	50	277.55	2.1
J-1921	50	484.52	0.9
J-2833	50	284.92	0.9
J-1705	50	278.00	2.1
J-152	50	372.74	0.9
J-2462	50	278.00	2.1
J-151	50	372.79	0.9
J-2461	50	278.00	2.8
J-1738	50	278.05	2.1
J-850	50	278.09	0.9
J-2758	50	278.09	2.2

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2154	50	401.38	2.2
J-1067	50	372.87	2.8
J-2558	50	484.89	0.9
J-2155	50	401.52	0.9
J-1962	49	373.29	2.3
J-2952	49	285.45	0.9
J-10C	49	402.52	0.0
J-2663	49	485.27	0.9
J-2732	49	278.61	2.1
J-1325	49	373.40	0.9
J-1961	49	373.66	2.5
J-2731	49	278.75	2.1
J-3259	49	402.04	0.9
J-1326	49	373.57	2.2
J-2621	49	278.82	0.9
J-3141	49	278.91	2.1
J-402	49	402.20	0.9
J-2139	49	286.41	0.9
J-2152	49	402.35	2.0
J-TwainMiddleSchool	49	286.15	0.9
J-1011	49	403.31	0.0
J-2140	49	286.62	2.4
J-2620	49	279.21	0.9
J-3275	49	286.12	0.9
J-1118	49	286.50	2.2
J-2033	49	374.28	2.1
J-2306	49	279.52	2.2
J-1519	49	502.23	0.9
J-1117	49	286.69	0.9
J-1543	49	374.43	2.0
J-150	49	374.44	2.0
J-1302	49	279.68	0.9
J-2032	49	374.47	2.6
J-3438	49	502.38	3.0
J-2490	49	287.27	0.9
J-2458	49	287.05	2.2
J-1540	49	385.11	0.9
J-3297	49	280.00	2.1
J-2832	49	287.18	2.1
J-2481	49	285.66	2.0
J-1139	49	287.33	0.9
J-3271	49	375.53	2.1
J-2066	49	375.55	0.9
J-2735	49	375.54	2.0
J-1140	48	287.52	2.4
J-450	48	287.79	0.9
J-2491	48	288.19	0.9
J-3071	48	286.21	2.0
J-3140	48	280.93	2.6
J-392	48	376.05	0.9
J-2779	48	281.18	2.3
J-41	48	403.76	2.2
J-42	48	403.77	2.2
J-2720	48	288.82	0.9
J-2977	48	386.50	1.9
J-3264	48	281.51	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-808	48	488.18	0.9
J-908	48	286.92	0.9
J-2780	48	281.68	0.9
J-1613	48	281.71	2.2
J-2934	48	404.34	0.9
J-408	48	281.79	0.9
J-922	48	282.49	0.9
J-2721	48	289.42	2.1
J-2418	48	289.41	2.2
J-2816	48	282.00	2.1
J-2815	48	282.00	2.2
J-804	48	288.67	2.0
J-1491	48	282.80	2.2
J-2838	48	489.00	0.9
J-2054	48	289.49	0.9
J-2734	48	377.43	2.4
J-2411	48	289.41	2.4
J-268	48	289.96	0.9
J-3039	47	283.61	2.1
J-3017	47	290.18	0.9
J-632	47	290.73	0.9
J-3439	47	506.14	2.0
J-984	47	506.38	0.9
J-2971	47	503.76	0.0
J-2178	47	284.18	2.4
J-1114	47	284.28	0.9
J-1113	47	284.33	2.4
J-2179	47	284.39	2.0
J-288	47	284.42	0.9
J-289	47	284.44	1.9
J-838	47	491.66	0.9
J-614	47	491.92	0.9
J-3332	46	285.06	2.9
J-197	46	285.31	2.1
J-196	46	285.34	0.9
J-2138	46	492.32	0.9
J-2034	46	492.32	0.9
J-3333	46	285.50	0.9
J-1205	46	285.61	0.9
J-1206	46	285.65	0.9
J-2543	46	285.68	1.9
J-2544	46	285.68	2.5
J-954	46	391.02	0.9
J-953	46	391.03	0.9
J-1810	46	285.76	1.9
J-1533	46	285.79	0.9
J-1152	46	285.84	0.9
J-1153	46	285.87	0.9
J-1733	46	391.26	1.9
J-1989	46	508.72	0.9
J-1142	46	293.54	0.9
J-1682	46	292.09	2.3
J-1143	46	293.70	0.9
J-246	46	391.79	0.9
J-245	46	391.84	0.9
J-1068	46	392.07	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2837	45	494.70	0.9
J-146	45	287.87	0.9
J-49	45	287.87	1.9
J-104	45	287.87	0.9
J-50	45	287.89	0.9
J-1830	45	383.39	2.5
J-3051	45	288.00	0.9
J-1829	45	383.59	2.5
J-989	45	510.81	0.9
J-3113	45	289.17	2.3
J-2500	45	411.13	0.9
J-3423	45	510.99	2.0
J-2974	45	511.00	0.9
J-2453	45	295.75	0.9
J-3421	45	511.23	2.7
J-373	45	288.62	0.9
J-374	45	288.64	2.8
J-3033	45	511.66	0.9
J-575	45	614.76	0.9
J-2499	45	412.14	2.2
J-3257	45	412.23	3.2
J-2913	45	614.92	0.9
J-1229	45	394.89	2.1
J-1115	45	296.91	0.9
J-1614	44	297.08	0.9
J-2990	44	289.77	2.0
J-1039	44	297.17	0.9
J-1546	44	615.36	0.9
J-1615	44	297.25	0.9
J-1038	44	297.27	0.9
J-2736	44	297.26	0.9
J-1230	44	395.29	0.9
J-3015	44	289.98	0.9
J-1650	44	297.45	0.9
J-3072	44	296.25	2.0
J-3221	44	291.04	2.5
J-2742	44	396.49	0.9
J-23	44	415.01	3.1
J-24	44	415.01	0.9
J-3352	44	386.80	3.2
J-1426	44	415.07	2.2
J-744	44	291.59	0.9
J-2061	44	291.62	1.9
J-2989	44	291.94	2.3
J-3032	43	298.71	2.2
J-2651	43	416.05	1.9
J-2553	43	499.77	0.9
J-3265	43	416.62	0.9
J-1300	43	389.31	2.8
J-1093	43	398.38	0.9
J-3620	43	500.00	0.0
J-2466	43	300.55	2.4
J-2914	43	619.06	0.9
J-198	43	300.79	0.9
J-3076	43	300.86	2.1
J-1362	43	301.09	2.0

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2124	43	294.00	1.9
J-1277	43	300.81	0.9
J-1276	43	300.96	1.9
J-2652	43	417.76	2.1
J-3074	42	418.21	2.0
J-3077	42	301.59	2.1
J-2352	42	302.84	2.6
J-1365	42	417.43	0.9
J-1021	42	417.47	3.2
J-1022	42	417.50	0.9
J-2467	42	301.78	2.0
J-291	42	418.51	2.7
J-290	42	418.56	0.9
J-3089	42	302.20	2.6
J-862	42	303.57	0.9
J-3312	42	502.25	2.1
J-608	42	502.51	0.9
J-1811	42	502.54	2.0
J-3193	42	297.33	2.2
J-3131	42	297.12	2.1
J-203	42	419.29	0.9
J-2036	41	302.59	2.2
J-2972	41	516.85	0.0
J-654	41	302.98	0.9
J-436	41	504.33	0.9
J-2015	41	393.14	2.4
J-345	41	305.92	0.9
J-638	41	304.89	0.9
J-888	41	393.44	0.9
J-1046	41	306.08	2.0
J-2052	41	394.28	0.9
J-2060	41	305.76	2.1
J-136	41	306.22	0.9
J-321	41	306.31	2.1
J-2053	40	394.64	2.6
J-2497	40	394.70	2.9
J-186	40	421.89	0.9
J-2863	40	308.31	1.9
J-33	40	307.10	0.9
J-34	40	307.10	0.9
J-1494	40	506.70	0.9
J-3151	40	308.15	2.2
J-1079	40	309.22	0.9
J-1522	40	307.42	2.1
J-1080	40	309.31	0.9
J-48	40	309.43	0.9
J-1781	40	307.60	0.9
J-47	40	309.43	2.0
J-1415	40	308.43	1.9
J-1523	40	308.02	0.9
J-350	40	308.52	0.9
J-349	40	308.52	0.9
J-2983	40	310.12	2.1
J-1414	40	308.63	0.9
J-3608	39	523.09	0.0
J-3356	39	397.97	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2785	39	397.91	2.0
J-63	39	424.47	0.9
J-64	39	424.53	0.9
J-2288	39	398.32	0.9
J-2634	39	398.49	0.9
J-45	39	309.88	2.1
J-46	39	309.89	0.9
J-3346	39	309.12	2.0
J-2933	39	309.24	0.9
J-2287	39	399.13	1.9
J-2703	39	399.23	0.9
J-3335	39	399.58	0.9
J-1758	39	399.26	2.1
J-1757	39	399.32	0.9
J-2702	39	399.77	0.9
J-3428	38	525.47	0.9
J-2115	38	399.93	2.3
J-1703	38	525.51	0.9
J-927	38	525.56	0.9
J-2075	38	399.64	0.9
J-1304	38	399.75	0.9
J-784	38	311.16	0.9
J-3607	38	526.00	0.0
J-3327	38	400.05	1.9
J-2548	38	313.84	2.1
J-2317	38	400.37	2.0
J-572	38	400.85	0.9
J-978	38	527.00	0.9
J-1133	38	314.14	0.9
J-1132	38	314.24	2.4
J-2318	38	400.63	2.3
J-1159 Oak Street	38	311.94	3.0
J-3353	38	314.41	0.9
J-3225	38	400.82	2.1
J-3440	38	527.62	2.0
J-3219	38	303.15	2.2
J-3094	38	429.42	1.9
J-2113	37	316.29	2.0
J-1460	37	317.95	2.2
J-3185	37	530.04	0.9
J-1530	37	316.74	0.9
J-3427	37	529.73	0.9
J-1550	37	530.45	2.1
J-1531	37	317.00	0.9
J-1849	36	530.06	2.2
J-1551	36	530.67	0.9
J-1467	36	530.31	0.9
J-1726	36	530.47	2.2
J-3114	36	315.86	2.3
J-1466	36	530.58	0.9
J-3580	36	320.08	0.0
J-3256	36	433.26	3.0
J-1668	36	532.00	0.9
J-1721	35	532.26	2.1
J-1667	35	532.52	0.9
J-3226	35	406.73	2.1

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-2946	35	407.52	0.9
J-618	35	320.14	2.0
J-3281	35	531.18	0.9
J-2932	35	318.78	2.0
J-1316	35	519.26	2.7
J-1409	35	534.89	0.9
J-3426	35	534.95	2.0
J-906	34	638.39	0.9
J-1527	34	638.91	0.9
J-2947	34	409.88	0.9
J-1677	34	535.54	0.9
J-3247	34	438.08	2.0
J-2789	34	438.09	2.1
J-3467	34	534.45	0.9
J-2423	34	438.58	0.9
J-2096	33	322.20	2.0
J-3073	33	438.90	2.0
J-2424	33	439.31	3.0
J-1601	33	641.12	2.2
J-1119	33	439.63	0.9
J-31	33	439.69	0.9
J-32	33	439.69	0.9
J-3313	33	642.27	2.2
J-2752	32	441.91	2.7
J-9	32	442.58	0.9
J-2771	32	526.46	2.6
J-1180	31	541.83	0.9
J-3429	31	541.86	0.9
J-2346	31	541.94	0.9
J-734	31	527.42	0.9
J-3350	31	527.51	0.9
J-281	31	542.11	0.9
J-1181	31	542.25	0.9
J-3431	30	542.56	0.9
J-3349	30	542.87	0.9
J-52	30	530.51	0.9
J-277	30	530.71	2.0
J-276	30	530.86	0.9
J-2531	26	538.79	1.9
J-2747	26	539.83	0.0
J-1498	26	539.92	0.0
J-2308	26	539.93	0.0
J-1499	26	539.95	0.0
J-1665	26	553.78	0.9
J-3430	26	554.00	0.9
J-405	25	540.98	1.9
J-2309	25	541.29	0.0
J-3507	25	542.50	0.0
J-3523	24	545.00	0.0
J-3524	24	545.00	0.0
J-3525	24	545.00	0.0
J-3360	23	353.49	2.2
J-3344	22	353.86	0.9
J-3152	20	566.76	0.0
J-2563	19	556.50	0.9
J-2546	18	557.13	0.9

FlexTable: Junction Table (SilvertonWater_Oct27_2010.wtg)

Current Time: 0.000 hours

Label	Pressure (psi)	Elevation (ft)	Demand (gpm)
J-142	18	557.53	0.9
J-143	18	557.61	0.9
J-3266	12	376.88	3.6
J-2824	12	584.17	0.0
J-2763	12	585.87	0.0
J-2229	11	586.02	0.0
J-1402	11	586.53	0.0
J-3432	11	586.87	0.0
J-3433	11	587.01	0.0
J-3095	10	588.31	0.0
J-3396	5	397.00	0.0
J-3395	5	397.00	0.0
J-3394	5	397.00	0.0
J-2696	5	397.61	0.0
J-3124	3	400.55	2.2
J-3393	3	402.12	0.0
J-139	3	402.75	0.0
J-2339	1	405.76	0.0

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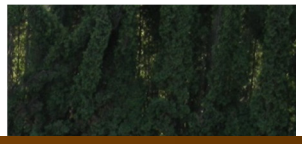
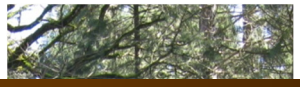
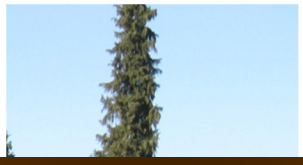
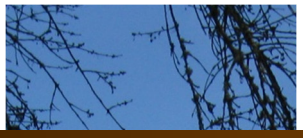
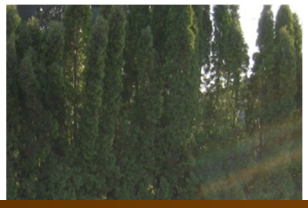
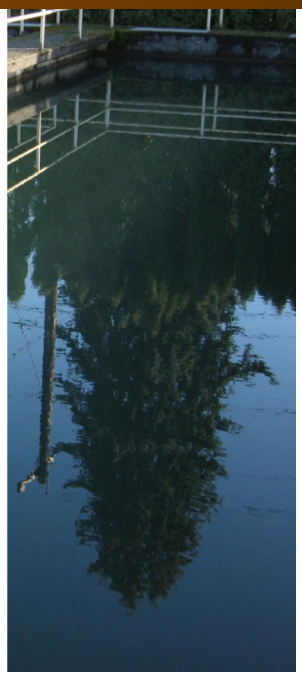






APPENDIX E–WATER QUALITY DATA



KELLER associates

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City of Silverton
Water Master Plan
Water Quality Data - Monthly Statistics

	Temperature (Celsius)				pH						Turbidity (NTU)						Alkalinity	
	Raw Water		Treated Water		Raw Water		Treated Water				Raw Water		Treated Water				Raw Water	
Month	High	Low	High	Low	High	Low	High (OP)	High (NP)	Low (OP)	Low (NP)	High	Low	High (OP)	High (NP)	Low (OP)	Low (NP)	High	Low
Jan-08	9.0	5.5	8.5	5.5	7.51	7.21	7.09	7.04	6.43	6.16	7.022	0.904	0.062	0.178	0.054	0.038	11.7	10.0
1-Feb	7.5	6.0	8.0	6.0	7.52	7.19	7.06	6.93	6.55	5.00	5.078	0.813	0.096	0.076	0.049	0.036	13.7	10.8
Mar-08	8.0	7.0	9.0	7.0	7.54	7.04	6.97	7.13	6.34	6.24	4.894	0.752	0.052	0.370	0.046	0.036	11.5	9.5
Apr-08	9.0	7.0	9.5	7.5	7.54	7.21	7.00	7.02	6.53	6.39	1.478	0.899	0.050	0.050	0.047	0.037	12.0	9.3
1-May	13.5	8.0	14.0	9.0	7.51	7.08	6.90	6.86	6.43	6.22	4.112	1.019	0.099	0.083	0.047	0.036	10.3	9.3
Jun-08	17.0	9.5	16.5	10.0	7.55	6.72	6.92	6.68	6.37	6.10	3.168	1.063	1.280	0.051	0.049	0.037	10.4	9.3
Jul-08	18.5	15.0	18.0	15.0	7.61	7.21	7.08	6.97	6.81	6.61	1.781	0.761	0.180	0.063	0.052	0.039	17.7	13.5
1-Aug	20.5	16.0	20.0	16.0	7.64	7.22	7.10	6.99	6.40	6.38	3.637	0.779	0.134	0.161	0.030	0.039	19.7	15.7
Sep-08	16.5	13.0	16.5	14.0	7.78	7.22	6.98	6.94	6.59	6.61	1.149	0.641	0.049	0.093	0.028	0.033	23.0	16.9
1-Oct	15.0	9.0	15.0	9.5	7.85	7.00	7.05	6.71	6.33	5.90	7.888	0.421	0.660	0.052	0.027	0.037	16.0	13.3
Nov-08	11.5	7.5	11.5	8.0	7.42	6.84	6.82	7.16	5.11	5.24	35.000	0.594	3.509	0.168	0.028	0.023	13.3	10.8
Dec-08	9.5	4.0	9.5	5.0	7.90	6.93	7.05	6.48	6.11	5.15	18.860	0.758	0.196	0.099	0.020	0.025	14.1	12.0
Jan-09	9.0	3.5	10.0	5.0	7.39	6.78	7.07	7.16	5.74	5.08	71.800	0.814	0.089	0.097	0.021	0.034	13.2	7.3
Feb-09	7.0	6.0	7.0	6.0	7.41	7.11	6.98	7.30	6.46	6.16	13.148	0.673	0.032	0.055	0.021	0.032	13.5	11.4
Mar-09	8.5	6.5	8.5	6.5	7.58	6.94	6.99	6.88	6.41	5.99	7.626	1.060	48.000	0.069	0.022	0.032	12.2	10.4
Apr-09	11.0	7.5	10.5	7.5	7.40	7.01	7.73	7.04	6.32	6.10	2.160	0.828	0.033	0.036	0.023	0.029	12.3	10.0
May-09	16.0	10.0	15.0	10.0	7.38	6.99	7.26	6.90	6.28	6.21	3.550	1.030	0.079	0.340	0.025	0.031	13.8	11.0
Jun-09	16.5	14.0	16.5	14.5	7.93	7.21	7.95	7.06	6.72	6.41	2.237	0.851	0.035	0.045	0.026	0.029	18.3	14.1
Jul-09	22.0	15.0	22.0	16.5	7.66	7.21	7.04	6.81	6.73	6.49	1.358	0.751	0.072	0.059	0.025	0.028	19.7	18.0
Aug-09	21.5	16.5	21.5	17.0	7.74	7.25	7.10	7.41	6.70	6.52	1.492	0.603	0.032	0.518	0.026	0.029	22.9	21.8
Sep-09	18.5	13.5	18.0	14.0	8.45	7.18	7.21	8.07	6.73	5.68	1.245	0.717	0.055	0.338	0.028	0.030	25.3	21.6
Oct-09	14.0	10.0	14.5	11.0	8.37	7.10	7.23	8.29	6.53	5.16	3.227	0.543	0.070	0.292	0.024	0.029	24.1	20.4
Nov-09	13.0	7.5	11.5	8.5	7.41	6.89	6.90	6.44	5.60	5.06	6.745	0.458	0.090	0.247	0.025	0.038	13.6	10.0
Dec-09	9.0	3.5	9.5	4.5	7.41	6.79	6.89	6.44	6.51	5.39	4.693	0.460	0.291	0.129	0.025	0.036	13.8	10.2
Jan-10	9.5	7.0	10.0	7.5	7.40	6.96	6.88	6.49	6.26	5.47	7.830	1.025	0.055	36.000	0.025	0.035	11.9	9.5
Feb-10	9.0	7.5	9.0	7.5	7.43	6.87	6.87	7.33	6.46	6.04	4.210	0.027	0.029	0.042	0.026	0.035	13.4	11.6
Mar-10	10.0	7.0	9.5	7.6	7.50	6.88	6.96	6.82	5.75	5.81	16.000	0.072	0.036	0.159	0.027	0.035	14.1	7.5
Apr-10	11.0	9.0	11.0	8.5	7.41	6.79	6.96	6.51	6.13	5.71	3.550	0.707	51.000	0.053	0.030	0.034	12.6	10.6
May-10	13.0	9.5	12.5	10.0	7.50	7.02	6.91	6.67	6.18	6.05	2.346	0.649	0.340	0.051	0.033	0.032	14.8	13.0
Jun-10	16.0	11.5	15.5	12.0	7.45	6.65	6.85	6.76	6.10	5.88	10.350	1.050	0.055	0.053	0.036	0.036	15.5	11.3
Jul-10	19.0	14.0	18.5	14.5	7.56	7.17	6.95	6.89	6.68	6.51	1.692	0.821	0.048	0.073	0.029	0.037	18.6	17.0
Aug-10	20.0	15.0	19.5	15.5	7.60	7.32	7.39	7.07	6.81	6.61	7.470	0.293	0.038	0.074	0.028	0.039	20.8	19.4
Sep-10	17.5	14.0	17.0	14.5	8.25	7.31	6.98	7.04	6.90	6.31	6.890	0.652	0.150	0.151	0.030	0.040	21.5	13.9
Oct-10	15.5	10.0	16.0	11.0	7.86	6.95	7.19	6.91	6.16	5.70	5.525	0.348	0.217	0.235	0.029	0.040	20.6	15.5
Nov-10	12.0	8.5	12.0	10.0	7.30	6.63		6.07		5.49	4.790	0.868		0.059		0.044	10.5	10.5

OP = Old Plant (Plant 1) NP = New Plant (Plant 2) Data may not have been reported correctly.

City of Silverton
Water Master Plan
Water Quality Data

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
01/01/2008	7.5	7.5	7.34		6.37	1.479		0.0390	
01/02/2008	8.0	8.0	7.49		6.52	1.489		0.0450	11.7
01/03/2008	8.0	8.0	7.41		6.43	1.757		0.0390	
01/04/2008	8.0	8.0	7.25		6.42	3.739		0.0380	
01/05/2008	8.0	8.0	7.33		6.49	2.783		0.0440	
01/06/2008	7.5	7.5	7.34		6.44	2.885		0.0500	
01/07/2008	7.5	7.5	7.35		6.35	2.048		0.0410	
01/08/2008	8.0	8.5	7.34		6.52	1.8		0.0390	
01/09/2008	8.0	8.0	7.40		6.44	4.259		0.0400	10.0
01/10/2008	7.5	8.0	7.36		6.46	3.493		0.0430	
01/11/2008	8.0	8.0	7.29	6.43	6.40	7.022	0.0540	0.0540	
01/12/2008	9.0	8.5	7.25		6.16	4.878		0.0450	
01/13/2008	9.0	8.5	7.32		6.20	3.094		0.0420	
01/14/2008	8.0	8.0	7.31		6.31	2.092		0.0420	
01/15/2008	8.0	8.0	7.31	6.55	6.37	2.123		0.0420	10.5
01/16/2008	7.0	7.0	7.32	6.78	6.42	1.9		0.0410	
01/17/2008	7.0	7.0	7.30	6.58	6.47	1.639		0.0480	
01/18/2008	7.0	7.0	7.27		6.71	1.38		0.0480	
01/19/2008	7.0	7.0	7.32		6.60	1.162		0.0560	
01/20/2008	7.5	7.0	7.21		6.73	1.142		0.0760	
01/21/2008	7.0	6.5	7.25		6.73	0.904		0.0450	
01/22/2008	6.0	6.5	7.43		6.77	1.1		0.0440	11.7
01/23/2008	6.0	6.0	7.49		6.80	1.04		0.0510	
01/24/2008	5.5	6.0	7.47		6.89	0.924		0.0700	
01/25/2008	5.5	5.5	7.39		6.85	0.92		0.0940	
01/26/2008	6.0	6.0	7.29		6.82	0.975		0.0920	
01/27/2008	6.5	6.5	7.24		6.92	1.202		0.1780	
01/28/2008	6.0	6.0	7.33		6.73	2.227		0.0650	
01/29/2008	6.0	5.5	7.37	6.81	6.95	2.79		0.0960	10.8
01/30/2008	6.0	6.0	7.51		6.99	1.78		0.0730	
01/31/2008	6.0	6.0	7.41	7.09	7.04	1.733	0.0620	0.0520	
02/01/2008	6.0	6.0	7.22	6.97	6.93	5.078	0.0570	0.0760	
02/02/2008	6.0	6.0	7.33	6.94	6.91	2.627	0.0570		
02/03/2008	6.5	6.5	7.30	7.06	6.90	3.192	0.0960	0.0490	
02/04/2008	7.0	6.0	7.40	7.00	6.82	2.378	0.0540	0.0440	
02/05/2008	7.0	6.5	7.50	6.99	6.75	1.976	0.0520	0.0450	13.7
02/06/2008	6.5	6.5	7.49	7.00	6.82	1.778	0.0510	0.0420	
02/07/2008	6.5	6.5	7.52	7.01	6.74	1.657	0.0530	0.0440	
02/08/2008	7.0	7.0	7.19	6.81	6.59	2.919	0.0530	0.0520	
02/09/2008	7.0	7.2	7.33	6.78	6.52	1.995	0.0500	0.0400	
02/10/2008	7.5	7.2	7.39	6.74	6.55	1.727	0.0510	0.0390	
02/11/2008	7.5	7.5	7.37	6.82	6.53	1.969	0.0500	0.0410	
02/12/2008	7.5	7.5	7.34	6.78	6.59	1.647	0.0500	0.0400	11.3
02/13/2008	7.5	7.0	7.39	6.89	6.63	1.422	0.0500	0.0380	
02/14/2008	7.0	7.0	7.39	6.85	6.62	1.471	0.0500	0.0390	
02/15/2008	7.0	7.0	7.40	6.85	6.56	1.254	0.0500	0.0400	
02/16/2008	7.0	7.0	7.24	6.84	5.00	1.854	0.0500	0.0380	
02/17/2008	7.0	7.0	7.30	6.82	6.44		0.0500	0.0370	
02/18/2008	7.0	7.0	7.33	6.85	6.51	0.885	0.0500	0.0380	
02/19/2008	7.0	7.0	7.45	6.99	6.62	1.009	0.0500	0.0380	12.7
02/20/2008	7.0	7.0	7.52	6.93	6.58	0.947	0.0500	0.0370	
02/21/2008	7.5	7.5	7.41	6.95	6.50	1.004	0.0500	0.0370	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
02/22/2008	7.0	7.0	7.35	6.94	6.63	0.932	0.0500	0.0370	
02/23/2008	7.0	7.0	7.21	6.69	6.53	0.91	0.0500	0.0380	
02/24/2008	7.0	7.5	7.40	6.84	6.55	0.869	0.0500	0.0370	
02/25/2008	7.5	7.5	7.40	6.76	6.45	0.926	0.0500	0.0360	
02/26/2008	7.5	7.0	7.43	6.84	6.53	0.945	0.0490	0.0370	
02/27/2008	7.5	7.5	7.41	6.81	6.50	0.813	0.0490	0.0370	
02/28/2008	7.0	7.0	7.48	6.55	6.28	0.89	0.0500	0.0370	10.8
02/29/2008	7.5	8.0	7.48	6.80	6.48	0.825	0.0500	0.0370	
03/01/2008	8.0	8.0	7.22	6.69	6.46	0.948	0.0500	0.0360	
03/02/2008	7.5	8.0	7.17	6.58	6.36	1.691	0.0500	0.3700	
03/03/2008	7.0	8.0	7.39	6.74	6.34	1.078	0.0500	0.0390	
03/04/2008	7.0	7.5	7.44	6.76	6.42	0.949	0.0520	0.0430	
03/05/2008	7.0	7.0	7.46	6.77	6.46	0.846	0.0490	0.0410	
03/06/2008	7.5	7.5	7.28	6.71	6.30	0.759	0.0490	0.0480	
03/07/2008	8.0	7.5	7.31	6.72	6.43	0.805	0.0490	0.0540	
03/08/2008	7.5	7.5	7.54	6.81	6.65	0.752	0.0500	0.0380	
03/09/2008	7.5	7.0	7.47	6.80	6.69	1.156	0.0490	0.0480	
03/10/2008	7.5	7.5	7.46	6.82	6.68	0.78	0.0490	0.0370	
03/11/2008	7.5	8.0	7.30	6.73	6.68	0.779	0.0490	0.0370	
03/12/2008	8.0	8.0	7.34	6.61	6.54	1.072	0.0490	0.0380	9.5
03/13/2008	7.5	8.0	7.36	6.64	6.63	0.927	0.0490	0.0370	
03/14/2008	7.5	8.0	7.31	6.59	6.51	1.713	0.0490	0.0380	
03/15/2008	7.5	8.0	7.29	6.58	6.57	1.941	0.0490	0.0390	
03/16/2008	7.5	8.0	7.35	6.68	6.58	2.079	0.0480	0.0410	
03/17/2008	7.5	7.5	7.45	6.77	6.63	1.552	0.0480	0.0390	
03/18/2008	8.0	8.0	7.44	6.78	6.60	1.392	0.0480	0.0390	11.5
03/19/2008	8.0	8.0	7.25	6.34	6.32	4.894	0.0470	0.0390	
03/20/2008	7.5	7.5	7.29	6.62	6.24	1.644	0.0480	0.0670	
03/21/2008	8.0	8.0	7.50	6.70	6.56	1.328	0.0470	0.0380	
03/22/2008	8.0	8.0	7.30	6.67	6.52	1.346	0.0470	0.0390	
03/23/2008	8.0	9.0	7.26	6.75	6.65	1.15	0.0470	0.0400	
03/24/2008	8.0	8.0	7.08	6.76	6.64	1.43	0.0460	0.0390	
03/25/2008	8.0	8.0	7.19	6.69	6.80	1.142	0.0480	0.0380	
03/26/2008	7.5	7.5	7.34	6.85	6.98	0.967	0.0470	0.0380	
03/27/2008	7.0	7.5	7.32	6.91	6.79	1.941	0.0470	0.0410	
03/28/2008	7.5	8.0	7.41	6.97	6.79	1.337	0.0470	0.0400	
03/29/2008	7.0	7.5	7.04	6.78	6.68	1.423	0.0480	0.0410	
03/30/2008	7.0	7.0	7.32	6.81	7.13	1.187	0.0480	0.0410	
03/31/2008	7.0	7.5	7.51	6.87	6.75	1.155	0.0480	0.0410	
04/01/2008	7.5	7.5	7.49	6.91	6.85	1.117	0.0470	0.0400	12.0
04/02/2008	7.0	7.5	7.52	6.91	6.81	1.065	0.0470	0.0410	
04/03/2008	7.5	7.5	7.54	6.89	6.79	1.09	0.0470	0.0400	
04/04/2008	7.5	7.5	7.53	6.91	6.76	1.058	0.0480	0.0390	
04/05/2008	8.0	8.0	7.31	6.80	6.80	1.288	0.0480	0.0410	
04/06/2008	8.0	8.5	7.30	6.81	6.76	1.109	0.0490	0.0450	
04/07/2008	8.0	7.5	7.46	6.83	6.51	1.478	0.0480	0.0490	
04/08/2008	8.0	8.0	7.48	6.80	6.73	1.365	0.0490	0.0430	10.5
04/09/2008	7.5	8.0	7.39	6.81	6.73	1.229	0.0480	0.0430	
04/10/2008	8.0	8.0	7.48	6.85	6.77	1.27	0.0480	0.0390	
04/11/2008	8.0	8.0	7.46	6.82	6.74	1.028	0.0480	0.0400	
04/12/2008	9.0	8.5	7.45	6.86	6.76	1.422	0.0480	0.0390	
04/13/2008	8.5	9.0	7.48	6.89	6.70	1.094	0.0480	0.0390	
04/14/2008	8.5	8.5	7.48	6.82	6.64	1.232	0.0480	0.0390	
04/15/2008	8.0	8.5	7.43	6.87	6.58	1.186	0.0480	0.0370	9.7
04/16/2008	8.0	9.0	7.39	6.93	6.61	1.347	0.0490	0.0380	
04/17/2008	8.0	8.5	7.40	6.89	6.57	1.046	0.0490	0.0380	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
04/18/2008	8.0	8.5	7.32	6.80	6.60	1.005	0.0490	0.0390	
04/19/2008	8.0	8.5	7.39	6.87	6.83	0.976	0.0490	0.0500	
04/20/2008	7.5	8.0	7.38	6.82	7.02	0.899	0.0490	0.0380	
04/21/2008	7.5	8.0	7.47	6.97	6.64	0.91	0.0490	0.0390	
04/22/2008	7.5	8.0	7.50	7.00	6.65	1.011	0.0490	0.0380	11.2
04/23/2008	7.5	8.0	7.48	6.97	6.54	1.015	0.0500	0.0390	
04/24/2008	8.0								
04/25/2008	9.0	8.5	7.26	6.70	6.43	1.322	0.0490	0.0380	
04/26/2008	8.5	9.0	7.29	6.75	6.48	1.131	0.0480	0.0390	
04/27/2008	9.0	9.5	7.29	6.73	6.39	0.942	0.0480	0.0380	
04/28/2008	9.0	9.0	7.46	6.74	6.41	0.932	0.0490	0.0370	
04/29/2008	9.0	9.0	7.21	6.72	6.45	1.431	0.0490	0.0370	9.3
04/30/2008	8.5	9.0	7.38	6.53	6.39	1.443	0.0500	0.0390	10.4
05/01/2008	8.0	9.0	7.41	6.82	6.41	1.15	0.0480	0.0380	
05/02/2008	8.5	9.0	7.51	6.82	6.48	1.019	0.0990	0.0390	
05/03/2008	9.5	9.0	7.25	6.90	6.86	1.284	0.0490	0.0380	
05/04/2008	9.0	9.0	7.23	6.81	6.54	1.237	0.0490	0.0390	
05/05/2008	9.0	10.0	7.43	6.82	6.50	1.136	0.0480	0.0480	
05/06/2008	10.0	10.0	7.45	6.53	6.26	1.209	0.0480	0.0380	9.3
05/07/2008	9.0	9.5	7.42	6.75	6.38	1.059	0.0480	0.0370	
05/08/2008	9.0	10.0	7.41	6.76	6.45	1.15	0.0470	0.0390	
05/09/2008	9.0	9.5	7.44	6.76	6.35	1.188	0.0470	0.0390	
05/10/2008	10.0	10.0	7.26	6.63	6.35	1.195	0.0480	0.0390	
05/11/2008	9.5	10.0	7.28	6.74	6.40	1.188	0.0480	0.0390	
05/12/2008	9.0	9.5	7.46	6.53	6.22	1.224	0.0480	0.0390	
05/13/2008	9.5	9.5	7.45	6.84	6.42	1.055	0.0480	0.0380	10.2
05/14/2008	10.0	10.0	7.47	6.88	6.45	1.028	0.0480	0.0380	
05/15/2008	10.0	10.5	7.43	6.80	6.33	1.259	0.0480	0.0380	
05/16/2008	11.5	11.0	7.28	6.63	6.43	2.106	0.0510	0.0360	
05/17/2008	13.5	14.0	7.12	6.55	6.30	4.112	0.0500	0.0390	
05/18/2008	11.5	11.5	7.25	6.54	6.30	2.851	0.0550	0.0420	
05/19/2008	11.5	12.0	7.23	6.57	6.32	2.086	0.0560	0.0430	
05/20/2008	11.0	11.0	7.08	6.43	6.36	1.866	0.0500	0.0720	
05/21/2008	10.0	11.0	7.34	6.70	6.31	1.828	0.0480	0.0590	
05/22/2008	9.5	10.5	7.47	6.75	6.75	1.538	0.0480	0.0470	
05/23/2008	9.0	10.0	7.23	6.59	6.50	1.339	0.0500	0.0390	
05/24/2008	9.0	10.0	7.25	6.62	6.55	1.16	0.0490	0.0380	
05/25/2008	10.0	10.0	7.38	6.78	6.77	1.637	0.0480	0.0380	
05/26/2008	10.0	10.0	7.34	6.77	6.69	1.541	0.0490	0.0380	
05/27/2008	10.5	10.5	7.41	6.80	6.42	1.539	0.0490	0.0410	10.3
05/28/2008	10.5	10.5	7.47	6.86	6.72	1.47	0.0490	0.0390	
05/29/2008	10.0	10.5	7.25	6.50	6.55	1.41	0.0530	0.0820	
05/30/2008	10.5	10.5	7.46	6.49	6.30	1.485	0.0540	0.0830	
05/31/2008	11.5	10.5	7.26	6.85	6.47	1.374	0.0500	0.0510	
06/01/2008	11.0	11.0	7.27	6.81	6.44	1.063	0.0490	0.0470	
06/02/2008	10.0	11.0	7.55	6.86	6.52	1.575	0.0490	0.0460	
06/03/2008	11.0	10.5	7.44	6.92	6.57	1.6	0.0500	0.0440	10.4
06/04/2008	11.0	10.5	7.35	6.77	6.34	3.168	0.0510	0.0510	
06/05/2008	10.5	11.0	7.36	6.71	6.10	1.805	0.0490	0.0420	
06/06/2008	10.0	10.5	7.51	6.75	6.23	1.55	0.0780	0.0410	
06/07/2008	9.5	10.5	7.18	6.58	6.28	1.844	0.0490	0.0420	
06/08/2008	9.5	10.5	7.18	6.58	6.35	1.669	0.0500	0.0450	
06/09/2008	10.5	10.5	7.54	6.72	6.34	1.271	0.1610	0.0420	
06/10/2008	10.5	10.0	7.44	6.37	6.15	1.71	0.0520	0.0400	9.5
06/11/2008	10.0	10.5	7.44	6.74	6.38	1.695	0.0490	0.0400	
06/12/2008	10.8	10.5	6.72	6.72	6.37		0.5100	0.0400	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
06/13/2008	11.0	10.5	7.48	6.75	6.38	1.631	0.0500	0.0400	
06/14/2008	11.5	10.5	7.20	6.55	6.45	1.703	0.0510	0.0380	
06/15/2008	11.0	11.0	7.21	6.74	6.41	1.54	0.0500	0.0390	
06/16/2008	12.0	11.5	7.36	6.74	6.43	1.309	0.0540	0.0370	
06/17/2008	12.0	11.5	7.36	6.73	6.43	1.476	0.0500	0.0380	10.1
06/18/2008	12.0	12.0	7.48	6.78	6.48	1.435	0.0510	0.0390	
06/19/2008	12.0	12.0	7.42	6.79	6.50	1.42	0.0500	0.0370	
06/20/2008	13.0	12.0	7.35	6.77	6.50	1.403	0.0500	0.0380	
06/21/2008	14.0	12.5	7.35	6.73	6.57	2.394	0.0500	0.0370	
06/22/2008	13.0	13.0	7.42	6.76	6.65	1.743	0.0500	0.0370	
06/23/2008	13.0	13.0	7.41	6.77	6.61	1.506	0.0500	0.0500	
06/24/2008	12.5	12.5	7.42		6.27	1.27	1.2800	0.0380	9.3
06/25/2008	13.5	13.5	7.45	6.68	6.54	1.28	0.0510	0.0370	
06/26/2008	14.0	13.5	7.25	6.79	6.67	1.23	0.0510	0.0370	
06/27/2008	13.5	13.5	7.29	6.79	6.68	1.156	0.0510	0.0390	
06/28/2008	15.0	14.5	7.26	6.69	6.67	1.135	0.0510	0.0370	
06/29/2008	17.0	16.0	7.27	6.76	6.65	1.201	0.0510	0.0390	
06/30/2008	16.0	16.5	7.28	6.83	6.66	1.063	0.0520	0.0400	
07/01/2008	15.5	16.5	7.33	6.81	6.61	0.771	0.0520	0.0410	13.8
07/02/2008	16.5	16.0	7.38	6.84	6.73	0.877	0.0530	0.0400	
07/03/2008	17.0	16.0	7.40	6.89	6.69	0.894	0.0530	0.0420	
07/04/2008	17.0	16.5	7.33	6.87	6.68	0.893	0.0540	0.0440	
07/05/2008	16.0	16.5	7.34	6.88	6.67	0.922	0.0530	0.0420	
07/06/2008	15.5	16.0	7.31	6.89	6.71	0.87	0.0540	0.0430	
07/07/2008	15.0	15.5	7.40	6.89	6.74	1.781	0.0520	0.0420	
07/08/2008	15.5	15.0	7.33	6.89	6.72	1.21	0.0540	0.0420	15.7
07/09/2008	16.5	16.5	7.28	7.00	6.76	1.248	0.0530	0.0390	
07/10/2008	18.0	17.5	7.33	6.95	6.73	1.445	0.0540	0.0410	
07/11/2008	17.0	17.0	7.35	6.89	6.73	1.413	0.0550	0.0440	
07/12/2008	17.0	16.5	7.21	6.98	6.84	1.285	0.0540	0.0410	
07/13/2008	17.5	17.0	7.26	7.01	6.85	1.333	0.0550	0.0400	
07/14/2008	18.0	17.5	7.38	6.98	6.75	1.203	0.0550	0.0400	
07/15/2008	18.0	18.0	7.38	6.94	6.79	1.331	0.0580	0.0440	13.5
07/16/2008	18.5	18.0	7.36	6.92	6.84	1.288	0.0570	0.0440	
07/17/2008	17.5	17.5	7.41	6.95	6.81	1.461	0.0570	0.0480	
07/18/2008	17.5	17.0	7.43	6.98	6.82	1.3	0.0630	0.0480	
07/19/2008	17.5	17.0	7.46	6.98	6.87	1.24	0.0600	0.0500	
07/20/2008	17.0	17.0	7.44	6.96	6.83	1.234	0.0580	0.0500	
07/21/2008	17.5	17.0	7.44	6.94	6.83	1.228	0.0560	0.0470	
07/22/2008	17.0	17.0	7.38	6.94	6.83	1.183	0.0590	0.0520	17.7
07/23/2008	15.5	17.0	7.39	6.97	6.89	1.139	0.0590	0.0580	
07/24/2008	16.5	15.5	7.44	6.96	6.90	0.99	0.0560	0.0550	
07/25/2008	17.0	16.5	7.32	6.91	6.88	0.997	0.0570	0.0490	
07/26/2008	17.5	17.0	7.33	6.92	6.89	0.761	0.0590	0.0530	
07/27/2008	18.0	17.0	7.36	6.96	6.90	1.399	0.1800	0.0540	
07/28/2008	17.0	17.5	7.44	6.94	6.87	0.942	0.0620	0.0570	
07/29/2008	17.5	17.0	7.35	6.98	6.84	1.036	0.0580	0.0530	15.5
07/30/2008	16.0	16.5	7.61	7.08	6.97	0.818	0.0550	0.0630	
07/31/2008	16.5	16.5	7.48	7.03	6.89	0.92	0.0600	0.0600	
08/01/2008	17.5	16.5	7.43	7.04	6.91	0.879	0.0590	0.0580	
08/02/2008	16.5	16.5	7.64	7.10	6.99	1.014	0.0680	0.0760	
08/03/2008	16.5	16.5	7.45	7.03	6.78	0.929	0.0870	0.0450	
08/04/2008	16.5	16.0	7.42	7.04	6.78	0.831	0.0640	0.0410	19.7
08/05/2008	18.0	16.5	7.36	6.99	6.72	0.864	0.0580	0.0410	
08/06/2008	19.0	17.5	7.39	6.95	6.83	0.915	0.0600	0.0460	
08/07/2008	18.0	18.0	7.41	6.98	6.79	0.779	0.0600	0.0410	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
08/08/2008	18.5	18.0	7.33	6.96	6.85	0.809	0.0640	0.0440	
08/09/2008	18.0	17.5	7.40	7.05	6.82	0.948	0.0740	0.0450	
08/10/2008	17.0	17.0	7.46	7.04	6.87	0.967	0.0760	0.0460	
08/11/2008	17.5	17.0	7.52	7.02	6.77	0.947	0.0580	0.0450	
08/12/2008	18.0	17.0	7.38	7.00	6.78	0.96	0.0600	0.0410	19.7
08/13/2008	19.0	18.0	7.41	6.99	6.77	0.949	0.0650	0.0420	
08/14/2008	19.0	18.0	7.38	7.02	6.77	0.919	0.0510	0.0390	
08/15/2008	20.0	19.0	7.34	6.95	6.75	0.982	0.0540	0.0390	
08/16/2008	20.0	20.0	7.22	6.90	6.76	1.041	0.0530	0.0430	
08/17/2008	20.5	20.0	7.23	6.86	6.83	1.044	0.0540	0.0410	
08/18/2008	20.0	20.0	7.36	7.04	6.86	1.079	0.0770	0.0450	
08/19/2008	18.0	19.5	7.38	7.07	6.82	1.074	0.0600	0.0450	19.7
08/20/2008	18.0	18.0	7.43	7.06	6.85	1.076	0.0590	0.0500	
08/21/2008	17.0	18.0	7.39	6.45	6.38	3.637	0.1340	0.0990	
08/22/2008	16.0	17.0	7.37	6.40	6.45	1.531	0.0390	0.1370	
08/23/2008	17.0	16.5	7.23	6.54	6.81	1.054	0.0350	0.1610	
08/24/2008	17.5	17.0	7.23	6.64	6.82	0.972	0.0330	0.1020	
08/25/2008	17.5	17.0	7.38	6.62	6.67	0.906	0.0320	0.0810	
08/26/2008	17.0	17.0	7.31	6.60	6.79	0.955	0.0320	0.0730	
08/27/2008	16.5	16.5	7.45	6.63	6.76	0.8	0.0310	0.0760	15.7
08/28/2008	17.0	16.5	7.51	6.65	6.77	0.83	0.0310	0.0730	
08/29/2008	17.0	16.5	7.37	6.53	6.58	0.842	0.0550	0.0420	
08/30/2008	17.5	17.0	7.42	6.51	6.66	0.802	0.0300	0.0450	
08/31/2008	16.0	16.5	7.47	6.55	6.63	0.788	0.0300	0.0390	
09/01/2008	15.5	16.0	7.53	6.61	6.65	0.722	0.0310	0.0380	
09/02/2008	15.0	15.5	7.47	6.60	6.64	0.684	0.0300	0.0360	16.9
09/03/2008	15.0	15.0	7.50	6.59	6.72	0.717	0.0310	0.0360	
09/04/2008	15.0	15.0	7.40	6.59	6.65	0.712	0.0310	0.0350	
09/05/2008	15.5	15.0	7.42	6.59	6.62	0.641	0.0300	0.0360	
09/06/2008	16.0	15.5	7.42	6.60	6.63	1.035	0.0310	0.0360	
09/07/2008	16.5	16.0	7.41	6.62	6.73	1.134	0.0310	0.0360	
09/08/2008	16.5	16.5	7.34	6.59	6.67	1.067	0.0300	0.0360	
09/09/2008	16.5	16.5	7.35	6.60	6.65	0.903	0.0280	0.0330	
09/10/2008	15.5	16.0	7.41	6.77	6.78	0.946	0.0280	0.0380	
09/11/2008	15.5	15.5	7.50	6.80	6.82	1.111	0.0290	0.0440	
09/12/2008	16.0	15.5	7.37	6.60	6.71	1.082	0.0280	0.0430	
09/13/2008	15.5	15.0	7.50	6.82	6.78	1.073	0.0290	0.0450	
09/14/2008	16.0	15.5	7.49	6.81	6.85	0.961	0.0290	0.0460	
09/15/2008	15.5	16.0	7.49	6.78	6.91	0.999	0.0290	0.0470	
09/16/2008	16.5	16.0	7.45	6.79	6.88	0.98	0.0290	0.0500	21.5
09/17/2008	16.5	16.0	7.45	6.84	6.93	0.955	0.0290	0.0530	
09/18/2008	16.5	16.0	7.54	6.96	6.92	0.945	0.0300	0.0620	
09/19/2008	15.0	16.0	7.54	6.82	6.78	0.893	0.0290	0.0410	
09/20/2008	15.0	15.0	7.22	6.90	6.94	0.932	0.0300	0.0410	
09/21/2008	14.5	15.0	7.38	6.92	6.91	0.878	0.0280	0.0400	
09/22/2008	14.5	15.5	7.54	6.93	6.82	0.904	0.0300	0.0410	
09/23/2008	14.0	15.0	7.50	6.79	6.80	1.001	0.0300	0.0470	23.0
09/24/2008	13.5	14.5	7.53	6.91	6.91	0.778	0.0290	0.0440	
09/25/2008	13.5	14.5	7.51	6.89	6.90	0.76	0.0290	0.0440	
09/26/2008	13.5	14.0	7.46	6.91	6.74	1.149	0.0320	0.0930	
09/27/2008	13.0	14.0	7.78	6.98	6.66	1.016	0.0320	0.0460	
09/28/2008	13.0	14.0	7.30	6.73	6.65	0.837	0.0490	0.0470	
09/29/2008	14.0	14.0	7.44	6.89	6.74	0.785	0.0280	0.0380	
09/30/2008	14.5	14.0	7.45	6.93	6.61	0.79	0.0290	0.0380	18.9
10/01/2008	14.5	14.0	7.45	6.91	6.71	0.784	0.0290	0.0380	
10/02/2008	15.0	15.0	7.50	6.95	6.70	0.78	0.0300	0.0370	

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
10/03/2008	15.0	15.0	7.85	7.05	6.69	0.618	0.0300	0.0380	
10/04/2008	14.0	15.0	7.12	6.73	6.71	0.873	0.0320	0.0480	
10/05/2008	14.0	15.0	7.00	6.33	6.37	7.888	0.0400	0.0520	
10/06/2008	13.5	15.0	7.52	6.63	6.09	1.124	0.0470	0.0400	
10/07/2008	14.0	14.5	7.44	6.60	5.90	0.836	0.0300	0.0380	
10/08/2008	13.5	14.0	7.31	6.63	6.19	1.125	0.0290	0.0380	13.3
10/09/2008	12.0	13.5	7.48	6.60	6.16	0.716	0.0290	0.0390	
10/10/2008	11.5	12.5	7.56	6.60	6.25	0.574	0.0290	0.0380	
10/11/2008	11.5	11.5	7.49	6.76	6.34	0.737	0.0380	0.0380	
10/12/2008	10.0	11.5	7.44	6.67	6.21	0.46	0.0290	0.0380	
10/13/2008	10.5	11.0	7.59	6.79	6.24	0.47	0.0310	0.0410	
10/14/2008	11.5	11.5	7.63	6.67	6.42	0.527	0.0280	0.0400	
10/15/2008	12.0	11.5	7.54	6.78	6.17	0.512	0.0280	0.0420	
10/16/2008	10.5	11.5	7.57	6.73	6.07	0.494	0.0270	0.0450	
10/17/2008	11.0	11.5	7.57	6.84	6.19	0.54	0.0280	0.0390	
10/18/2008	12.0	12.0	7.50	6.80	6.06	0.494	0.0270	0.0390	
10/19/2008	11.5	11.5	7.78	6.81	6.10	0.499	0.0270	0.0390	
10/20/2008	10.5	11.5	7.68	6.80	6.19	0.59	0.0270	0.0390	
10/21/2008	11.0	11.0	7.44	6.72	6.11	0.647	0.0270	0.0380	14.6
10/22/2008	10.0	11.0	7.55	6.73	6.14	0.575	0.0320	0.0370	
10/23/2008	10.0	10.5	7.32	6.82		0.658	0.0350		
10/24/2008	10.0	10.0	7.31	6.85		0.444	0.0400		
10/25/2008	10.0	10.0	7.32	6.96		0.434	0.1960		
10/26/2008	9.0	9.5	7.43	6.83		0.421	0.6600		
10/27/2008	9.5	10.0	7.35	6.89		0.453	0.2800		
10/28/2008	10.0	10.2	7.61	6.89		0.458	0.0570		16.0
10/29/2008	10.0	10.0	7.48	6.84		0.441	0.2060		
10/30/2008	11.0	10.5	7.55	6.84		0.484	0.0300		
10/31/2008	10.0	10.5	7.44	6.83		0.546	0.2420		
11/01/2008	11.0	11.0	7.24	6.73		0.742	0.0340		
11/02/2008	11.5	11.5	7.24	6.76		0.594	0.0330		
11/03/2008	11.0	11.5	7.42	6.82		1.091	0.0320		
11/04/2008	11.0	11.0	7.38	6.07	6.01	1.324	0.0740	0.0520	13.3
11/05/2008	9.0	10.5	7.25	6.53	6.25	1.621	0.5500	0.0580	
11/06/2008	10.0	11.0	7.40	6.72	6.69	0.957	0.0480	0.0560	
11/07/2008	11.0	11.0	7.30	6.42	7.16	1.632	0.0350	0.1680	
11/08/2008	11.5	10.5	7.30	6.35	5.98	0.909	0.0330	0.0500	
11/09/2008	10.0	11.0	7.32	6.47	6.16	0.878	0.0370	0.0680	
11/10/2008	10.5	11.0	7.27	6.46	6.41	0.655	0.1250	0.0400	
11/11/2008	10.5	11.5	7.12	6.36	6.17	0.653	0.0290	0.0440	
11/12/2008	10.5	11.5	7.19	6.11	6.13	2.299	0.0280	0.0380	
11/13/2008	10.5	11.0	6.84	5.11	5.24	35	0.0320	0.0940	
11/14/2008	10.5	11.0	7.12	5.40	5.26	6.597	0.1210	0.0470	
11/15/2008	10.0	10.5	7.11	6.50	5.42	2.371	3.5090	0.0390	
11/16/2008	10.0	10.5	7.22	6.54	5.65	1.903	0.0520	0.0600	
11/17/2008	10.0	10.5	7.24	6.56	6.05	1.236	0.0320	0.0340	
11/18/2008	10.0	10.5	7.24	6.34	6.06	1.004	0.5570	0.0300	10.8
11/19/2008	10.0	10.0	7.35	6.52	6.54	0.968	1.1520	0.0230	
11/20/2008	10.0	10.5	7.34		6.55	0.866		0.0250	
11/21/2008	10.0	9.0	6.88		6.49	1.632		0.0250	
11/22/2008	9.5	10.5	7.20		6.52	0.947		0.0240	
11/23/2008	10.0	9.5	7.20		6.36	0.954		0.0240	
11/24/2008	7.5	9.0	7.34		6.48	0.78		0.0230	
11/25/2008	7.5	8.5	7.29		6.54	0.729		0.0230	
11/26/2008	8.0	8.5	7.40		6.57	0.856		0.0260	
11/27/2008	8.0	8.5	6.97		6.53	2.041		0.0300	

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
11/28/2008	7.5	8.0	7.33		6.52	2.99		0.0270	
11/29/2008	9.0	8.0	7.21		6.82	2.617		0.0290	
11/30/2008	9.5	8.5	7.13		6.83	2.611		0.0290	
12/01/2008	9.0	9.0	7.31	6.11	6.40	5.513	0.0480	0.0300	
12/02/2008	8.5	9.5	7.45	6.36	6.18	2.322	0.1400	0.0280	
12/03/2008	9.5	9.5	7.28	6.71	5.99	1.797	0.0440	0.0260	
12/04/2008	9.0	8.5	7.36	6.42	6.24	1.435	0.0330	0.0250	12.0
12/05/2008	7.5	8.5	7.32	6.64	6.23	0.999	0.0340	0.0260	
12/06/2008	8.0	8.5	7.14	6.53	6.21	2.288	0.1430	0.0300	
12/07/2008	8.0	8.0	7.18		6.48	0.758		0.0280	
12/08/2008	7.5	8.0	7.26		6.30	1.455		0.0270	
12/09/2008	7.5	7.5	7.18	6.35	6.30	1.021	0.0490	0.0260	
12/10/2008	7.5	8.0	7.31	6.71	6.39	0.943	0.0250	0.0250	
12/11/2008	7.5	8.0	7.25	6.72	6.42	0.934	0.1960	0.0260	
12/12/2008	7.5	7.5	7.38	6.84	6.37	0.817	0.0200	0.0310	
12/13/2008	7.0	7.0	7.37	6.81	6.20	1.147	0.0200	0.0300	
12/14/2008	7.0	7.0	7.29	6.72	6.15	1.375	0.0210	0.0300	
12/15/2008	6.5	7.5	7.27	6.76	6.22	0.866	0.0200	0.0290	
12/16/2008	5.5	6.0	7.38	6.83	6.01	0.958	0.0220	0.0280	14.1
12/17/2008	5.0	5.5	7.28	6.70	6.19	1.002	0.0270	0.0990	
12/18/2008	4.0	5.5	7.36	6.76	6.00	1.682	0.0420	0.0620	
12/19/2008	5.0	5.5	7.39	7.05	5.96	1.545	0.0210	0.0330	
12/20/2008	5.0	5.5	7.32	6.73	5.94	1	0.0320	0.0320	
12/21/2008	6.0	5.0	7.29	6.68	6.03	1.25	0.0210	0.0340	
12/22/2008	5.5	5.5	7.29	6.75	5.74	3.2	0.0400	0.0400	
12/23/2008	5.0	6.0	7.26	6.70	5.80	1.65	0.0240	0.0390	
12/24/2008	5.5	6.0	7.37	6.85	5.78	1.23	0.0370	0.0420	
12/25/2008	7.0	6.0	7.40	6.93	5.89	2.101	0.0220	0.0390	
12/26/2008	6.0	5.5	7.15	6.83	5.91	1.51	0.0430	0.0380	
12/27/2008	7.0	6.5	7.41	6.93	6.06	1.414	0.0220	0.0370	
12/28/2008	7.0	8.5	7.90	6.47	5.27	18.86			
12/29/2008	8.0	6.5	7.02		5.15	12.01		0.0580	
12/30/2008	8.5	6.5	6.93		5.23	3.883		0.0900	
12/31/2008	8.5	8.0	7.35		5.52	4.58		0.0470	
01/01/2009	8.0	7.0	6.79		5.67	2.814		0.0530	
01/02/2009	6.5	7.0	7.12		5.08	71.8		0.0970	
01/03/2009	6.5	7.0	6.78		5.47	11.9		0.0660	
01/04/2009	6.0	6.5	7.09		5.44	8.94		0.0540	
01/05/2009	6.0	6.5	7.07		5.30	4.289		0.0650	
01/06/2009	7.5	7.0	7.13		5.37	3.432		0.0550	
01/07/2009	8.0	7.5	7.21	5.74	5.65	5.891	0.0890	0.0560	
01/08/2009	8.0	8.0	7.17		5.30	9.655		0.0650	
01/09/2009	8.0	8.0	7.15		5.32	6.766		0.0510	
01/10/2009	7.0	10.0	6.80		5.36	4		0.0870	
01/11/2009	8.0	7.0	6.84		5.43	2.427		0.0790	7.3
01/12/2009	8.0	7.5	7.21		5.21	2.04		0.0920	
01/13/2009	9.0	8.0	7.22	6.19	5.70	2.55		0.0970	8.3
01/14/2009	7.5	8.0	7.25	6.67	5.97	1.889		0.0520	
01/15/2009	7.0	7.5	7.27	6.58	5.98	1.52	0.0590	0.0380	
01/16/2009	5.5	7.0	7.09	6.73	6.21	1.505	0.0220	0.0490	
01/17/2009	5.5	6.5	6.99	6.68	6.51	1.35	0.0210	0.0420	
01/18/2009	5.0	6.0	7.06	6.59	6.59	1.25	0.0220	0.0400	
01/19/2009	4.5	6.0	7.12	6.51	6.55	1.26	0.0220	0.0540	
01/20/2009	4.0	5.5	7.06	6.48	6.70	1.2	0.0250	0.0480	
01/21/2009	3.5	5.0	7.19	6.70	6.68	1.4	0.0230	0.0430	7.6
01/22/2009	7.5	5.0	6.99	6.92	7.16	1.641	0.0240	0.0630	12.1

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
01/23/2009	6.5	5.5	7.02	7.00	7.06	1.014	0.0240	0.0800	
01/24/2009	6.5	6.0	7.32	7.04	6.47	1.02	0.0250	0.0390	
01/25/2009	7.0	6.0	7.34	7.04	6.21	1.072	0.0240	0.0340	
01/26/2009	6.5	6.0	7.39	6.93	6.62	1.078	0.0270	0.0380	
01/27/2009	5.5	6.5	7.28	7.06	6.80	0.95	0.0250	0.0380	13.2
01/28/2009	5.5	6.5	7.29	7.07	6.68	0.814	0.0240	0.0360	
01/29/2009	6.5	6.0	7.35	6.94	6.76	1.116	0.0300	0.0360	
01/30/2009	6.0	6.0	7.21	6.94	6.73	0.956	0.0220	0.0340	
01/31/2009	6.0	7.0	7.34	6.88	6.75	0.927	0.0220	0.0350	
02/01/2009	6.5	6.5	7.32	6.96	6.83	0.92	0.0240	0.0360	
02/01/2009	6.5	7.0	7.32	6.96	6.83	0.92	0.0240	0.0360	
02/02/2009	6.5	6.0	7.33	6.78	6.82	0.812	0.0220	0.0350	
02/03/2009	6.0	6.0	7.20	6.77	6.65	0.871	0.0220	0.0430	13.2
02/04/2009	6.0	6.0	7.31	6.92	6.86	0.833	0.0220	0.0350	
02/05/2009	6.5	6.0	7.30	6.87	6.87	0.841	0.0220	0.0360	
02/06/2009	6.5	7.0	7.33	6.95	6.86	0.824	0.0220	0.0360	
02/07/2009	7.0	6.5	7.15	6.94	7.30	1.448	0.0220	0.0420	
02/08/2009	7.0	6.0	7.18	6.83	6.84	0.96	0.0220	0.0370	
02/09/2009	6.5	6.5	7.32	6.78	6.82	0.83	0.0220	0.0350	
02/10/2009	6.0	6.5	7.34	6.87	6.76	0.926	0.0220	0.0400	12.9
02/11/2009	6.0	6.5	7.35	6.89	6.86	1.512	0.0220	0.0410	
02/12/2009	6.0	6.0	7.38	6.89	6.75	0.885	0.0210	0.0370	
02/13/2009	6.0	6.5	7.34	6.98	6.92	0.818	0.0210	0.0380	
02/14/2009	6.0	6.5	7.28	6.79	6.76	0.797	0.0220	0.0550	
02/15/2009	6.5	6.5	7.26	6.76	6.76	0.791	0.0230	0.0350	
02/16/2009	6.5	6.5	7.26	6.75	6.75	0.786	0.0220	0.0400	
02/17/2009	7.0	7.0	7.40	6.95	6.86	0.782	0.0230	0.0330	
02/18/2009	7.0	6.5	7.11	6.72	6.85	0.838	0.0220	0.0340	13.5
02/19/2009	6.5	6.5	7.41	6.93	6.83	0.749	0.0220	0.0330	
02/20/2009	6.5	6.5	7.38	6.98	6.97	0.77	0.0220	0.0320	
02/21/2009	7.0	6.5	7.25	6.94	6.72	0.673	0.0220	0.0320	
02/22/2009	7.0	6.5	7.26	6.96	6.80	0.8	0.0220	0.0330	
02/23/2009	7.0	6.5	7.38	6.96	6.84	0.868	0.0220	0.0330	
02/24/2009	7.0	7.0	7.34	6.79	6.75	2.748	0.0220	0.0380	11.4
02/25/2009	7.0	7.0	7.21	6.46	6.40	13.148	0.0320	0.0470	
02/26/2009	7.0	6.5	7.28	6.57	6.16	6.042	0.0250	0.0480	
02/27/2009	7.0	6.5	7.22	6.56	6.29	3.454	0.0250	0.0390	
02/28/2009	7.0	7.0	7.35	6.94	6.36	2.098	0.0240	0.0380	
03/01/2009	7.0	7.5	7.27	6.73	6.38	1.784	0.0230	0.0350	
03/02/2009	7.5	7.5	7.17	6.72	6.40	1.797	0.0240	0.0340	
03/03/2009	8.0	7.5	7.58	6.70	6.42	1.747	0.0260	0.0340	
03/04/2009	7.5	7.5	7.29	6.79	6.46	1.725	0.0230	0.0330	10.5
03/05/2009	7.5	7.5	7.18	6.87	6.42	1.553	0.0230	0.0330	
03/06/2009	7.0	7.0	7.23	6.54	6.23	2.098	0.0230	0.0330	
03/07/2009	8.0	8.0	7.29	6.79	6.39	1.533	0.0240	0.0330	
03/08/2009	7.5	7.0	7.17	6.84	6.49	1.444	0.0240	0.0350	
03/09/2009	6.5	7.0	7.34	6.87	6.55	1.507	0.0230	0.0390	
03/10/2009	6.5	7.0	7.39	6.89	6.54	1.335	0.0240	0.0320	12.2
03/11/2009	6.5	7.0	7.32	6.89	6.56	2.016	48.0000	0.0690	
03/12/2009	6.5	6.5	7.35	6.88	6.46	1.174	0.0220	0.0370	
03/13/2009	7.0	6.5	7.39	6.87	6.69	1.098	0.0220	0.0340	
03/14/2009	7.0	6.5	7.21	6.98	6.58	1.111	0.0230	0.0340	
03/15/2009	7.0	7.0	7.17	6.99	6.88	2.207	0.0240	0.0330	
03/16/2009	7.0	7.0	7.21	6.48	5.99	7.626	0.0580	0.0530	
03/17/2009	7.0	7.0	7.31	6.74	6.19	2.454	0.0230	0.0340	
03/18/2009	7.5	7.5	7.34	6.62	6.36	2.214	0.0230	0.0340	10.6

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
03/19/2009	8.0	7.5	7.32	6.77	6.46	1.766	0.0230	0.0330	
03/20/2009	8.0	7.5	7.09	6.85	6.51	1.6	0.0220	0.0330	
03/21/2009	8.5	7.5	7.17	6.65	6.77	1.575	0.0230	0.0320	
03/22/2009	8.0	8.0	7.17	6.64	6.55	1.386	0.0220	0.0320	
03/23/2009	8.0	8.0	7.16	6.52	6.38	1.446	0.0220	0.0560	
03/24/2009	8.0	8.0	7.21	6.73	6.41	1.264	0.0230	0.0350	10.4
03/25/2009	8.0	8.5	7.31	6.51	6.46	1.244	0.0230	0.0430	
03/26/2009	8.0	8.0	7.36	6.79	6.46	1.574	0.0250	0.0340	
03/27/2009	8.0	8.0	7.27	6.79	6.41	1.441	0.0240	0.0320	
03/28/2009	8.0	8.5	7.35	6.91	6.62	1.06	0.0230	0.0330	
03/29/2009	8.0	8.0	7.01	6.41	6.57		0.0240	0.0570	
03/30/2009	7.5	7.5	6.95	6.55	6.45	1.566	0.0240	0.0330	
03/31/2009	7.5	8.0	6.94	6.61	6.42	1.396		0.0320	10.8
04/01/2009	8.0	8.0	7.31	6.59	6.49	1.502	0.0230	0.0300	
04/02/2009	7.5	8.0	7.30	6.38	6.46	1.175	0.0230	0.0290	
04/03/2009	7.5	8.0	7.17	6.41	6.10	1.907	0.0240	0.0310	
04/04/2009	7.5	7.5	7.07	6.67	6.51	1.083	0.0240	0.0310	
04/05/2009	8.0	7.5	7.14	6.80	6.54	0.929	0.0240	0.0300	
04/06/2009	8.5	8.0	7.01	6.67	6.34	1.44	0.0230	0.0300	
04/07/2009	9.0	8.5	7.27	6.69	6.41	1.307	0.0230	0.0300	10.5
04/08/2009	9.0	9.0	7.23	6.61	6.45	2.16	0.0240	0.0300	
04/09/2009	9.0	9.0	7.22	6.67	6.16	1.19	0.0240	0.0290	
04/10/2009	9.0	9.0	7.03	6.53	6.30	1.355	0.0240	0.0300	
04/11/2009	8.0	9.0	7.20	7.73	6.29		0.0250	0.0300	
04/12/2009	9.0	9.0	7.20	6.79	6.47	1.092	0.0240	0.0290	
04/13/2009	8.5	8.5	7.12	6.65	6.33	1.081	0.0240	0.0290	
04/14/2009	8.0	8.5	7.18	6.70	6.26	1.824	0.0330	0.0300	10.0
04/15/2009	8.0	8.5	7.26	6.32	6.27	1.39	0.0250	0.0300	
04/16/2009	8.0	8.0	7.16	6.64	6.14	1.202	0.0240	0.0310	
04/17/2009	9.0	8.5	7.24	6.60	6.69	1.053	0.0240	0.0310	
04/18/2009	9.0	8.5	7.39	6.71	6.68	1.145	0.0240	0.0310	
04/19/2009	9.0	9.0	7.26	6.64	6.65	0.881	0.0250	0.0300	
04/20/2009	10.0	9.5	7.09	6.58	6.71	1.138	0.0240	0.0310	
04/21/2009	10.5	10.0	7.11	6.65	6.75	1.013	0.0240	0.0310	
04/22/2009	11.0	10.5	7.10	6.58	6.44	1.065	0.0240	0.0300	
04/23/2009	10.0	10.0	7.25	6.58	6.58	0.921	0.0250	0.0300	
04/24/2009	9.5	10.5	7.30	6.59	6.27	0.828	0.0250	0.0300	
04/25/2009	9.5	10.0	7.21	6.63	6.52	0.894	0.0240	0.0330	
04/26/2009	8.5	10.0	7.18	6.68	7.04	0.928	0.0240	0.0340	
04/27/2009	9.5	9.5	7.10	6.60	6.54	0.911	0.0250	0.0320	
04/28/2009	10.0	9.5	7.30	6.63	6.59	0.829	0.0250	0.0340	12.3
04/29/2009	9.5	9.5	7.36	6.58	6.50	1.209	0.0250	0.0360	
04/30/2009	9.5	9.5	7.40	6.61	6.49	0.987	0.0250	0.0350	
05/01/2009	10.0	10.0	7.22	6.59	6.67	1.03	0.0250	0.0350	
05/02/2009	10.5	10.0	7.27	6.86	6.38	1.037	0.0250	0.3400	
05/03/2009	11.0	10.0	7.28	7.26	6.56	1.7	0.0280	0.0460	
05/04/2009	10.5	10.5	7.01	6.65	6.47	1.071	0.0270	0.0380	
05/05/2009	10.0	10.5	7.31	6.77	6.47	1.373	0.0260	0.0350	11.5
05/06/2009	10.0	10.5	7.25	6.32	6.29	2.026	0.0780	0.0390	
05/07/2009	10.5	10.5	7.21	6.38	6.42	2.813	0.0260	0.0410	
05/08/2009	10.0	10.5	7.00	6.28	6.28	2.302	0.0350	0.0370	
05/09/2009	10.0	10.5	7.32	6.69	6.21	1.317	0.0710	0.0430	
05/10/2009	10.0	10.5	6.99	6.37	6.37	1.47	0.0790	0.0330	
05/11/2009	10.5	10.5	6.99	6.28	6.26	1.41	0.0410	0.0320	11.0
05/12/2009	10.5	10.5	7.21	7.06	6.39	1.236	0.0250	0.0320	
05/13/2009	10.5	10.5	7.35	6.63	6.35	1.117	0.0250	0.0320	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
05/14/2009	10.0	10.5	7.00	6.62	6.23	1.264	0.0260	0.0340	
05/15/2009	10.0	10.5	7.02	6.50	6.25	2.257	0.0260	0.0360	
05/16/2009	10.5	10.5	7.31	6.67	6.34	1.623	0.0260	0.0370	
05/17/2009	11.0	11.5	7.34	6.71	6.39	1.584	0.0260	0.0330	
05/18/2009	12.0	12.0	7.16	6.64	6.35	1.455	0.0260	0.0320	
05/19/2009	12.5	12.0	7.36	6.70	6.49	1.505	0.0270	0.0320	11.1
05/20/2009	11.5	12.0	7.20	6.65	6.52	1.602	0.0300	0.0320	
05/21/2009	11.5	12.0	7.25	6.67	6.47	1.352	0.0290	0.0320	
05/22/2009	12.0	12.0	7.20	6.73	6.69	1.17	0.0340	0.0320	
05/23/2009	12.5	11.5	7.20	7.00	6.80	1.214	0.0300	0.0310	
05/24/2009	12.5	12.0	7.20	6.80	6.90	1.17	0.0380	0.0320	
05/25/2009	13.0	12.0	7.10	6.70	6.60	1.191	0.0350	0.0310	
05/26/2009	13.0	12.5	7.15	6.65	6.55	1.898	0.0370	0.0310	
05/27/2009	13.5	12.5	7.38	6.78	6.58	1.672	0.0350	0.0310	
05/28/2009	14.0	13.5	7.33	6.89	6.67	1.805	0.0290	0.0310	13.8
05/29/2009	14.5	14.0	7.37	6.85	6.74	3.55	0.0290	0.0330	
05/30/2009	15.5	15.0	7.13	6.64	6.54	2.734	0.0300	0.0340	
05/31/2009	16.0	15.0	7.27	6.83	6.71	2.56	0.0300	0.0340	
06/01/2009	15.5	16.0	7.48	6.91	6.72	2.237	0.0300	0.0340	
06/02/2009	15.5	16.0	7.32	6.76	6.80	1.779	0.0270	0.0340	14.1
06/03/2009	15.5	16.0	7.49	6.77	6.72	1.908	0.0260	0.0370	
06/04/2009	16.5	16.0	7.41	6.74	6.70	1.585	0.0270	0.0330	
06/05/2009	16.0	16.0	7.34	6.72	6.71	1.788	0.0270	0.0360	
06/06/2009	15.0	15.5	7.47	6.82	7.06		0.0300	0.0390	
06/07/2009	14.5	15.0	7.48	6.85	6.41		0.0280	0.0450	
06/08/2009	14.0	15.0	7.54	6.90	6.68	1.368	0.0270	0.0340	
06/09/2009	14.0	14.5	7.41	6.83	6.55	1.05	0.0270	0.0320	
06/10/2009	14.5	15.0	7.48	6.88	6.81	1.143	0.0260	0.0400	
06/11/2009	15.0	15.0	7.61	7.01	6.87	1.087	0.0260	0.0330	
06/12/2009	15.0	15.0	7.45	6.95	6.97	0.985	0.0270	0.0300	
06/13/2009	16.0	15.0	7.73	6.99	6.92	1.051	0.0280	0.0300	
06/14/2009	15.0	15.0	7.71	6.95	6.87	1.035	0.0270	0.0290	
06/15/2009	15.0	15.0	7.67	6.88	6.76	0.851	0.0290	0.0380	
06/16/2009	16.0	15.5	7.37	6.91	6.70	1.321	0.0280	0.0350	16.5
06/17/2009	16.0	15.5	7.81	7.11	6.68	1.015	0.0300	0.0360	
06/18/2009	16.0	15.5	7.60	6.98	6.64	1.429	0.0280	0.0330	
06/19/2009	16.0	15.5	7.35	7.00	6.47	1.25	0.0320	0.0330	
06/20/2009	15.5	15.5	7.78	7.13	6.62	1.482	0.0330	0.0350	
06/21/2009	15.0	15.5	7.93	7.17	6.57	1.274	0.0350	0.0350	
06/22/2009	15.0	15.5	7.68	7.03	6.59	1.308	0.0310	0.0350	
06/23/2009	15.5	15.0	7.83	7.14	6.52	1.173	0.0330	0.0340	
06/24/2009	16.5	15.0	7.68	7.12	6.65	1.122	0.0320	0.0350	18.0
06/25/2009	16.5	15.5	7.55	7.95	6.67	1.128	0.0350	0.0350	
06/26/2009	15.5	16.0	7.40	7.93	6.61	1.062	0.0280	0.0370	
06/27/2009	15.5	15.5	7.21	6.97	6.61	0.932	0.0300	0.0340	
06/28/2009	16.0	16.0	7.26	6.99	6.81	0.922	0.0270	0.0330	
06/29/2009	16.5	16.5	7.35	6.89	6.53	0.911	0.0270	0.0330	
06/30/2009	15.5	16.5	7.40	7.02	6.52	1.072	0.0270	0.0350	18.3
07/01/2009	15.5	16.5	7.41	7.00	6.57	0.899	0.0270	0.0320	
07/02/2009	16.5	16.5	7.43	7.04	6.56	0.768	0.0290	0.0310	
07/03/2009	17.0	17.5	7.28	6.75	6.67	0.864	0.0270	0.0310	
07/04/2009	17.0	18.0	7.26	6.76	6.60	0.89	0.0270	0.0310	
07/05/2009	17.5	18.5	7.21	6.75	6.62	0.77	0.0280	0.0310	
07/06/2009	17.0	18.0	7.37	6.98	6.69	0.751	0.0280	0.0320	
07/07/2009	15.5	17.0	7.41	6.97	6.74	0.971	0.0280	0.0360	
07/09/2009	15.0	16.5	7.47	7.01	6.76	0.99	0.0260	0.0310	19.7

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
07/08/2009	15.5	17.0	7.45	6.99	6.73	1.03	0.0270	0.0320	
07/10/2009	16.5	16.5	7.42	6.97	6.59	0.886	0.0250	0.0340	
07/11/2009	16.5	17.0	7.36	6.90	6.51	1.032	0.0270	0.0590	
07/12/2009	16.5	17.0	7.36	6.90	6.51	1.032	0.0270	0.0590	
07/13/2009	15.0	16.5	7.31	6.73	6.59	1.319	0.0720	0.0350	
07/14/2009	16.0	16.5	7.66	6.98	6.73	1.064	0.0280	0.0440	
07/15/2009	16.5	16.5	7.32	6.91	6.54	1.011	0.0260	0.0310	18.0
07/16/2009	17.5	17.0	7.42	6.92	6.49	0.978	0.0270	0.0300	
07/17/2009	19.0	18.0	7.38	6.89	6.50	0.953	0.0260	0.0330	
07/18/2009	19.0	18.5	7.36	6.90	6.63	0.953	0.0260	0.0300	
07/19/2009	18.0	18.0	7.41	6.92	6.70	1.086	0.0270	0.0300	
07/20/2009	18.5	19.0	7.39	6.88	6.53	1.109	0.0270	0.0300	
07/21/2009	19.0	19.0	7.39	6.93	6.55	1.085	0.0260	0.0290	19.0
07/22/2009	19.5	19.0	7.41	6.96	6.53	1.306	0.0270	0.0300	
07/23/2009	18.5	19.0	7.34	6.91	6.58	1.039	0.0260	0.0290	
07/24/2009	19.0	19.0	7.43	6.94	6.57	1.154	0.0260	0.0300	
07/25/2009	19.0	19.0	7.42	6.93	6.56	1.096	0.0260	0.0290	
07/26/2009	19.5	19.0	7.42	6.97	6.65	0.887	0.0270	0.0290	
07/27/2009	20.5	20.0	7.43	6.95	6.62	0.944	0.0280	0.0290	
07/28/2009	21.5	21.5	7.42	6.89	6.58	0.92	0.0280	0.0280	
07/29/2009	22.0	22.0	7.41	6.94	6.64	1.247	0.0280	0.0280	
07/30/2009	22.0	22.0	7.46	6.95	6.70	1.238	0.0290	0.0290	
07/31/2009	21.0	21.5	7.33	6.94	6.81	1.358	0.0290	0.0290	
08/01/2009	21.5	21.5	7.30	6.92	7.12	1.255	0.0290	0.0300	
08/02/2009	21.5	21.5	7.34	7.01	7.20	1.492	0.0280	0.0290	
08/03/2009	21.5	21.5	7.25	6.90	6.78	1.443	0.0290	0.0300	
08/04/2009	21.0	21.5	7.45	6.93	6.65	1.363	0.0280	0.0300	
08/05/2009	20.0	20.0	7.74	7.02	7.41	1.039	0.0290	0.0310	
08/06/2009	19.0	20.0	7.36	6.90	6.70	1.039	0.0280	0.0300	
08/07/2009	17.5	18.5	7.52	6.99	6.79	1.004	0.0270	0.0300	
08/08/2009	16.5	18.0	7.36	6.75	6.72	0.998	0.0270	0.0300	
08/09/2009	17.0	18.0	7.33	6.79	6.72	1.051	0.0260	0.0300	
08/10/2009	18.0	18.5	7.51	6.91	6.67	1.111	0.0270	0.0300	
08/11/2009	19.0	18.5	7.49	6.88	6.63	1.06	0.0270	0.0300	
08/12/2009	19.0	18.5	7.49	6.98	6.72	0.95	0.0270	0.0300	22.2
08/13/2009	19.0	18.5	7.48	6.99	6.75	0.999	0.0280	0.0310	
08/14/2009	17.5	18.5	7.46	6.95	6.52	0.928	0.0280	0.0320	
08/15/2009	17.0	17.5	7.46	6.99	6.88	0.974	0.0310	0.0330	
08/16/2009	16.5	17.0	7.40	7.10	6.92	0.723	0.0280	0.5180	
08/17/2009	17.0	17.0	7.58	6.99	6.86	0.723	0.0280	0.0330	
08/18/2009	18.0	17.0	7.41	6.99	6.86	0.903	0.0270	0.0330	21.8
08/19/2009	19.5	18.5	7.50	6.99	6.77	0.987	0.0280	0.0320	
08/20/2009	20.0	19.0	7.49	7.02	6.81	0.875	0.0310	0.0340	
08/21/2009	19.0	19.0	7.49	7.03	6.84	0.754	0.0320	0.0360	
08/22/2009	17.5	18.0	7.43	6.98	6.80	0.676	0.0320	0.0380	
08/23/2009	18.0	18.0	7.42	6.97	6.79	0.603	0.0300	0.0360	
08/24/2009	17.5	17.5	7.52	6.99	6.84	0.933	0.0290	0.0370	
08/25/2009	16.5	17.0	7.47	6.97	6.83	0.809	0.0290	0.0340	22.9
08/26/2009	16.5	17.0	7.52	6.88	6.79	0.886	0.0300	0.0370	
08/27/2009	16.5	17.0	7.49	7.00	6.83	0.811	0.0290	0.0330	
08/28/2009	18.0	17.0	7.42	7.05	6.87	0.857	0.0290	0.0350	
08/29/2009	17.0	17.0	7.42	7.02	6.93	0.746	0.0300	0.0340	
08/30/2009	17.5	17.0	7.46	7.01	6.84	0.84	0.0300	0.0350	
08/31/2009	17.5	17.5	7.29	6.70	6.82	0.842	0.0290	0.0350	
09/01/2009	17.5	17.5	7.41	6.89	6.86	0.739	0.0310	0.0340	23.1
09/02/2009	18.0	17.5	7.87	7.02	8.07	0.963	0.0300	0.3380	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
09/03/2009	17.5	18.0	7.35	7.01	7.19	0.728	0.0290	0.0500	
09/04/2009	17.0	18.0	7.30	6.87	7.26	0.762	0.0550	0.0490	
09/05/2009	17.0	17.5	7.42	7.00	7.64	0.717	0.0360	0.1120	
09/06/2009	16.0	17.0	7.18	6.80	7.40	1.067	0.0390	0.0950	
09/07/2009	16.0	17.0	7.30	6.73	7.16	1.245	0.0510	0.0800	
09/08/2009	16.5	17.0	7.46	6.90	5.68	1.224	0.0420	0.0340	21.6
09/09/2009	15.5	16.5	7.40	6.95	6.64	1.088	0.0340	0.0300	
09/10/2009	17.0	16.5	7.39	6.95	6.84	1.079	0.0340	0.0960	
09/11/2009	17.0	17.0	7.43	7.00	6.59	0.989	0.0340	0.0300	
09/12/2009	18.0	17.0	7.39	7.07	6.68	1.121	0.0340	0.0300	
09/13/2009	18.5	17.5	7.40	6.97	6.65	0.936	0.0350	0.0300	
09/14/2009	17.0	17.5	7.43	6.95	6.72	0.986	0.0340	0.0370	
09/15/2009	17.5	17.5	7.49	7.00	6.67	1.016	0.0340	0.0310	
09/16/2009	17.5	17.5	7.34	6.96	6.65	0.954	0.0320	0.0300	
09/17/2009	17.0	17.5	7.43	6.98	6.67	0.982	0.0310	0.0310	
09/18/2009	16.0	17.0	7.44	6.79	6.64	0.926	0.0300	0.0300	
09/19/2009	16.0	17.0	7.52	6.90	6.71	0.853	0.0320	0.0310	
09/20/2009	16.0	17.0	7.47	6.79	6.69	0.853	0.0320	0.0360	
09/21/2009	15.0	16.0	7.41	6.88	7.56	0.838	0.0320	0.1030	23.1
09/22/2009	15.0	15.5	7.51	6.98	7.19	0.774	0.0300	0.0350	
09/23/2009	15.5	15.5	7.41	7.00	7.16	0.892	0.0300	0.0340	23.9
09/24/2009	15.5	15.5	7.39	7.06	7.28	0.911	0.0300	0.0350	
09/25/2009	15.0	15.5	7.39	6.99	7.79	0.856	0.0320	0.1280	24.9
09/26/2009	15.5	15.5	7.51	7.07	7.51	0.884	0.0340	0.1440	25.3
09/27/2009	15.0	15.0	7.56	7.01	7.23	0.877	0.0330	0.0340	
09/28/2009	15.0	15.0	7.60	7.08	7.41	0.811	0.0320	0.0550	23.8
09/29/2009	13.5	14.5	8.45	7.21	7.55	0.852	0.0280	0.0430	24.0
09/30/2009	13.5	14.0	7.45	7.02	6.46	1.042	0.0300	0.0320	24.8
10/01/2009	14.0	14.0	8.14	7.05	7.75	0.892	0.0300	0.1190	
10/02/2009	14.0	13.5	7.80	7.16	7.45	0.854	0.0310	0.2920	
10/03/2009	13.5	14.5	8.16	7.21	6.28	0.962	0.0310	0.0300	
10/04/2009	12.5	13.0	8.02	7.17	5.89	0.776	0.0300	0.0340	
10/05/2009	12.0	13.0	7.97	7.04	6.90	0.922	0.0280	0.0650	23.7
10/06/2009	12.0	12.5	7.69	7.06	7.62	0.851	0.0270	0.0660	
10/07/2009	11.5	12.5	7.59	7.04	7.00	0.738	0.0250	0.0300	23.7
10/08/2009	11.5	12.5	7.93	7.20	6.92	0.748	0.0260	0.0290	
10/09/2009	11.5	12.0	7.87	6.99	7.01	0.727	0.0260	0.0290	
10/10/2009	11.5	12.0	7.88	7.00	7.11	0.71	0.0250	0.0340	
10/11/2009	11.0	11.0	7.81	7.19	7.18	0.71	0.0260	0.0330	
10/12/2009	10.5	11.0	7.55	7.09	7.39	0.662	0.0240	0.0320	24.1
10/13/2009	10.0	11.0	8.02	7.20	7.77	0.702	0.0250	0.0500	
10/14/2009	11.0	11.5	8.37	7.23	7.19	0.761	0.0250	0.0320	
10/15/2009	12.0	11.5	7.58	7.01	6.85	1.239	0.0270	0.0300	22.9
10/16/2009	12.0	12.0	7.28	6.89	7.47	0.947	0.0260	0.1980	
10/17/2009	13.0	13.0	7.74	7.10	7.26	0.649	0.0260	0.0310	
10/18/2009	13.0	12.5	7.10	6.89	7.11	1.802	0.0260	0.0310	
10/19/2009	13.0	13.0	7.32	6.86	7.79	0.93	0.0290	0.0410	
10/20/2009	13.5	13.0	7.43	7.03	8.29	0.685	0.0280	0.1220	
10/21/2009	12.5	13.0	7.81	7.18	6.85	0.613	0.0250	0.0310	
10/22/2009	12.5	12.5	7.23	6.87	6.79	0.637	0.0300	0.1400	
10/23/2009	12.5	12.5	7.85	6.98	6.72	0.543	0.0360	0.0320	
10/24/2009	12.5	13.0	7.60	6.86	6.54	0.845	0.0260	0.0450	
10/25/2009	12.0	12.5	7.38	6.79	6.55	0.881	0.0300	0.0410	
10/26/2009	11.5	12.5	7.55	6.95	6.57	0.594	0.0250	0.0350	20.4
10/27/2009	11.5	11.5	7.25	6.53	6.63	3.227	0.0550	0.0560	
10/28/2009	10.5	11.5	7.30	6.59	5.16	1.303	0.0330	0.0380	

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
10/29/2009	10.5	11.5	7.21	6.75	5.86	0.736	0.0280	0.0410	
10/30/2009	10.5	11.5	7.45	6.87	6.33	0.675	0.0300	0.0470	
10/31/2009	11.5	11.5	7.29	6.60	6.38	1.165	0.0700	0.0570	
11/01/2009	12.0	11.5	7.16	6.52	6.16	4.786	0.0430	0.0450	
11/02/2009	10.5	11.5	7.09	6.41	5.85	0.667	0.0290	0.0550	13.6
11/03/2009	10.0	11.0	7.26	6.90	6.29	0.458	0.0320	0.0690	
11/04/2009	9.5	10.5	7.18	6.76	6.42	0.578	0.0330	0.2470	
11/05/2009	9.5	10.5	7.40	6.84	6.44	0.518	0.0270	0.0630	
11/06/2009	10.5	10.0	7.33	6.80	6.31	0.556	0.0260	0.1450	
11/07/2009	10.5	10.0	7.28	6.42	5.91	1.846	0.0390	0.0390	
11/08/2009	10.5	11.0	7.11	5.95	5.29	2.368	0.0570	0.0390	
11/09/2009	9.0	10.0	6.89	5.60	5.25	2.955	0.0900	0.0640	
11/10/2009	9.0	10.0	6.89	6.08	5.25	2.955	0.0290	0.0640	
11/11/2009	9.0	9.5	6.96	6.09	5.06	1.346	0.0290	0.0950	
11/12/2009	8.5	9.5	7.03	6.01	5.28	2.929	0.0450	0.0770	
11/13/2009	8.5	9.0	6.94	6.34	5.34	1.536	0.0290	0.0820	
11/14/2009	7.5	9.0	6.89	6.28	5.65	1.767	0.0300	0.0610	
11/15/2009	7.5	8.5	7.41	6.28	5.61	1.43	0.0290	0.0530	
11/16/2009	13.0	9.5	7.04	6.52	5.90	2.61	0.0330	0.0570	
11/17/2009	10.5	9.5	7.13	6.33	5.79	1.111	0.0600	0.0410	
11/18/2009	8.0	10.0	7.18	6.29	5.52	1.89	0.0360	0.0450	
11/19/2009	8.0	10.0	7.07	6.19	5.43	1.53	0.0270	0.0520	
11/20/2009	8.5	9.0	7.10	6.24	5.82	1.29	0.0250	0.0450	
11/21/2009	8.0	8.5	7.00	6.23	5.75	1.44	0.0300	0.0400	
11/22/2009	8.5	9.0	6.94	6.21	5.84	1.97	0.0260	0.0440	
11/23/2009	11.0	9.0	7.10	6.12	5.62	2.384	0.0250	0.0430	
11/24/2009	10.0	10.0	7.23	6.54	5.92	2.221	0.0280	0.0430	10.0
11/25/2009	10.0	10.0	7.31	6.44	6.00	1.345	0.0280	0.0470	
11/26/2009	10.0	9.5	7.17		6.02	0.994		0.0530	
11/27/2009	10.0	10.0	7.22		6.10	1.555		0.0420	
11/28/2009	10.0	10.0	7.20		6.26	6.745		0.0480	
11/29/2009	10.0	10.0	7.13		6.13	2.613		0.0450	
11/30/2009	9.0	10.0	7.16	6.52	6.05	1.055	0.0360	0.0380	
12/01/2009	9.0	9.5	7.28	6.81	6.24	0.978	0.2910	0.0390	10.9
12/02/2009	9.0	8.5	7.40	6.89	6.20	0.888	0.0270	0.0410	
12/03/2009	8.0	8.5	7.31	6.62	6.19	0.834	0.0250	0.0390	
12/04/2009	7.5	8.5	7.24	6.62	6.27	0.743	0.0610	0.0380	
12/05/2009	7.5	7.5	7.07	6.51	6.15	0.717	0.0250	0.0430	
12/06/2009	7.0	8.0	7.34	6.82	6.36	0.747	0.0260	0.0370	
12/07/2009	6.5	7.5	7.41	6.86	6.27	0.722	0.0280	0.0380	
12/08/2009	6.0	6.0	7.36	6.86	6.33	0.651	0.0250	0.0390	12.3
12/09/2009	5.0	5.5	7.22	6.64	6.30	0.73	0.0260	0.0500	
12/10/2009	4.5	5.0	7.17	6.72	6.04	0.51	0.0270	0.1290	
12/11/2009	4.0	5.0	7.22	6.88	6.04	0.46	0.0860	0.0640	
12/12/2009	3.5	5.0	7.28	6.83	5.89	0.64	0.0370	0.0490	
12/13/2009	4.5	4.5	7.35	6.81	5.71	0.63	0.0270	0.0480	
12/14/2009	5.0	5.0	7.26	6.74	5.82	0.55	0.0270	0.0380	
12/15/2009	6.0	5.5	7.21	6.84	5.76	0.699	0.0260	0.0360	13.8
12/16/2009	6.0	5.5	6.85		5.69	3.27		0.0530	
12/17/2009	7.0	6.5	6.97		5.58	3.74		0.0560	
12/18/2009	8.0	7.0	6.79		5.55	2.4		0.0510	
12/19/2009	8.5	7.5	6.96		5.58	1.172		0.0460	
12/20/2009	9.0	7.5	6.95		5.81	0.915		0.0460	
12/21/2009	9.0	8.5	7.07		5.79	1.405		0.0470	
12/22/2009	8.5	8.0	7.17		5.72	4.693		0.0450	
12/23/2009	8.0	8.0	7.25		5.39	2.028		0.0510	10.2

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
12/24/2009	7.5	8.0	7.22		5.73	1.5		0.0600	
12/25/2009	8.0	8.0	7.08		5.85	1.295		0.0530	
12/26/2009	7.5	7.5	7.10		5.97	0.821		0.0530	
12/27/2009	6.8	7.5	7.02		5.82	1.38		0.0490	
12/28/2009	6.5	7.0	7.34		6.07	0.88		0.0510	
12/29/2009	6.5	6.5	7.29		6.01	1.315		0.0440	10.6
12/30/2009	6.5	7.0	7.36		6.38	0.943		0.0410	
12/31/2009	7.5	7.0	7.28		6.44	1.69		0.0420	
01/01/2010	8.0	8.0	7.06		6.09	7.83		0.0540	
01/02/2010	7.0	8.0	7.00		5.55	4.74		0.0770	
01/03/2010	7.5	7.5	7.07		5.62	3.23		0.0630	
01/04/2010	7.5	8.5	7.11		5.67	2.21		0.0700	
01/05/2010	8.5	9.0	7.03		5.87	3.061		0.0620	
01/06/2010	8.5	8.5	7.23		5.47	2.372		0.0580	9.5
01/07/2010	8.5	8.0	7.26		5.76	3.51		0.0590	
01/08/2010	8.5	8.5	7.10		5.81	2.301		0.0490	
01/09/2010	8.5	8.5	7.25		6.21	1.805		0.0530	
01/10/2010	9.0	8.5	7.35		6.29	1.745		0.0510	
01/11/2010	9.0	8.5	7.13	6.88	6.31	1.706	0.0550	0.0410	
01/12/2010	8.5	9.0	7.19	6.71	6.37	1.597	0.0290	0.0380	11.9
01/13/2010	9.0	9.0	7.00	6.60	5.85	1.971	0.0290	0.0380	
01/14/2010	9.0	9.0	6.98	6.44	5.80	1.824	0.0280	0.0400	
01/15/2010	9.0	9.0	7.26	6.76	6.00	1.394	0.0270	0.0400	
01/16/2010	9.0	9.0	7.29	6.76	6.03	1.82	0.0270	0.0390	
01/17/2010	9.0	9.0	7.09	6.26	5.63	2.51	0.0370	0.0470	
01/18/2010	9.0	9.0	7.06	6.34	5.49	2.15	0.0340	0.0530	
01/19/2010	8.5	10.0	7.16	6.36	5.58	1.87	0.0450	0.0500	
01/20/2010	9.0	9.0	6.99	6.47	5.56	1.72	0.0290	0.0490	
01/21/2010	9.0	9.0	7.34	6.54	5.95	1.633	0.0280	0.0440	11.7
01/22/2010	9.0	9.0	7.22	6.63	6.03	1.428	0.0280	0.0400	
01/23/2010	9.5	8.5	7.11	6.70	6.15	1.435	0.0270	0.0420	
01/24/2010	8.5	9.0	7.18	6.70	6.18	1.421	0.0280	0.0420	
01/25/2010	9.0	8.5	7.18	6.80	6.25	1.537	0.0270	0.0380	
01/26/2010	9.0	9.0	7.29	6.62	6.32	1.615	0.0270	0.0370	11.8
01/27/2010	8.5	8.5	7.40	6.74	6.35	1.348	0.0270	0.0370	
01/28/2010	8.0	8.0	6.96	6.49	6.40	1.195	0.0260	36.0000	
01/29/2010	8.0	8.5	7.35	6.56	6.35	1.025	0.0260	0.0360	
01/30/2010	8.5	9.0	7.12	6.60	6.49	1.352	0.0250	0.0360	
01/31/2010	8.0	9.0	7.13	6.61	6.49	1.292	0.0260	0.0350	
02/01/2010	9.0	8.5	7.37	6.79	6.49		0.0260	0.0360	
02/02/2010	8.5	8.5	7.38	6.78	6.59	0.778	0.0270	0.0360	13.4
02/03/2010	8.5	9.0	7.35	6.50	7.20	1.19	0.0280	0.0350	
02/04/2010	9.0	9.0	7.28	6.82	6.60	1.224	0.0260	0.0350	
02/05/2010	9.0	9.0	7.38	6.82	6.61	1.108	0.0280	0.0350	
02/06/2010	8.5	8.5	6.87	6.50	6.55		0.0270	0.0350	
02/07/2010	8.5	8.5	6.91	6.46	6.11		0.0270	0.0350	
02/08/2010	8.5	8.5	7.43	6.80	6.46	0.027	0.0270	0.0350	
02/09/2010	8.5	9.0	6.97	6.46	6.86	0.992	0.0260	0.0350	12.4
02/10/2010	8.0	8.5	7.27	6.87	6.57	0.965	0.0270	0.0350	
02/11/2010	8.5	8.5	7.37	6.55	6.17	1.033	0.0260	0.0360	
02/12/2010	8.5	8.5	7.34	6.80	7.33	1.104	0.0270	0.0350	
02/13/2010	8.5	8.5	7.15	6.54	6.04	1.293	0.0280	0.0350	
02/14/2010	8.5	9.0	7.09	6.72	6.38	1.373	0.0270	0.0360	
02/15/2010	8.5	9.0	7.18	6.73	6.38	2.039	0.0280	0.0360	
02/16/2010	8.5	8.5	6.88	6.46	6.38	1.315	0.0270	0.0370	
02/17/2010	9.0	9.0	7.26	6.68	6.36	1.603	0.0270	0.0360	

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
02/18/2010	8.5	9.0	6.94	6.52	6.41	1.235	0.0270	0.0360	
02/19/2010	8.5	8.5	7.26	6.71	6.45	1.135	0.0270	0.0370	
02/20/2010	8.5	8.5	7.18	6.69	6.40	1.088	0.0260	0.0370	
02/21/2010	8.0	8.0	7.21	6.72	6.45	0.948	0.0280	0.0380	
02/22/2010	7.5	8.0	6.98	6.50	6.45	1.057	0.0260	0.0390	11.6
02/23/2010	7.5	8.0	7.36	6.84	6.70	0.899	0.0260	0.0360	
02/24/2010	8.0	7.5	7.24	6.82	6.67	1.014	0.0270	0.0360	
02/25/2010	8.0	7.5	7.14	6.65	6.61	1.723	0.0280	0.0420	
02/26/2010	8.0	8.5	7.19	6.76	6.57	4.21	0.0290	0.0360	
02/27/2010	8.5	9.0	7.03	6.52	6.52	1.43	0.0270	0.0370	
02/28/2010	8.5	9.0	7.13	6.53	6.41	1.225	0.0270	0.0370	
03/01/2010	9.0	8.5	7.37	6.75	6.58	1.128	0.0270	0.0360	
03/02/2010	9.0	9.0	6.99	6.45	6.71	1.097	0.0270	0.0360	11.4
03/03/2010	9.0	9.0	7.28	6.83	6.77	1.128	0.0270	0.0360	
03/04/2010	9.0	9.5	7.36	6.89	6.68	1.06	0.0270	0.0360	
03/05/2010	9.0	9.0	6.98	6.57	6.58	1.074	0.0280	0.0360	
03/06/2010	9.0	9.0	7.13	6.90	6.82	1.013	0.0280	0.0360	
03/07/2010	8.5	9.0	7.35	6.94	6.76	0.818	0.0280	0.0360	
03/08/2010	8.5	9.0	7.28	6.61	6.63	1.197	0.0270	0.0370	14.1
03/09/2010	8.5	8.5	7.50	6.93	6.63	1.393	0.0300	0.0410	
03/10/2010	8.0	8.5	7.38	6.93	6.59	1.048	0.0280	0.0360	
03/11/2010	8.0	8.5	7.33	6.85	6.75	0.999	0.0290	0.0380	
03/12/2010	8.5	8.5	7.39	6.96	6.71	1.173	0.0290	0.0390	
03/13/2010	8.5	8.5	7.00	6.44	6.27		0.0320	0.0430	
03/14/2010	8.0	8.0	7.21	6.38	6.14				
03/15/2010	8.0	8.5	7.30	6.58	6.52	1.392	0.0360	0.0360	10.9
03/16/2010	9.0	8.5	7.32	6.81	6.34	1.234	0.0300	0.0350	
03/17/2010	8.5	9.0	6.88	6.45	6.30	1.206	0.0330	0.0360	
03/18/2010	9.0	9.0	7.18	6.78	6.67	1.191	0.0300	0.0360	
03/19/2010	8.0	9.5	7.17	6.78	6.59	0.983	0.0310	0.0350	
03/20/2010	8.5	9.0	7.16	6.43	6.30	0.97	0.0300	0.0350	
03/21/2010	8.0	9.0	7.15	6.67	6.54	0.861	0.0320	0.0370	
03/22/2010	9.0	9.0	7.29	6.70	6.30	1.152	0.0310	0.0360	
03/23/2010	8.5	7.6	7.17	6.62	6.43		0.0310	0.0360	
03/24/2010	8.0	9.0	7.20	6.74	6.55	0.072	0.0340	0.0350	
03/25/2010	8.5	9.0	7.26	6.75	6.58		0.0300	0.0350	
03/26/2010	9.5	9.0	7.21	6.70	6.52	1.26	0.0310	0.0390	
03/27/2010	9.5	9.0	7.15	6.88	6.43	2.684	0.0320	0.1590	
03/28/2010	9.5	9.5	7.19	6.63	6.08	1.532	0.0340	0.0360	
03/29/2010	9.5	9.5	7.24	6.67	6.04	3.18	0.0310	0.0380	
03/30/2010	8.0	9.0	7.00	5.75	5.81	13	0.0320	0.0380	7.5
03/31/2010	7.0	9.0	7.02		6.08	5.76		0.0420	
04/01/2010	10.0	8.5	7.03		6.12	16		0.0380	
04/02/2010	9.0	9.0	7.24		6.09	2.69		0.0530	
04/03/2010	9.0	9.5	6.92		6.21	3.55		0.0440	
04/04/2010	9.0	9.0	7.03		6.17	2.65		0.0500	
04/05/2010	9.0	8.5	7.12	6.54	5.98	2.228	51.0000	0.0520	
04/06/2010	9.0	9.0	7.06		5.96	1.74		0.0420	
04/07/2010	9.0	9.0	7.18	6.55	6.19	1.152	0.0370	0.0430	
04/08/2010	9.0	9.0	7.27	6.71	6.50	1.717	0.0300	0.0410	12.6
04/09/2010	9.0	9.0	7.15	6.75	6.35	1.686	0.0310	0.0420	
04/10/2010	9.0	9.0	7.01	6.73	6.30	2.023	0.0300	0.0390	
04/11/2010	9.0	9.0	7.23	6.77	6.35	1.695	0.0300	0.0390	
04/12/2010	9.5	9.5	7.26	6.76	6.36	1.527	0.0300	0.0380	
04/13/2010	9.5	9.0	7.19	6.78	6.34	1.493	0.0310	0.0380	
04/14/2010	9.5	9.0	6.91	6.40	6.02	1.465	0.0300	0.0380	

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
04/15/2010	9.5	9.0	7.27	6.73	6.42	1.132	0.0310	0.0370	10.6
04/16/2010	9.5	10.0	7.25	6.72	6.36	1.293	0.0320	0.0410	
04/17/2010	9.5	9.5	7.31	6.69	6.31	1.503	0.0300	0.0370	
04/18/2010	9.5	10.0	7.35	6.62	6.17	1.346	0.0320	0.0360	
04/19/2010	10.0	10.0	6.93	6.42	6.19	1.138	0.0300	0.0370	
04/20/2010	10.0	10.0	7.31	6.67	6.42	0.707	0.0320	0.0350	
04/21/2010	10.0	10.0	6.85	6.43	6.04	1.343	0.0310	0.0350	
04/22/2010	10.0	10.0	6.92	6.46	5.96	1.367	0.0320	0.0360	
04/23/2010	10.0	11.0	7.31	6.82	6.47	1.19	0.0310	0.0360	
04/24/2010	9.5	10.5	7.31	6.84	6.45	1.13	0.0320	0.0350	
04/25/2010	10.0	10.0	7.36	6.89	6.51	1.26	0.0310	0.0360	
04/26/2010	10.0	10.5	7.37	6.90	6.47	1.034	0.0310	0.0360	12.6
04/27/2010	11.0	10.0	7.41	6.96	6.49	0.927	0.0320	0.0360	
04/28/2010	10.5	10.5	7.34	6.69	6.13	2.19	0.0350	0.0380	
04/29/2010	10.0	10.5	6.79	6.13	5.71	1.72	0.0330	0.0410	
04/30/2010	10.0	10.0	7.20	6.77	6.33	1.43	0.0330	0.0360	
05/01/2010	10.0	10.0	7.29	6.79	6.46	1.196	0.0330	0.0340	
05/02/2010	10.0	10.0	7.21	6.83	6.36	1.039	0.0340	0.0330	
05/03/2010	10.0	10.0	7.29	6.85	6.51	1.181	0.0330	0.0330	
05/04/2010	10.0	10.0	7.29	6.83	6.39	2.346	0.0350	0.0360	
05/05/2010	10.0	10.0	7.29	6.79	6.37	1.149	0.0350	0.0330	
05/06/2010	9.5	10.0	7.27	6.82	6.52	1.197	0.0340	0.0340	14.8
05/07/2010	9.5	10.0	7.34	6.77	6.51	0.99	0.0330	0.0330	
05/08/2010	10.0	10.5	7.38	6.80	6.53	1.365	0.0340	0.0340	
05/09/2010	10.0	11.0	7.42	6.82	6.61	1.145	0.0340	0.0330	
05/10/2010	10.5	11.0	7.42	6.74	6.55	1.142	0.0340	0.0330	
05/11/2010	11.0	11.0	7.30	6.91	6.46	1.194	0.0350	0.0330	
05/12/2010	10.0	11.5	7.42	6.82	6.51	1.094	0.0340	0.0330	
05/13/2010	11.0	11.0	7.50	6.82	6.63	1.249	0.0350	0.0330	
05/14/2010	11.0	11.0	7.35	6.78	6.51		0.0330	0.0330	
05/15/2010	11.5	12.0	7.37	6.65	6.56	1.33	0.0360	0.0320	
05/16/2010	12.0	12.0	7.44	6.69	6.56	1.029	0.0350	0.0320	
05/17/2010	13.0	12.5	7.47	6.80	6.64	1.607	0.0390	0.0320	13.0
05/18/2010	12.5	12.5	7.47	6.89	6.67	1.56	0.0380	0.0340	
05/19/2010	12.0	12.0	7.45	6.86	6.61	1.41	0.0430	0.0350	
05/20/2010	11.5	12.0	7.38	6.77	6.64	1.441	0.0400	0.0380	
05/21/2010	11.0	12.0	7.03	6.35	6.05	1.894	0.0390	0.0510	13.0
05/22/2010	11.0	12.0	7.08	6.27	6.12	1.427	0.0340	0.0350	
05/23/2010	11.0	12.0	7.02	6.18	6.09		0.3400	0.0380	
05/24/2010	10.5	11.0	7.12	6.60	6.33	1.218	0.0330	0.0350	
05/25/2010	11.0	11.0	7.38	6.65	6.37	0.649	0.0330	0.0340	
05/26/2010	11.0	11.5	7.30	6.58	6.55	1.073	0.0360	0.0410	
05/27/2010	11.0	11.0	7.41	6.72	6.58	1.642	0.0360	0.0460	
05/28/2010	11.5	12.0	7.37	6.65	6.34	1.602	0.0360	0.0390	
05/29/2010	11.5	12.0	7.46	6.72	6.39	1.41	0.0370	0.0380	
05/30/2010	11.5	12.5	7.40	6.69	6.29	1.587	0.0370	0.0390	
05/31/2010	11.5	12.0	7.40	6.65	6.51	1.366	0.0370	0.0410	
06/01/2010	11.5	12.0	7.27	6.65	6.51	1.614	0.0370	0.0450	
06/02/2010	12.0	12.5	7.33	6.67	6.39	1.409	0.0360	0.0380	
06/03/2010	12.0	12.5	7.01	6.10	6.01	10.35	0.0380	0.0530	
06/04/2010	12.0	12.0	6.99	6.35	5.88	3.305	0.0390	0.0440	
06/05/2010	12.0	12.0	7.06		6.24	2.008		0.0470	
06/06/2010	12.5	12.5	7.15		6.07	2.298		0.0450	
06/07/2010	12.0	12.5	7.17	6.47	6.28	1.977	0.0550	0.0400	
06/08/2010	12.0	12.0	7.20	6.42	6.21	1.992	0.0370	0.0390	11.3
06/09/2010	12.5	13.0	7.27	6.70	6.38	1.956	0.0360	0.0400	

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
06/10/2010	12.0	12.5	6.65	6.18	5.94	2.284	0.0370	0.0420	
06/11/2010	12.0	13.0	7.04	6.53	6.15	2.321	0.0380	0.0410	
06/12/2010	11.5	13.0	7.06	6.49	6.28	2.016	0.0390	0.0390	
06/13/2010	12.0	13.0	7.12	6.52	6.18	1.811	0.0380	0.0390	
06/14/2010	12.5	13.0	7.25	6.70	6.43	1.861	0.0380	0.0380	
06/15/2010	12.5	13.0	7.20	6.72	6.27	1.874	0.0370	0.0390	
06/16/2010	12.5	12.5	7.08	6.43	6.43	1.945	0.0380	0.0390	
06/17/2010	12.2	13.0	7.35	6.68	6.52	1.825	0.0380	0.0400	13.9
06/18/2010	12.0	12.5	7.25	6.76	6.56	1.841	0.0390	0.0390	
06/19/2010	12.0	12.5	7.28	6.67	6.55	1.496	0.0380	0.0390	
06/20/2010	11.5	13.0	7.22	6.62	6.67	1.499	0.0380	0.0430	
06/21/2010	12.0	13.0	7.26	6.75	6.63	1.414	0.0400	0.0450	
06/22/2010	13.5	13.0	7.41	6.85	6.71	1.191	0.0390	0.0370	
06/23/2010	13.5	13.0	7.34	6.81	6.50	1.448	0.0390	0.0370	
06/24/2010	15.0	14.5	7.39	6.82	6.59	1.333	0.0390	0.0360	
06/25/2010	15.0	14.5	7.21	6.48	6.38	1.343	0.0400	0.0400	13.7
06/26/2010	14.0	14.0	7.37	6.71	6.63	1.167	0.0400	0.0380	
06/27/2010	14.5	14.0	7.36	6.72	6.64		0.0400	0.0370	
06/28/2010	16.0	15.5	7.40	6.75	6.61	1.075	0.0400	0.0380	
06/29/2010	15.5	15.0	7.33	6.79	6.67	1.05	0.0410	0.0370	
06/30/2010	15.0	15.0	7.07	6.46	6.37	1.516	0.0410	0.0400	15.5
07/01/2010	15.0	15.0	7.45	6.85	6.76	1.357	0.0440	0.0380	
07/02/2010	14.0	14.5	7.49	6.94	6.64	1.184	0.0440	0.0390	
07/03/2010	14.5	15.0	7.28	6.79	6.51	1.692	0.0480	0.0450	
07/04/2010	15.0	14.5	7.47	6.87	6.66	1.121	0.0420	0.0410	
07/05/2010	15.0	14.5	7.41	6.89	6.78	1.393	0.0410	0.0410	
07/06/2010	14.5	14.5	7.36	6.86	6.72	1.261	0.0420	0.0410	
07/07/2010	16.0	15.0	7.40	6.83	6.64	1.252	0.0400	0.0390	
07/08/2010	17.0	16.5	7.27	6.81	6.81	1.301	0.0410	0.0380	
07/09/2010	17.0	16.5	7.20	6.79	6.73	1.194	0.0400	0.0400	
07/10/2010	18.0	17.5	7.29	6.83	6.70	1.072	0.0410	0.0380	
07/11/2010	19.0	18.0	7.35	6.88	6.70	1.079	0.0420	0.0420	
07/12/2010	18.5	18.0	7.24	6.81	6.73	1.034	0.0430	0.0390	
07/13/2010	16.5	17.0	7.39	6.84	6.76	0.91	0.0420	0.0390	18.6
07/14/2010	16.5	16.5	7.24	6.85	6.82	0.867	0.0410	0.0400	
07/15/2010	17.0	16.5	7.32	6.91	6.78	0.821	0.0410	0.0380	
07/16/2010	18.0	17.0	7.33	6.88	6.77	0.839	0.0410	0.0390	
07/17/2010	17.5	16.5	7.40	6.93	6.88	0.871	0.0420	0.0410	
07/18/2010	18.0	16.5	7.46	6.89	6.89	1.001	0.0430	0.0420	
07/19/2010	16.0	16.0	7.48	6.95	6.88	0.929	0.0410	0.0410	
07/20/2010	17.0	17.0	7.46	6.81	6.80	0.943	0.0460	0.0410	
07/21/2010	16.5	16.5	7.56	6.89	6.78	0.91	0.0460	0.0420	
07/22/2010	17.0	17.0	7.48	6.92	6.78	1.025	0.0450	0.0390	
07/23/2010	17.5	17.0	7.17	6.73	6.63	0.957	0.0460	0.0410	
07/24/2010	17.5	17.5	7.29	6.74	6.80	1.061	0.0290	0.0400	
07/25/2010	18.0	18.0	7.27	6.75	6.84	1.008	0.0300	0.0390	
07/26/2010	19.0	18.0	7.43	6.87	6.77	0.998	0.0310	0.0390	
07/27/2010	18.0	18.5	7.49	6.88	6.78	0.93	0.0290	0.0370	17.0
07/28/2010	18.0	18.5	7.35	6.87	6.83	0.999	0.0300	0.0380	
07/29/2010	18.0	18.0	7.33	6.86	6.84	0.936	0.0300	0.0390	
07/30/2010	18.5	18.0	7.45	6.92	6.85	0.93	0.0300	0.0390	
07/31/2010	18.0	18.0	7.39	6.88	6.79	0.888	0.0300	0.0430	
08/01/2010	16.5	17.0	7.39	6.68	6.52	0.833	0.0300	0.0730	
08/02/2010	17.5	17.0	7.37	6.93	6.81	0.916	0.0310	0.0530	
08/03/2010	18.0	17.5	7.43	6.92	6.81	0.775	0.0300	0.0740	
08/04/2010	18.5	17.5	7.39	6.99	6.87	0.789	0.0320	0.0420	20.8

	Temperature		pH			Turbidity (NTU)			Alkalinity
Date	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
08/05/2010	17.5	17.5	7.47	6.95	6.90	0.806	0.0300	0.0410	
08/06/2010	18.5	18.0	7.50	6.94	6.89	0.765	0.0310	0.0440	
08/07/2010	18.5	18.5	7.47	7.00	6.86	0.669	0.0330	0.0430	
08/08/2010	18.5	18.0	7.39	6.93	6.91	0.499	0.0290	0.0440	
08/09/2010	18.5	18.0	7.49	7.05	6.91	0.293	0.0290	0.0450	19.4
08/10/2010	17.0	18.0	7.57	7.09	6.94	0.927	0.0300	0.0440	
08/11/2010	17.0	17.0	7.57	7.06	6.89	0.834	0.0280	0.0450	
08/12/2010	17.5	17.5	7.47	6.90	6.87	0.821	0.0290	0.0410	
08/13/2010	17.5	17.5	7.40	6.96	6.80	0.815	0.0280	0.0400	
08/14/2010	17.5	17.5	7.42	7.00	6.77	0.83	0.0300	0.0390	
08/15/2010	19.5	18.0	7.35	6.91	6.81	0.83	0.0290	0.0420	
08/16/2010	20.0	18.5	7.42	6.99	6.89	0.935	0.0310	0.0430	
08/17/2010	19.5	19.5	7.38	6.98	6.94	0.871	0.0290	0.0420	
08/18/2010	17.5	17.0	7.51	7.03	6.94	0.875	0.0300	0.0430	
08/19/2010	17.5	18.0	7.49	7.04	6.95	0.838	0.0310	0.0470	
08/20/2010	16.0	16.5	7.52	7.39	7.07	0.883	0.0310	0.0470	
08/21/2010	17.0	16.5	7.57	7.06	6.98	0.883	0.0300	0.0480	
08/22/2010	17.0	16.5	7.54	7.12	7.01	0.884	0.0300	0.0480	
08/23/2010	16.0	17.0	7.41	7.08	6.98	0.804	0.0310	0.0510	
08/24/2010	17.5	16.5	7.50	6.82	6.86	1.566	0.0300	0.0430	
08/25/2010	17.5	19.0	7.42	6.81	6.61	0.438	0.0380	0.0530	
08/26/2010	17.5	19.0	7.45	6.98	6.97	0.811	0.0310	0.0480	
08/27/2010	16.5	17.0	7.56	7.10	6.94	0.781	0.0310	0.0510	
08/28/2010	16.5	16.5	7.32	6.92	6.95	0.601	0.0370	0.0480	
08/29/2010	15.5	16.5	7.35	6.95	7.00	0.424	0.0350	0.0470	
08/30/2010	16.0	15.5	7.60	7.21	6.91	0.705	0.0350	0.0480	
08/31/2010	15.0	15.5	7.57		6.71	0.673		0.0730	
09/01/2010	15.0	15.5	7.42		6.95	7.47		0.0450	
09/02/2010	16.5	15.5	7.36		6.86	0.793		0.0450	
09/03/2010	17.5	16.5	7.38		6.79	0.738		0.0610	
09/04/2010	17.0	17.0	7.40		6.90	0.71		0.1290	
09/06/2010	14.5	15.5	7.40		6.95	0.85		0.0400	
09/05/2010	14.5	17.0	7.40		6.90	0.823		0.1440	
09/07/2010	15.5	15.5	7.53		6.86	6.89		0.0420	
09/08/2010	15.0	15.5	7.58		6.82	0.838		0.0410	21.5
09/09/2010	15.5	15.5	7.54		6.84	0.916		0.0430	
09/10/2010	15.0	15.5	7.31		6.92	0.82		0.0450	
09/11/2010	15.0	15.0	7.65		6.95	0.756		0.0420	
09/12/2010	15.0	15.0	7.68		6.90	0.777		0.0430	
09/13/2010	15.5	15.0	7.60		6.90	0.715		0.0730	
09/14/2010	16.0	15.5	7.61		6.98	0.753		0.0460	
09/15/2010	16.5	16.5	7.53	6.98	6.94	0.75	0.0410	0.0410	
09/16/2010	16.5	16.5	8.01		7.04	0.805		0.0420	
09/17/2010	16.5	16.0	8.25		7.00	0.85		0.0420	
09/18/2010	16.5	16.0	7.37		6.86	0.738		0.0430	
09/19/2010	16.0	16.0	7.60		6.91	1.035		0.0480	
09/20/2010	16.0	16.0	7.31		6.31	1.462		0.1510	
09/21/2010	15.0	15.5	7.48		6.32	1.51		0.0560	13.9
09/22/2010	14.5	15.0	7.65		6.61	0.93		0.0450	
09/23/2010	15.0	15.0	7.56		6.69	0.899		0.0450	
09/24/2010	14.0	15.0	7.77		6.79	0.822		0.0440	
09/25/2010	14.5	14.5	7.67		6.73	0.671		0.0500	
09/26/2010	15.0	15.0	7.51		6.69	0.817		0.0400	
09/27/2010	15.5	15.5	7.42		6.82	0.795		0.0400	
09/28/2010	15.0	15.5	7.49	6.97	6.86	0.808	0.1500	0.0470	
09/29/2010	16.5	16.5	7.44	6.95	6.94	0.869	0.0540	0.0430	17.1

Date	Temperature		pH			Turbidity (NTU)			Alkalinity
	Raw Water	Treated Water	Raw Water	Treated (OP)	Treated (NP)	Raw Water	Treated (OP)	Treated (NP)	Raw Water
09/30/2010	17.0	16.5	7.33	6.90	6.85	0.851	0.0300	0.0410	
10/01/2010	16.0	16.5	7.34		6.77	0.652		0.0400	
10/02/2010	15.5	16.0	7.43		6.77	0.644		0.0400	
10/03/2010	15.5	16.0	7.46		6.83	0.648		0.0400	
10/04/2010	15.0	15.0	7.44		6.69	0.642		0.0400	
10/05/2010	14.5	15.0	7.86		6.80	0.634		0.0410	
10/06/2010	14.5	14.5	7.69	7.06	6.80	0.552	0.0620	0.0400	20.6
10/07/2010	13.5	15.0	7.79	7.07	6.91	0.842	0.0330	0.0440	
10/08/2010	14.0	14.5	7.80	7.12	6.85	0.621	0.0310	0.0410	
10/09/2010	14.0	15.0	7.81	7.14	6.89	0.615	0.0290	0.0410	
10/10/2010	15.0	14.5	7.37	7.14	6.88	0.687	0.0310	0.0420	
10/11/2010	14.5	15.0	7.31	6.38	6.12	5.525		0.2350	
10/12/2010	13.0	13.5	7.36	6.83	6.18	0.921	0.2170	0.0410	15.5
10/13/2010	12.0	13.0	7.49	6.84	6.52	0.644	0.0350	0.0460	
10/14/2010	12.0	13.0	7.51	6.89	6.59	0.665	0.0320	0.0410	
10/15/2010	12.0	12.5	7.49	6.16	6.57	0.634	0.0300	0.0420	
10/16/2010	12.0	12.0	7.58	7.07	6.51	0.654	0.0310	0.0410	
10/17/2010	11.0	12.0	7.36	7.09	6.69		0.0340	0.0410	
10/18/2010	10.0	11.5	7.56	7.06	6.57	0.426	0.0310	0.0420	
10/19/2010	10.0	11.0	7.54	7.19	6.69	0.423	0.0300	0.0410	
10/20/2010	10.5	11.5	7.42	7.01	6.64	0.409	0.0310	0.0410	
10/21/2010	11.0	11.5	7.51	7.06	6.71	0.479	0.0300	0.0410	
10/22/2010	11.0	11.5	7.54	7.06	6.58	0.47	0.0300	0.0400	
10/23/2010	12.0	11.5	7.65	7.12	6.65	0.348	0.0300	0.0400	
10/24/2010	12.0	12.0	7.42	7.03	6.58	0.42	0.0320	0.0430	
10/25/2010	12.0	12.0	7.20		6.10	4		0.0430	
10/26/2010	11.0	11.5	6.95		5.70	3.096		0.0450	
10/27/2010	11.5	11.5	7.22		5.93	2.188		0.0430	
10/28/2010	10.5	11.5	7.10		6.01	0.783		0.0420	
10/29/2010	11.0	11.5	7.31		6.27	0.802		0.0440	
10/30/2010	11.0	11.0	7.38		6.27	1.6		0.0420	
10/31/2010	11.0	11.0	7.24		6.36	1.01		0.0410	
11/01/2010	11.5	11.5	7.33		6.28	1.221		0.0410	
11/02/2010	11.0	12.0	7.21		5.83	4.79		0.0440	
11/03/2010	12.0	12.0	7.16		5.53	3.61		0.0480	
11/04/2010	11.5	12.0	7.18		5.58	2.19		0.0480	
11/05/2010	11.0	11.5	7.17		5.64	1.65		0.0550	
11/06/2010	11.5	12.0	6.93		5.61	1.7		0.0510	
11/07/2010	11.5	12.0	6.95		5.59	3.72		0.0590	
11/08/2010	10.5	11.5	7.02		5.54	3.95		0.0570	
11/09/2010	10.0	11.5	7.02		5.63	2.65		0.0540	
11/10/2010	10.0	11.5	7.24		5.73	2.64		0.0530	
11/11/2010	9.0	10.0	7.15		5.49	2.08		0.0580	
11/12/2010	8.5	10.5	6.63		5.71	1.85		0.0560	
11/13/2010	9.0	10.0	7.22		5.94	1.4		0.0560	
11/14/2010	9.0	10.0	7.19		5.87	1.79		0.0480	
11/15/2010	10.0	10.0	7.20		6.07	1.29		0.0480	
11/16/2010	12.0	10.5	7.30		6.04	0.868		0.0450	10.5
11/17/2010	12.0	11.5	7.25		5.84	1.391		0.0470	
11/18/2010	10.0	11.5	7.30		5.86	0.87		0.0480	
11/19/2010	11.0	11.0000	7.23		5.81	3.36		0.0480	

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APPENDIX F – ODHS WATER SYSTEM SURVEY

KELLER associates

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Oregon
Theodore R. Kulongoski, Governor

Department of Human Services
Public Health Division
800 NE Oregon Street
Portland, OR 97232-2162
(971) 673-0410
(971) 673-0694 - FAX
(971) 673-0372 - TTY-Nonvoice

January 12th, 2010

Received 1/15/10

Steve Starner
City of Silverton, PWS #4100823
306 S. Water St.
Silverton, OR 97381

Dear Steve:

Thank you for your time and assistance in conducting a **Water System Survey at the City of Silverton on November 17th, 2009**. The main purpose of the water system survey is to evaluate the entire water system in terms of supplying safe drinking water to the public. I have enclosed a copy of the report for your records. Please let me know if any corrections need to be made.

The first page of the report lists significant deficiencies in the system that will have to be corrected as soon as possible. A new rule requires that all systems using a surface water source must submit a written plan within 45 days describing how and when the deficiencies will be corrected. **A corrective action plan must be submitted by March 2nd, 2010.** I recommend that you correct the deficiencies as soon as possible, and send written verification that the deficiencies listed were corrected and the dates of correction.

The significant deficiencies and rule violations noted are as follows:

1. **Tracer study needs to be redone.** The tracer study done in 2002 is not valid due to 1) the study used plant flow instead of demand flow data, 2) reservoir was not at lowest operating level during the study, and 3) lack of including the 1 MG reservoir as a contact chamber in the original tracer study. Therefore, a tracer study that uses demand flow and includes both treatment plant reservoirs is required to determine the actual amount of contact time available. The tracer study should be done from the point of chlorination to the first user. If you would like assistance conducting a tracer study at no cost to you, we have a circuit rider contract with HBH Consulting Engineers. You can contact Robert Henry at 503-625-8065 and let him know you want to use the DWP circuit rider program for a tracer study. If you wish to use your own consultant or staff, I have attached a form that can be used to help ensure that the tracer study is done properly. **If you decide to do the tracer study in-house, please submit a proposal to me for how it will be conducted prior to conducting the study so that I can review and approve it.** Once complete, submit a copy of the tracer study results to me as well.

2. **No means to adequately determine flow rate on contact chamber effluent lines.** In order to do the tracer study, there must be some way to determine the demand flow on the effluent line of the reservoirs used for contact time. One way to do this is through the installation of effluent flowmeters on both treatment plant reservoirs. These meters are important to accurately determine the demand flow on the system. Another valuable use of the meters is to help identify water loss rates. Considering the fact that water flows from the treatment plant by gravity to the distribution **and** is pumped up to the high level reservoir off the same effluent line, determining demand flow may be somewhat complex; I recommend getting help from an engineer that has experience conducting tracer studies.
3. **Turbidity profiles** not conducted at least quarterly. Individual filter performance should be reviewed at least quarterly by conducting a turbidity profile on each filter. The SCADA system can be used to review measured turbidity during the filter-to-waste cycle following a backwash. I have enclosed a turbidity profile example as well as some information on conducting a backwash which you may find helpful. Temporary spikes in finished water turbidity are a common occurrence following a backwash. The turbidity profile can be used to determine appropriate backwash and filter-to-waste times, such that these initial spikes are minimized. An optimized backwash process should keep spikes experienced after the filters are brought on-line to levels below 0.3 NTU. Turbidity should drop to below 0.1 NTU within the first 15 minutes.
4. **Master Plan** is not current. The system does not have an approved master plan. *Note: The city has indicated that it is in the process of selecting an engineer to complete a Master Plan and anticipates it will be done around May 2010.*

In addition, I have the following comments and recommendations:

1. The Drinking Water Program (DHS-DWP) has established criteria for determining whether a system should be considered to have "outstanding performance." Systems that are designated outstanding performers may have their water system survey frequency reduced from every 3 years to every 5 years. Although your water system did not meet the established criteria, please review the enclosed handout to see what steps you can take in the future towards receiving this designation.
2. Comprehensive Performance Evaluations (CPEs) done on the new plant in 1995 and 2000 rated it at 2.0 log removal for giardia due to lack of filter-to-waste after backwash, lack of individual filter effluent turbidimeters, and lack of filtered water turbidity consistently being below 0.1 NTU. Improvements made in 2001 corrected these deficiencies, therefore the new plant can be given a rating of 2.5 log. However, since the old plant has never had a CPE done (and due to its age) it must be rated at 2.0 log

removal for giardia and the disinfection requirement remains at 1.0 log for the entire system. If you are interested in having me do a CPE on the old plant to see if it meets the criteria for 2.5 log giardia removal so that the system's disinfection requirement can be lowered to 0.5 log, please let me know.

3. Operator indicated that settled water turbidity is captured and recorded by SCADA system but not reviewed. I recommend reviewing settled water turbidity daily to ensure optimization goals are met.
4. Since sodium hypochlorite addition only occurs normally on the new filter plant effluent line, it must be proportional to flow on the combined effluent line of both plants (if it isn't already). See schematic on page 4 for more information.
5. Ideally, jar testing would be done during changing water quality, to determine the best coagulant dosage. Since your plant is relatively small, it may take longer to jar test than it does to run through the plant, so it may not be beneficial. However, special care should be taken when turbidity or other water quality changes occur to ensure that the coagulant dosage is optimized for removal of contaminants. I have included a handout entitled "Jar Test Standard Operating Procedure" that you may find helpful. You may also want to investigate the use of a bench top device known as a Coagulant Charge Analyzer (CCA). The CCA reportedly can provide approximate chemical dosages more quickly than jar testing.
6. All chemical feed pumps should be calibrated annually at different speeds and the results graphed so that the pump curve can be evaluated. Using the draw-down tube to measure ml/minute at only one speed is not a full pump calibration. (Note: handout left with operator during survey).
7. Locate the overflow outlet for the two treatment plant reservoirs and verify that it is protected with either a flap valve or heavy duty screen.
8. Continue working on determining the system leakage and taking steps to reduce it.
9. Consumer confidence reports (CCRs) are due to the DHS-DWP no later than July 1st of each year. Although the CCR certification forms are not due until October, I recommend sending both in before the July deadline.
10. The Area Wide Optimization Program (AWOP) seeks to assist operators in optimizing the performance of each treatment process in order to meet optimization goals. The optimization goals are for turbidity (see AWOP handout) and are designed to be more stringent than those required under regulation in order to provide maximum public health protection and achieve optimum filtration performance. The program is voluntary, but is strongly encouraged. If you would like more information, please contact Evan Hofeld (971) 673-0419.
11. A summary of your monitoring requirements can be found on page 13. Please maintain a copy of this page and refer to it for future monitoring scheduling. NOTE: arsenic

tested has been reduced to once every 9 years. An asbestos test is required before the end of 2010; I recommend doing it as soon as possible. As you are aware, monthly routine coliform testing has been increased to 10 per month since the last survey.

If you have any questions or concerns, or would like this in an alternate format, please contact me at (971) 673-0410. Your cooperation is appreciated.

Sincerely,

Gregg Baird, REHS
Registered Environmental Health Specialist
Drinking Water Program
www.oregon.gov/DHS/ph/dwp

encl: Tracer Study Procedures handout (3 pgs)
Turbidity Profile example (2 pgs)
Tech Brief: Filter Backwashing (4 pgs)
Outstanding Performance fact sheet (1 pg)
Jar Test Standard Operating Procedure (5 pgs)
Water Treatment Plant Optimization Goals handout (1 pg)

cc: Greg DeBlase, Marion County Environmental Health

APPENDIX G – CAPITAL IMPROVEMENT PLAN

KELLER associates

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Silverton, Oregon
2010 Water Master Plan: Capital Improvement Projects

Project Identifier	Priority 1 Improvements	Opinion of Probable Cost	Percent SDC Eligible*	SDC Amount	SDC Comment
1A_RS	Rate Study Update	$ 35,000	50%	$ 17,500	Allocate SDC portion of study to growth.
1A_SC	Silver Creek Water Supply and Pump Station (by others)	$ 1,759,000	56%	$ 985,040	Assumes 100% of pipeline cost and the percent increase in screen capacity attributed to growth
1A.1	New 2 MG Storage Tank and Booster Pump	$ 2,767,000	80%	$ 2,213,600	Storage volume primarily needed for growth (existing deficit is only 0.03 MG). However, storage does improve fire protection and redundancy to overall system. Booster pump primarily for backup to Edison Booster.
1A.2	2nd Supply to Anderson PRV Zone	$ 109,000	38%	$ 41,420	Upgrade provides backup to existing zone, mutually benefits existing and future users. Additional PRV supply becomes more critical with growth.
1A.3	Transmission to West Plateau Service Area	$ 565,000	30%	$ 169,500	Upgrade provides backup to existing zone, trasmission also recommended with new tank, mutually benefits existing and future users
1A.4	WTP Facility Planning Study	$ 80,000	50%	$ 40,000	Needed primarily because of growth. However, evaluations of existing facilties benefits existing and future users.
1B	Water Treatment Plant Upgrades	$ 792,000	0%	$ -	Primarily intended to correct existing defficiencies.
1C	Silver Creek Plaza Area Improvements	$ 494,000	0%	$ -	Primarily addresses existing fire protection deficiencies.
1D	Western Avenue Improvements	$ 205,000	0%	$ -	Primarily addresses redundant supply to school. Off-site piping facilitate adjacent to undeveloped parcels not SDC eligible, but could be recuperated at time of development.
1E	Breyonna Way Loop	$ 35,000	0%	$ -	Primarily addresses redundant supply and looping needs.
1F	N. 3rd Street Improvements	$ 159,000	0%	$ -	Primarily addresses inadequate fire protection to existing commercial areas.
1G	Washington and Lincoln Street Improvements	$ 367,000	0%	$ -	Allows abandonment of existing lines.
1H	Kent Street and Sweden Circle	$ 37,000	0%	$ -	Loops existing line.
1I	Woodland Drive NE and Oregon Garden/Relocate backflow prevention on Oregon Garden	$ 210,000	0%	$ -	Needed for redundant supply source. Off-site piping facilitate adjacent to undeveloped parcels not SDC eligible, but could be recuperated at time of development.
1J	Hobart Road Improvements	$ 278,000	23%	$ 63,940	Replaces existing undersized lines. However, large diameter pipelines are intended for future transmission and will accommodate growth adjacent to pipeline.
1K	New High Level Pumphouse	$ 664,000	60%	$ 398,400	Mutually benefits existing and future users. However, expansion (including building) is needed because of growth. If no growth anticipated, then improvements would be limited to minor upgrades.
	Total (Priority 1)	*$ 8,556,000*		*$ 3,929,400*	
Project Identifier	**Priority 2 Improvements**	**Opinion of Probable Cost**	**Percent SDC Eligible**		**SDC Comment**
2A	N. 2nd Street Improvements	$ 309,000	13%	$ 40,170	Replaces existing undersized lines. However, large diameter pipelines are intended for future transmission and will accommodate growth. Upsize portion of costs attributed to SDC.
2B	Cowing to Smith Improvements	$ 422,000	0%	$ -	Primarily intended to replace existing undersized lines.
2C	Fiske Street Improvements	$ 205,000	0%	$ -	Replaces existing lines.
2D	Industry Way Improvements	$ 256,000	0%	$ -	Provides fire protection to existing structures.
2E	Pioneer and Evans Valley Improvements	$ 82,000	26%	$ 21,320	Includes pipeline upsize costs only.
2F	Oak Street Improvements	$ 413,000	40%	$ 165,200	Primarily benefits existing users with improved fire protection and pressures. Improvements also needed for looping and supply for new growth and expansion of pressure zones.
2G	Industrial Area Improvements	$ 350,000	23%	$ 80,500	Upsize costs allocated to SDC. Project will probably be developer funded.
2H	Main and 5th Improvements	$ 464,000	0%	$ -	Replaces existing small diameter pipelines.
2I	Well and Orchard Improvements	$ 211,000	0%	$ -	Improves local fire protection.
2J	Extend Service to Future Park	$ 28,000	0%	$ -	
2K	Future 2 MG Tank	$ 3,034,000	45%	$ 1,365,300	Only allocated additional 0.9 MG projected need for 2035 planning period. Allocation beyond planning period is not SDC eligible.
2L	Lewis Street Improvements	$ 284,000	0%	$ -	Primarily addresses existing fire protection deficiencies.
2M	Water Street Improvements	$ 820,000	14%	$ 114,800	Replaces existing line, and provides improved transmission. Transmission improvements needed to accommodates development to south. If required for growth, only upsize costs are eligible for SDC. Keller Associates recommends coordinating with development need.
2N	Pine Street Improvements	$ 128,000	15%	$ 19,200	Primarily needed to improve local fire protection. However, upsizing of new pipeline provides some benefit for transmission for new growth.
2O	Keene and Ash Street Improvements	$ 367,000	0%	$ -	Replaces existing older and undersized pipelines.
2P	High Level Tank Improvements	$ 255,000	0%	$ -	Upgrades and repairs needed regardless of development.
2Q	Water Treatment Plant Upgrades	$ 9,999,000	9%	$ 899,910	Costs assumed plant is sized to replace existing treatment plant capacity. If plant is expanded, SDC should be reevaluated. Clearwell improvements intended to expand capacity. Additional land will accommodate future expansions (not included as SDC eligible at this time because it will primarily benefit growth beyond 2035 planning period).
	Total (Priority 2)	*$ 17,627,000*		*$ 2,706,400*	

Project Identifier	Priority 3 Improvements	Opinion of Probable Cost	Percent SDC Eligible		SDC Comment
3A	Setness St, Quarry Ave, and Lanham Lane	$ 1,033,000	7%	$ 72,310	Replaces existing lines and provides looping. Pipe upsizing for growth.
3B	Meridian Rd NE	$ 4,000	100%	$ 4,000	Includes only upsize costs.
3C	Commerce Court and Industry Way	$ -	100%	$ -	Development funded.
3D	N. 1st Street from Jefferson Road to Hobart Road	$ 237,000	14%	$ 33,180	Future transmission improvement. Pipe upsize costs only. Probably best to wait until development installs.
3E	Northwest 12-inch Loop (Hobart Road to Pine Street)	$ 149,000	100%	$ 149,000	Includes only upsize costs.
3F	Pine Street from April Ln to Airport Rd.	$ 539,000	15%	$ 80,850	Primarily benefits local area which is largely developed, portion of pipeline upsize cost attributed to SDC.
3G	West 12" line from Pine and April Ln, south to Railway Avenue	$ 70,000	100%	$ 70,000	Includes only upsize costs.
3H	Clearwell Pressure Zone Loop from Westfield and Center westward and north to Railway Avenue	$ 61,000	100%	$ 61,000	Includes only upsize costs.
3I	10" Connection from Safeway to Fire Department	$ 50,000	14%	$ 7,000	Includes only upsize costs.
3J	Transmission from New PRV to Anderson PRV Zone	$ 1,395,000	14%	$ 195,300	Replaces undersized existing lines. Only upsize cost allocated to SDC.
3K	Cherry Street From Phelps to Welch	$ 54,000	0%	$ -	Improves looping of existing system.
3L	James St from Western to Pine	$ 322,000	13%	$ 41,860	Includes pipeline upsize cost.
3M	Loop around old high school site	$ -	100%	$ -	Development funded.
3N	N. 2nd from C Street to TJ Lane	$ 444,000	5%	$ 22,200	Includes pipeline upsize costs.
3O	N. 1st from A to C and Front St from A to C	$ 142,000	0%	$ -	Improves existing fire protection.
3P	N. 2nd from Main to B St	$ 214,000	0%	$ -	Improves existing fire protection.
3Q	Water St from Peach to Brown St, then on Brown from N Webb to Schlador	$ 1,367,000	16%	$ 218,720	Mutual benefit. Improves transmission for new growth; improves fire protection . Pipe upsize cost allocated to SDC.
3R	Anderson PRV Zone Loop from Westfield and Center westward and northeast to Westfield and Main	$ 77,000	100%	$ 77,000	Includes only upsize costs.
3S	Future Pioneer Rd Alignment from Crestview Dr to Oak St	$ 70,000	100%	$ 70,000	Includes only upsize costs.
3T	Future Pioneer Rd Alignment from Skookum Dr and Eastview Lane to Evans Valley Rd	$ 54,000	100%	$ 54,000	Includes only upsize costs.
3U	Eastview from Tillicum to Storage Reservoir	$ 275,000	0%	$ -	Provides high pressure service to existing and future users near tank site. Likely to be development driven. No pipe upsizing.
3V	Booster and eastward extension from Eastview Dr. to Future Eastview Booster Service Area	$ 90,000	100%	$ 90,000	Includes only upsize costs.
3W	Hawk Dr and Ike Mooney Rd	$ 11,000	100%	$ 11,000	Includes only upsize costs.
3X	Extension into Silverton Mobile Home Estates	$ 230,000	0%	$ -	Anticipated to be LID funded to serve existing development.
3Y	Sunset Lane from Victor Point to Edison	$ -	100%	$ -	Development funded.
3Z	Connection from current High School site through mobile home park to Pine St	$ 154,000	0%	$ -	Anticipated to be LID funded to serve existing development.
3AA	Robinson St and Church St	$ 169,000	0%	$ -	Improves service and fire protection and local looping.
3BB	Norway from Chadwick to Oak St	$ 107,000	0%	$ -	Improves service and fire protection and local looping.
3CC	Kent Street from East Park to N. Ames St	$ 92,000	0%	$ -	Improves looping. May be best until development requires.
3DD	Maple Street near Grant and N. Water	$ 123,000	0%	$ -	Replaces existing undersized lines.
	Total (Priority 3)	*$ 7,533,000*		*$ 1,257,420*	
	TOTAL	**$ 33,716,000**		**$ 7,893,220**	

***Note - SDC eligible reflects current City policy which only reimburses pipe upsize costs. For recuperating costs for pipelines placed in front of vacant lines, the City should use a frontage assessment. If City were to reimburse based on capacity added to system rather than upsize cost, then some project costs would have additional SDC eligibile costs.**

ITEM	UNIT	UNIT PRICE
Radio Read Meter and Box installed	EA	$1,000
PRV Station With Access Vault, Drainage and SCADA	EA	$30,000
Check Valve	EA	$8,000
Onsite Hypochlorite Generation System 15ppd	EA	$40,000
Backflow prevention units	EA	$8,000
SCADA set up and integration	EA	$20,000
SCADA per site	EA	$12,000
All pipe material is PVC -		
8" Pipe - Installed with fittings and hydrants, trenching and backfill included	LF	$65
10" Pipe - Installed with fittings and hydrants, trenching and backfill included	LF	$75
12" Pipe - Installed with fittings and hydrants, trenching and backfill included	LF	$85
14" Pipe - Installed with fittings and hydrants, trenching and backfill included	LF	$95
16" Pipe - Installed with fittings and hydrants, trenching and backfill included	LF	$110
24" Pipe - Installed with fittings, trenching and backfill included	LF	$140
Upsize10" - difference between 8 and 10-inch	LF	$10
Upsize 12" - difference between 8 and 12-inch	LF	$20
Reconnect water services (includes temp. above gound water service, new service to meter, excl. asph.)	EA	$1,700
Directional Bore for Services - Includes connection	EA	$1,500
Control Density Backfill - additional cost	LF	$40
5ft width Pavement Repair (4-inches thick)	LF	$25
10 ft width pavement Repair (6-inches thick)	LF	$55
Traffic Control	LF	$3
Full Gravel Road for Maintenance Access (12 ft width)	LF	$50
Rock Excavation	CY	$150
Slope stabalization	LF	$55
Mobilization - Percent of Item Cost Sum	%	6%
Contingency - % of construction costs	%	25%
Engineering and CMS - Percent of construction costs	%	20%
Future Contingency	%	35%

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

Water Master Plan Project:
New 2 MG Storage Tank and Booster Pump

Project Identifier:
1A.1 (new facilities)

Objective**:**
This reservoir will provide for the emergency and operational storage needs of the system on the west part of Silverton. The booster will provide a backup to the Edison fire booster. In general both the booster and storage tank reduce the current vulnerability in the existing system. Storage is sized to meet 2020 needs.

Potential Issues:
Above ground vs. buried (cost assumes above ground)
Concrete vs. Steel (cost assumes concrete)
Drainage and overflow provisions

Project Location: Woodland Ave NE and Edison Rd

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Fence, security, and lighting	LS	$50,000	1	$50,000
Yard piping and connection to existing system	LS	$150,000	1	$150,000
Earthwork including drainage overflow pond	LS	$70,000	1	$70,000
2MG Prestressed Concrete Tank with concrete roof	LS	$1,000,000	1	$1,000,000
Tank ladder and access	LS	$50,000	1	$50,000
Install 1,000 gpm Booster Pump	EA	$50,000	1	$50,000
Recirculation Pump	EA	$20,000	1	$20,000
Rechlorination System	EA	$50,000	1	$50,000
Mechanical, Electrical, and Instrumentation	LS	$80,000	1	$80,000
Altitude Valve on Existing High Level tank	LS	$25,000	1	$25,000
Landscaping	LS	$20,000	1	$20,000
Gravel access road	LF	$50	400	$20,000
Building	LS	$72,000	1	$72,000
Subtotal				*$1,657,000*
Mobilization	%	6%		$99,420
Total Construction Costs				*$1,756,420*
Contingency as % of total construction costs	%	25%		$439,000
Land Purchase and Easements	LS	$200,000		$200,000
SCADA Integration and Controls	LS	20,000		$20,000
Engineering and CMS as % of total construction costs	%	20%		$351,284
Total Project Cost	$2,767,000			

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

Water Master Plan Project:
2nd Supply to Anderson PRV Zone

Project Identifier:
1A.2 (new line and valve)

Objective**:**
Eliminates the vulnerability of a single supply point to the Anderson PRV Zone and provides for higher fire flow requirements at sites such as Robert Frost Elementary and Silverton Hospital.

Potential Issues:
Coordinate pressure set points with existing Anderson PRV.

Project Location: Eureka Ave NE and Oregon Garden

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" pipe (includes trenching, backfill, maint. valves, hydrants, and fittings)	LF	$85	295	$25,075
5ft width Pavement Repair (4-inches thick)	LF	$25	145	$3,625
Install new PRV station with access vault	EA	$30,000	1	$30,000
Rock Excavation (bedrock or boulders)	CY	150	25	$3,750
Subtotal				*$62,450*
Mobilization	%	6%		$3,747
Total Construction Costs				*$66,197*
Contingency as % of total construction costs	%	25%		$17,000
SCADA	LS	$12,000		$12,000
Engineering and CMS as % of total construction costs	%	20%		$13,239
Total Project Cost	$109,000			

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

Water Master Plan Project:
Transmission to West Upper Service Area

Project Identifier:
1A.3 (new line)

Objective**:**
Eliminates the vulnerability of a single supply point to the West upper service area, allows for improved fire flow and storage.

Potential Issues:
Rock
Steep Slope
Silver Creek Crossing
Easement and access requirements
High pressure pipeline

Project Location: Peach Ave To Edison Ave

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	1,900	$161,500
5ft width Pavement Repair (4-inches thick)	LF	$25	670	$16,750
Traffic Control	LF	$3	670	$2,010
Silver Creek Crossing (100ft)	LS	$96,000	1	$96,000
Rock Excavation (bedrock or boulders)	CY	150	200	$30,000
Slope stabilization and work	LF	$55	200	$11,000
Additional for high pressure pipeline	LF	$7	1,700	$11,900
Subtotal				*$329,160*
Mobilization	%	6%		$19,750
Total Construction Costs				*$348,910*
Contingency as % of total construction costs	%	25%		$87,000
Easement Acquisition	LS	$59,000		$59,000
Engineering and CMS as % of total construction costs	%	20%		$69,782
Total Project Cost		$565,000		

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Water Master Plan Project:
Water Treatment Plant Upgrades

Project Identifier:
1B

Objective**:**
Enhance reliability, backup, performance and operations of existing plant.
Reduce volume of water wasted via backwashing.

Potential Issues:
Chemical feed improvements should be completed following additional investigation and jar testing.

Project Location: Water Treatment Plant

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Flow Monitoring Upgrades - each filter	LS	$85,000	1	$85,000
SCADA Upgrades	LS	$55,000	1	$55,000
Backwash Instrumentation / Automation	LS	$95,000	1	$95,000
Chlorination Upgrades	LS	$45,000	1	$45,000
Standby Power to Plant 1	LS	$65,000	1	$65,000
Chemical Feed Improvements - pH and Alkalinity (if needed)	LS	$170,000	1	$170,000
Subtotal				*$515,000*
Mobilization	%	6%		$30,900
Total Construction Costs				*$545,900*
Contingency as % of total construction costs	%	25%		$136,000
Engineering and CMS as % of total construction costs	%	20%		$109,180
Total Project Cost	$792,000			

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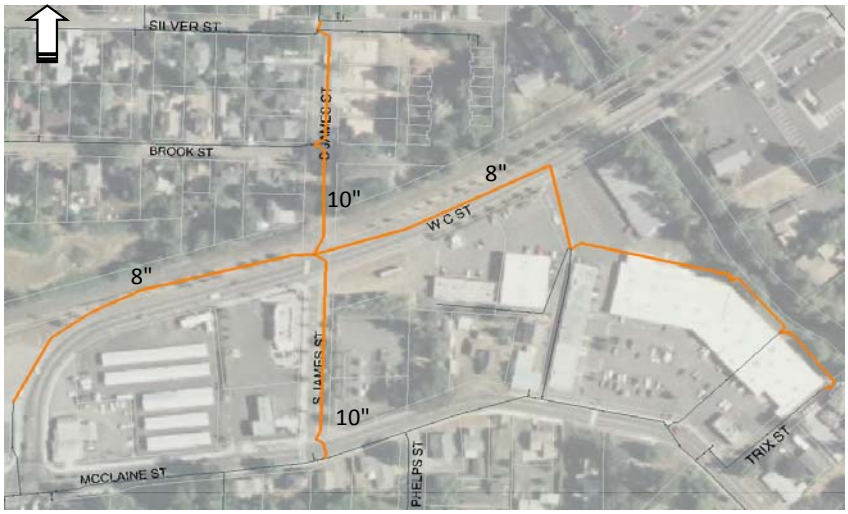
Water Master Plan Project:
Silver Creek Plaza Area Improvements

Project Identifier:
1C (replacement lines and new lines)

Objective**:**
Improves fire flow, transmission, and hydrant coverage to surrounding areas.

Potential Issues:
Traffic control and business access
Easements and continued service through construction

Project Location: Silver Creek Plaza



General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" pipe on S. James (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	950	$71,250
Install 8" line on West C Street	LF	$65	2,000	$130,000
5ft width Pavement Repair (4-inches thick)	LF	$25	3,094	$77,350
Traffic Control	LF	$3	3,000	$9,000
Reconnect services	EA	$1,600	12	$19,200
Rock Excavation (bedrock or boulders)	CY	150	20	$3,000
Landscape	LS	5,000	1	$5,000
Subtotal				*$314,800*
Mobilization	%	6%		$18,888
Total Construction Costs				*$333,688*
Contingency as % of total construction costs	%	25%		$83,000
Easements	LS	$10,000		$10,000
Engineering and CMS as % of total construction costs	%	20%		$66,738
Total Project Cost			$494,000	

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Water Master Plan Project:
Western Avenue Improvements

Project Identifier:
1D (new lines)

Objective**:**
Provides secondary supply source to high school. Also Improves fire flow, transmission, and hydrant coverage to surrounding areas.

Potential Issues:
Easements
Water service during construction

Project Location: Western Ave & Grant St

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	602	$45,150
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$25	950	$23,750
Traffic Control	LF	$3	1,552	$4,656
5ft width Pavement Repair (4-inches thick)	LF	$25	1,612	$40,300
Reconnect Services	EA	$1,600	5	$8,000
Rock Excavation (bedrock or boulders)	CY	150	20	$3,000
Landscape	LS	5,000	1	$5,000
Subtotal				*$129,856*
Mobilization	%	6%		$7,791
Total Construction Costs				*$137,647*
Contingency as % of total construction costs	%	25%		$34,000
Easements	LS	$5,000		$5,000
Engineering and CMS as % of total construction costs	%	20%		$27,529
Total Project Cost		$205,000		

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Water Master Plan Project:
Breyonna Way Loop

Project Identifier:
1E (new line)

Objective**:**
Closes an important loop in the WTP PRV Zone. Improves redundancy, fire flow, and cirucluation.

Potential Issues:
Easements, alignment

Project Location: Breyonna Way & Iowa St

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$25	500	$12,500
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Landscaping	LS	5,000	1	$5,000
Subtotal				*$19,000*
Mobilization	%	6%		$1,140
Total Construction Costs				*$20,140*
Contingency as % of total construction costs	%	25%		$5,000
Easements	LS	$5,000		$5,000
Engineering and CMS as % of total construction costs	%	20%		$4,028
Total Project Cost	$35,000			

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Water Master Plan Project:
N. 3rd Street Improvements

Project Identifier:
1F (replacement)

Objective**:**
Improves fire flow, and hydrant coverage to commercially zoned area.

Potential Issues:

Project Location: N. 3rd St btwn High St and B St

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	793	$51,545
Traffic Control	LF	$3	793	$2,379
5ft width Pavement Repair (4-inches thick)	LF	$25	889	$22,225
Install new hydrants on existing lines	EA	$2,500	3	$7,500
Reconnect Services	EA	$1,700	8	$13,600
Rock Excavation (bedrock or boulders)	CY	150	20	$3,000
Landscaping	LS	3,000	1	$3,000
Subtotal				*$103,249*
Mobilization	%	6%		$6,195
Total Construction Costs				*$109,444*
Contingency as % of total construction costs	%	25%		$27,000
Engineering and CMS as % of total construction costs	%	20%		$21,889
Total Project Cost		$159,000		

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Water Master Plan Project:
Washington and Lincoln Street Improvements

Project Identifier:
1G (new lines)

Objective**:**
Improves fire flow, and hydrant coverage to surrounding areas. Remove problematic lines and distribution lines in alleys.

Potential Issues:
Reconnection of services

Project Location: Washington & Lincoln Streets btwn Mill and N. 2nd Streets

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,310	$85,150
Traffic Control	LF	$3	1,310	$3,930
5ft width Pavement Repair (4-inches thick)	LF	$25	1,710	$42,750
Directional bore for existing services-includes connnection	EA	$1,500	40	$60,000
New meters	EA	$1,000	40	$40,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Landscaping	LS	5,000	1	$5,000
Subtotal				*$238,330*
Mobilization	%	6%		$14,300
Total Construction Costs				*$252,630*
Contingency as % of total construction costs	%	25%		$63,000
Engineering and CMS as % of total construction costs	%	20%		$50,526
Total Project Cost	$367,000			

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Water Master Plan Project:
Kent Street and Sweden Circle

Project Identifier:
1H (new line)

Objective**:**
Improves fire flow, and system looping for Water Treatment Plant PRV Zone.

Potential Issues:
Lines not in right of way - may consider alternate route.

Project Location: Kent St & Sweden Circle

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$90	170	$15,300
5ft width Pavement Repair (4-inches thick)	LF	$25	1	$25
Landscaping	LS	$3,000	1	$3,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$19,825*
Mobilization	%	6%		$1,190
Total Construction Costs				*$21,015*
Contingency as % of total construction costs	%	25%		$5,000
Easements	LS	$6,000		$6,000
Engineering and CMS as % of total construction costs	%	20%		$4,203
Total Project Cost	$37,000			

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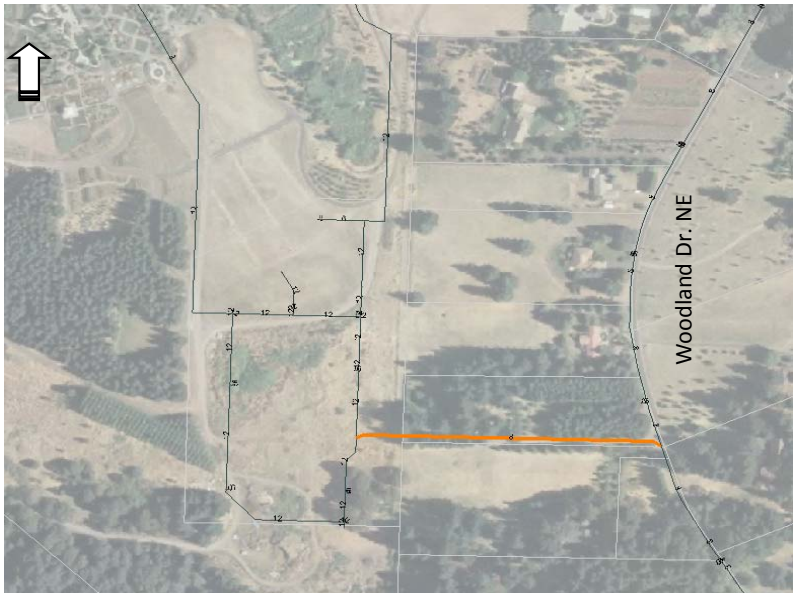
Water Master Plan Project:
Woodland Drive NE and Oregon Garden and Relocate backflow prevention on Oregon Garden

Project Identifier:
1I (new line)

Objective**:**
Eliminates vulnerability of single line feed to Oregon Gardens' system. Resolves fire flow deficiency. Relocation of backflow prevention on the Oregon Garden line addresses the low fire flow concerns on the Garden Site and allows benefit of looping.

Potential Issues:
Easement and final alignment of water line will be required.

Project Location: Woodland Dr and Oregon Garden



General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	770	$50,050
New Backflow Prevention units	EA	$8,000	3	$24,000
Surface Repair - Pavement	LS	$2,500	1	$2,500
Clearing	LF	$22	700	$15,400
Landscaping	LS	$1	3,000	$3,000
Simple Gravel Road	LF	$30	800	$24,000
Rock Excavation (bedrock or boulders)	CY	150	50	$7,500
Subtotal				*$126,450*
Mobilization	%	6%		$7,587
Total Construction Costs				*$134,037*
Contingency as % of total construction costs	%	25%		$34,000
Easements	LS	$15,000		$15,000
Engineering and CMS as % of total construction costs	%	20%		$26,807
Total Project Cost		$210,000		

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Water Master Plan Project:
Hobart Road Improvements

Project Identifier:
1J (replacement)

Objective**:**
Provides for future transmission corridor and improves service and fire flow to existing users. Also replaces old asbestos cement line on Hobart Rd.

Potential Issues:

Project Location: Hobart Rd & N. 2nd St

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	1,450	$123,250
5ft width Pavement Repair (4-inches thick)	LF	$25	1,534	$38,350
Traffic Control	LF	$3	1,450	$4,350
Reconnect Services	EA	1,600	7	$11,200
Landscaping	LS	2,000	1	$2,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$180,650*
Mobilization	%	6%		$10,839
Total Construction Costs				*$191,489*
Contingency as % of total construction costs	%	25%		$48,000
Engineering and CMS as % of total construction costs	%	20%		$38,298
Total Project Cost			$278,000	

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Water Master Plan Project:
New High Level Pumphouse

Project Identifier:
1K (replacement)

Objective**:**
Save energy costs by installing a high efficiency booster.
Expand pumping capacity, upgrade old equipment and facility.
Provide backup power.

Potential Issues:
Coordinate funding with Oregon Energy Trust
Site space restrictions

Project Location: Water Treatment Plant

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
New 75HP Pump	EA	$25,000	1	$25,000
Install two 125 hp pumps	LS	$35,000	2	$70,000
Install medium pressure jokey pump	LS	$20,000	1	$20,000
6" pressure reducing valve	EA	$5,500	2	$11,000
3" pressure reducing valve	EA	$4,000	1	$4,000
New Building	LS	$105,000	1	$105,000
Mechanical - valves, meters	LS	$8,500	1	$8,500
Electrical	LS	$62,000	1	$62,000
Instrumentation	LS	$28,000	1	$28,000
Standby power	EA	$85,000	1	$85,000
Subtotal				*$418,500*
Mobilization	%	6%		$25,110
Total Construction Costs				*$443,610*
Contingency as % of total construction costs	%	25%		$111,000
SCADA Integration and Controls	LS	20,000	1	$20,000
Engineering and CMS as % of total construction costs	%	20%		$88,722
Total Project Cost	$664,000			

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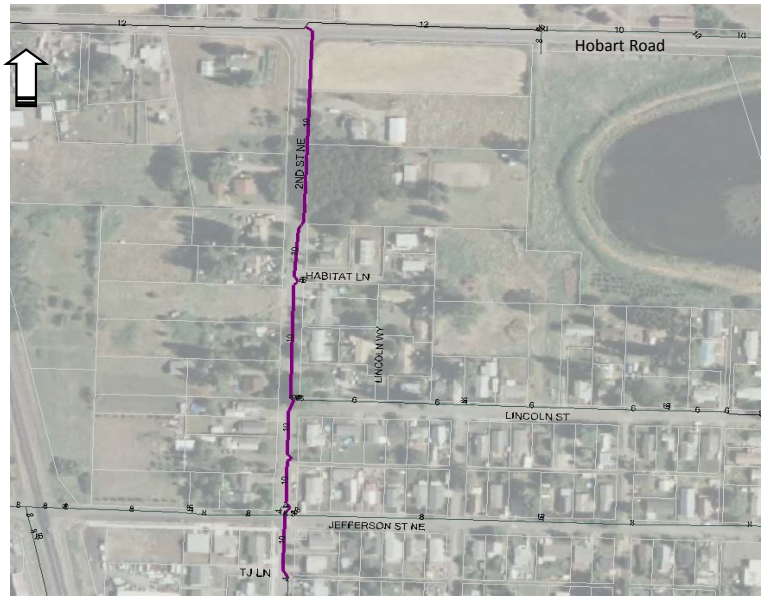
Water Master Plan Project:
N. 2nd Street Improvements

Project Identifier:
2A (replacement)

Objective**:**
Provides for future transmission corridor, improves fire flow, and replaces existing asbestos cement lines.

Potential Issues:

Project Location: Hobart Rd & N. 2nd St



General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" pipe on 2nd (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	1,500	$112,500
5ft width Pavement Repair (4-inches thick)	LF	$25	1,750	$43,750
Traffic Control	LF	$3	1,500	$4,500
Reconnect existing services	EA	$1,600	18	$28,800
Landscaping	LS	$10,000	1	$10,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$201,050*
Mobilization	%	6%		$12,063
Total Construction Costs				*$213,113*
Contingency as % of total construction costs	%	25%		$53,000
Engineering and CMS as % of total construction costs	%	20%		$42,623
Total Project Cost	$309,000			

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Water Master Plan Project:
Cowing to Smith Improvements

Project Identifier:
2B (replacment)

Objective**:**
Improves fire flow and hydrant coverage. and replaces older, undersized lines.

Potential Issues:
Providing temporary water service during construction.

Project Location: Cowing to Smith Street

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	2,200	$143,000
5ft width Pavement Repair (4-inches thick)	LF	$25	2,600	$65,000
Traffic Control	LF	$3	2,200	$6,600
Reconnect water services	EA	$1,600	30	$48,000
Landscaping	LS	$10,000	1	$10,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$274,100*
Mobilization	%	6%		$16,446
Total Construction Costs				*$290,546*
Contingency as % of total construction costs	%	25%		$73,000
Engineering and CMS as % of total construction costs	%	20%		$58,109
Total Project Cost			$422,000	

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Water Master Plan Project:
Fiske Street Improvements

Project Identifier:
2C (replacement)

Objective**:**
Improves fire flow and hydrant coverage and replaces older undersized lines

Potential Issues:
Providing temporary water service during construction.

Project Location: Fiske Street

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,200	$78,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,300	$32,500
Traffic Control	LF	3	1,200	$3,600
Reconnect water services	EA	$1,600	8	$12,800
Landscaping	LS	$5,000	1	$5,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$133,400*
Mobilization	%	6%		$8,004
Total Construction Costs				*$141,404*
Contingency as % of total construction costs	%	25%		$35,000
Engineering and CMS as % of total construction costs	%	20%		$28,281
Total Project Cost			$205,000	

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Water Master Plan Project:
Industry Way Improvements

Project Identifier:
2D (new line)

Objective**:**
Improves fire flow, pressure, and circulation at city shop.

Potential Issues:
Easements and alignment to be finalized.

Project Location: Fosholm and Industry Way

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	2,000	$130,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,300	$32,500
Traffic Control	LF	3	700	$2,100
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$166,100*
Mobilization	%	6%		$9,966
Total Construction Costs				*$176,066*
Contingency as % of total construction costs	%	25%		$44,000
Engineering and CMS as % of total construction costs	%	20%		$35,213
Total Project Cost	$256,000			

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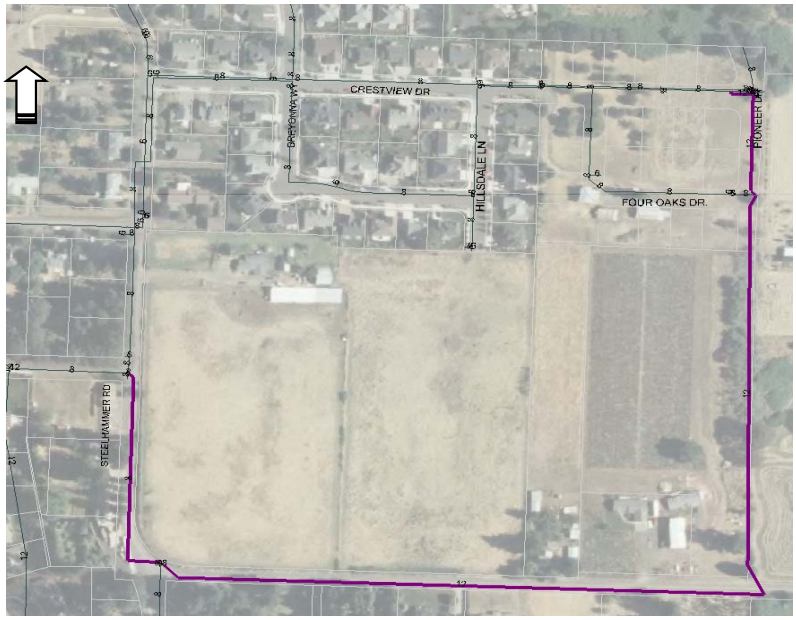
Water Master Plan Project:
Pioneer and Evans Valley Improvements

Project Identifier:
2E (new line)

Objective**:**
Improves fire flow, pressure, circulation and future transmission. Eliminates vulnerability of single feed to WTP PRV Zone.

Potential Issues:
Coordinate improvement with Pioneer Rd. alignment and future development.

Project Location: Pioneer and Evans Valley



General Line Items - Upsize Costs Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	2,700	$0
Install 12" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	560	$11,200
Surface Repair - Pavement	LF	$0	2,260	$0
Traffic Control	LF	$0	2,260	$0
PRV connection from WTP Booster Zone to WTP PRV Zone at Pioneer and Crestview	EA	30,000	1	$30,000
Rock Excavation (bedrock or boulders)	CY	150	100	$15,000
Subtotal				*$56,200*
Mobilization	%	0%		$0
Total Construction Costs				*$56,200*
Contingency as % of total construction costs	%	25%		$14,000
Engineering and CMS as % of total construction costs	%	20%		$11,240
Total Project Cost	$82,000			

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

Water Master Plan Project:
Oak Street Improvements

Project Identifier:
2F (new line)

Objective**:**
Improves transmission in the Clearwell Zone. Improves pressures for connections in the WTP PRV Zone on Oak Street. Improves looping, circulation, and fire flow in both zones.

Connectivity Information:
Existing 6-8" lines on Oak to be converted from the Clearwell Zone (low zone) to WTP PRV Zone (medium zone). A new 12" transmission line to be installed and serve the Clearwell Zone. Install new 8" connection btwn WTP PRV Zone lines at intersection of Silver Cliff BV, Oak St, and Iowa St. Install new 8" connection btwn Clearwell Zone lines at same intersection.

Project Location: Oak St btwn Norway St and Monitor Rd

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" connections (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	100	$7,500
Install 12" transmission (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,000	$170,000
5ft width Pavement Repair (4-inches thick)	LF	$25	2,100	$52,500
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Traffic Control	LS	22,000	1	$22,000
Various connections and Pressure zone modifications	LS	15,000	1	$15,000
Subtotal				*$268,500*
Mobilization	%	6%		$16,110
Total Construction Costs				*$284,610*
Contingency as % of total construction costs	%	25%		$71,000
Engineering and CMS as % of total construction costs	%	20%		$56,922
Total Project Cost			$413,000	

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Water Master Plan Project:
Industrial Area Improvements

Project Identifier:
2G (new line)

Objective**:**
Improve transmission and fire flow in the industrial land use area. Allows flexibility for future industrial development.

Project Issues:
Consider coordinating improvement with new industrial developments in this area.

Project Location: Hobart and Monitor Road

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" transmission (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,000	$170,000
5ft width Pavement Repair (4-inches thick)	LF	$25	2,000	$50,000
Traffic Control	LF	3	2,000	$6,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$227,500*
Mobilization	%	6%		$13,650
Total Construction Costs				*$241,150*
Contingency as % of total construction costs	%	25%		$60,000
Engineering and CMS as % of total construction costs	%	20%		$48,230
Total Project Cost	$350,000			

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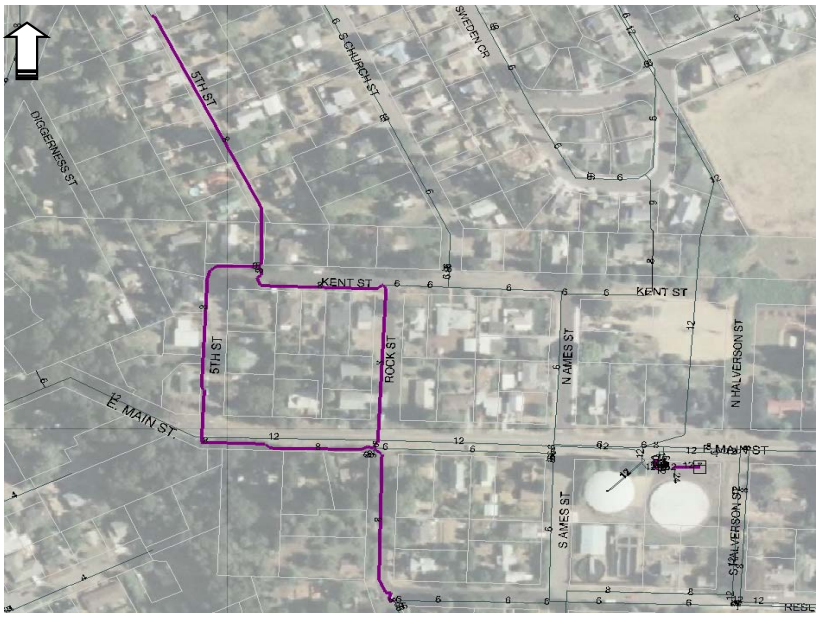
Water Master Plan Project:
Main and 5th Improvements

Project Identifier:
2H (replacement)

Objective**:**
Address recurring complaints regarding pressures in this area. Improve fire flow, hydrant coverage, and circulation. Replace small, undersized pipes.

Project Issues:

Project Location: E. Main St and 5th St



General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	2,550	$165,750
5ft width Pavement Repair (4-inches thick)	LF	$25	2,750	$68,750
Traffic Control	LF	$3	2,550	$7,650
Landscaping	LS	$10,000	1	$10,000
Rock Excavation (bedrock or boulders)	CY	150	100	$15,000
Reconnect services	EA	$1,700	20	$34,000
Subtotal				*$301,150*
Mobilization	%	6%		$18,069
Total Construction Costs				*$319,219*
Contingency as % of total construction costs	%	25%		$80,000
Engineering and CMS as % of total construction costs	%	20%		$63,844
Total Project Cost			$464,000	

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Water Master Plan Project:
Well and Orchard Improvements

Project Identifier:
2I (replacement)

Objective**:**
Improve fire flow and hydrant coverage.

Project Issues:

Project Location: Well St and Orchard St

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,000	$65,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,240	$31,000
Traffic Control	LF	$3	1,000	$3,000
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Landscape	LS	3,000	1	$3,000
Reconnect existing services	EA	$1,700	20	$34,000
Subtotal				*$137,500*
Mobilization	%	6%		$8,250
Total Construction Costs				*$145,750*
Contingency as % of total construction costs	%	25%		$36,000
Engineering and CMS as % of total construction costs	%	20%		$29,150
Total Project Cost			$211,000	

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Water Master Plan Project:
Future Park Service

Project Identifier:
2J (new line)

Objective**:**
Extend service to future park. Because the future piping requirements for the park are presently unkown, the figure and pipe lengths provided here are for illustration only.

Project Issues:
Tree removal, replacement and other surface repair is assumed to be part of future park work. Coordinate looped service to park area with the pressure zone boundary on Hawk Drive.

Project Location: Hawk Dr and Centennial Dr

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	250	$16,250
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Subtotal				*$17,750*
Mobilization	%	6%		$1,065
Total Construction Costs				*$18,815*
Contingency as % of total construction costs	%	25%		$5,000
Engineering and CMS as % of total construction costs	%	20%		$3,763
Total Project Cost			$28,000	

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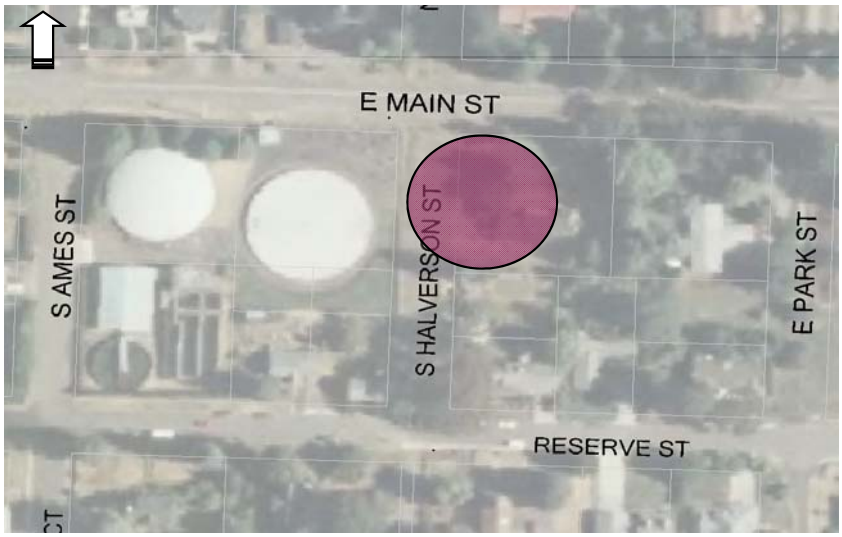
Water Master Plan Project:
Future 2 MG Tank

Project Identifier:
2K (new facilities)

Objective**:**
Provide for future storage needs

Project Issues:
Acquisition of additional space adjacent to WTP site.
Tank will be partially buried and should match levels of existing tanks. Alternate locations in proximity should be considered.
Share overflow and drainage system with existing tanks.

Project Location: Water Treatment Plant



General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Fence, security, and lighting	LS	$50,000	1	$50,000
Yard piping and connection to existing system	LS	$120,000	1	$120,000
Earthwork	LS	$80,000	1	$80,000
2MG Prestressed Concrete Tank with aluminum dome	LS	$1,450,000	1	$1,450,000
Subtotal				*$1,700,000*
Mobilization	%	6%		$102,000
Total Construction Costs				*$1,802,000*
Contingency as % of total construction costs	%	25%		$451,000
Land Purchase	LS	400,000		$400,000
SCADA Integration and Controls	LS	20,000	1	$20,000
Engineering and CMS as % of total construction costs	%	20%		$360,400
Total Project Cost	$3,034,000			

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Water Master Plan Project:
Lewis Street Improvements

Project Identifier:
2L (replacement)

Objective**:**
Eliminate undersized tuberculated lines, improve water quality and fire flow.

Project Issues:

Project Location: S. 3rd Sreet and Lewis Street

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,400	$91,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,700	$42,500
Traffic Control	LF	3	1,400	$4,200
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Landscape	LS	3,000	1	$3,000
Reconnect existing services	EA	1,700	25	$42,500
Subtotal				*$184,700*
Mobilization	%	6%		$11,082
Total Construction Costs				*$195,782*
Contingency as % of total construction costs	%	25%		$49,000
Engineering and CMS as % of total construction costs	%	20%		$39,156
Total Project Cost			$284,000	

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Water Master Plan Project:
Water Street Improvements

Project Identifier:
2M (replacement)

Objective**:**
Improve transmission, fire flow, and hydrant coverage.
Replace old, undersize, steel pipes.

Project Issues:
Water Street is a State Highway and may have additional requirements. With city inspection, the additional cost of control density backfill may be avoidable. Project should be coordinated with other street improvements to reduce project costs where possible.

Project Location: Water St btwn Ike Mooney and Pioneer Rd

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	2,550	$191,250
10 ft width pavement Repair (6-inches thick)	LF	$55	3,050	$167,750
Rock Excavation (bedrock or boulders)	CY	150	20	$3,000
Additional for control density backfill	LF	$40	2,550	$102,000
Traffic Control	LF	$3	2,550	$7,650
Landscape	LS	20,000	1	$20,000
Reconnect services	EA	$1,600	26	$41,600
Subtotal				*$533,250*
Mobilization	%	6%		$31,995
Total Construction Costs				*$565,245*
Contingency as % of total construction costs	%	25%		$141,000
Engineering and CMS as % of total construction costs	%	20%		$113,049
Total Project Cost	$820,000			

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Water Master Plan Project:
Pine Street Improvements

Project Identifier:
2N (replacement)

Objective**:**
Improves fire flow, transmission, and hydrant coverage to surrounding areas.

Potential Issues:

Project Location: Pine & James Street

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	600	$45,000
Traffic Control	LF	$3	600	$1,800
5ft width Pavement Repair (4-inches thick)	LF	$25	700	$17,500
Reconnect Services	EA	$1,600	9	$14,400
Rock Excavation (bedrock or boulders)	CY	150	10	$1,500
Landscaping	LS	1	3,000	$3,000
Subtotal				*$83,200*
Mobilization	%	6%		$4,992
Total Construction Costs				*$88,192*
Contingency as % of total construction costs	%	25%		$22,000
Engineering and CMS as % of total construction costs	%	20%		$17,638
Total Project Cost	$128,000			

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Water Master Plan Project:
Keene and Ash Improvements

Project Identifier:
2O (replacement)

Objective**:**
Improves fire flow, transmission, and hydrant coverage to surrounding areas. Eliminates undersized and problematic lines from the system.

Potential Issues:

Project Location: Keene & Ash Street

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" pipe (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,900	$123,500
Traffic Control	LF	$3	1,900	$5,700
5ft width Pavement Repair (4-inches thick)	LF	$25	2,200	$55,000
Reconnect Services	EA	$1,600	25	$40,000
Landscaping	LS	$10,000	1	$10,000
Rock Excavation (bedrock or boulders)	CY	150	30	$4,500
Subtotal				*$238,700*
Mobilization	%	6%		$14,322
Total Construction Costs				*$253,022*
Contingency as % of total construction costs	%	25%		$63,000
Engineering and CMS as % of total construction costs	%	20%		$50,604
Total Project Cost	$367,000			

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Water Master Plan Project:
High Level Tank Improvements

Project Identifier:
2P (new faciliites/maintenance of existing)

Objective**:**
Addresss issues at the tank site identified in October 2010 Keller Associates Technical Memorandum: Silverton Water Distribution System Inventory and Evaluation (p.2)

Potential Issues:
Tank may need to be out of service or otherwise isolated for some improvments.

Project Location: High Level Tank

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Recoating of tank exterior	LS	$95,000	1	$95,000
Replace ladder system	LS	$45,000	1	$45,000
Security Improvements	LS	$35,000	1	$35,000
Replace manway covers	LS	$12,000	1	$12,000
Replace venting	LS	$5,500	1	$5,500
Subtotal				*$192,500*
Mobilization	%	6%		$11,550
Total Construction Costs				*$204,050*
Contingency as % of total construction costs	%	10%		$20,000
Engineering and CMS as % of total construction costs	%	15%		$30,608
Total Project Cost	$255,000			

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Water Master Plan Project:
Water Treatment Plant Upgrades

Project Identifier:
2Q

Objective**:**
Replace older Plant 1 (built in 1960s); utlize newer treatment technologies for increased performance and reliability

Enhance treatment plant performance

Potential Issues:
Treatment plant upgrades should be completed after a feasibility study and pre-design effort.
Site restrictions and continued operation during construction.
Complete tracer study before doing clearwell improvements.

Project Location: Water Treatment Plant

General Line Items	Unit	Unit Price	Estimated Quantity	2010 Cost
Clearwell Improvements - Baffels and/or Piping Clearwells in Series	LS	$550,000	1	$550,000
New WTP to Replace Plant 1 - 3+ MGD Capacity	LS	$4,800,000	1	$4,800,000
Upgrades to Plant 2 clarifier process	LS	$700,000	1	$700,000
Subtotal				*$6,050,000*
Mobilization	%	6%		$363,000
Total Construction Costs				*$6,413,000*
Contingency as % of total construction costs	%	25%		$1,603,000
Land purchase for New Plant	LS	$700,000	1	$700,000
Engineering and CMS as % of total construction costs	%	20%		$1,282,600
Total Project Cost	$9,999,000			

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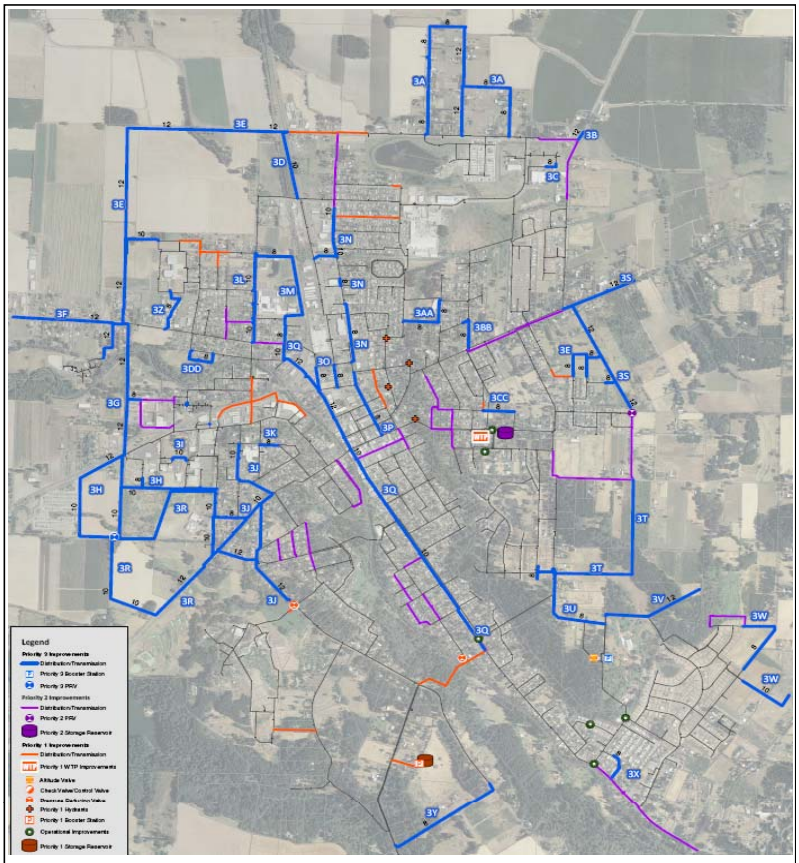
Water Master Plan Project:
Priority 3 Improvements

Objective:
Priority 3 improvements are intended to provide an outline for future distribution alignments, transmission corridors, and lower priority improvements targeted to alleviate anticipated bottlenecks and maintenance issues. Projects address future transmission and fire protection needs, including enhanced fire protection in existing commercially zoned areas.

Improvements are anticipated to be completed by 2035. Many of these projects should be coordinated with development and roadway projects to minimize costs.

For projects assumed to be primarily development driven and that are intended to directly service adjacent developable lands, only project upsize costs are calculated. Upsize costs refer to the cost to increase the pipe from the minimum 8-inch pipe to specific size required for other planning needs.



3A - Setness St, Quarry Ave, and Lanham Lane - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	4,600	$299,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,150	$182,750
5ft width Pavement Repair (4-inches thick)	LF	$25	5,250	$131,250
Traffic Control	LF	$3	5,250	$15,750
Subtotal				*$628,750*
Mobilization	%	6%		$37,725
Total Construction Costs				*$666,475*
Contingency as % of total construction costs	%	35%		$233,000
Engineering and CMS as % of total construction costs	%	20%		$133,295
Total Project Cost			$1,033,000	

3B - Meridian Rd NE - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	200	$4,000
Subtotal				*$4,000*
Mobilization	%	0%		$0
Total Construction Costs				*$4,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$4,000	

3C - Commerce Court and Industry Way - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	300	$0
Surface Repair	LF	$0	100	$0
Subtotal				*$0*
Mobilization	%	6%		$0
Total Construction Costs				*$0*
Contingency as % of total construction costs	%	35%		$0
Engineering and CMS as % of total construction costs	%	20%		$0
Total Project Cost			$0	

Silverton, Oregon
2010 Water Master Plan: Capital Improvement Project Details

3D - N. 1st Street from Jefferson Road to Hobart Road - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	1,400	$105,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,400	$35,000
Traffic Control	LF	$3	1,400	$4,200
Subtotal				*$144,200*
Mobilization	%	6%		$8,652
Total Construction Costs				*$152,852*
Contingency as % of total construction costs	%	35%		$53,000
Engineering and CMS as % of total construction costs	%	20%		$30,570
Total Project Cost			$237,000	
3E - Northwest 12-inch Loop (Hobart Road to Pine Street) - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$10	600	$6,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	6,700	$134,000
Subtotal				*$140,000*
Mobilization	%	6%		$8,400
Total Construction Costs				*$148,400*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$149,000	
3F - Pine Street from April Ln to Airport Rd. - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,900	$246,500
5ft width Pavement Repair (4-inches thick)	LF	$25	2,900	$72,500
Traffic Control	LF	$3	2,900	$8,700
Subtotal				*$327,700*
Mobilization	%	6%		$19,662
Total Construction Costs				*$347,362*
Contingency as % of total construction costs	%	35%		$122,000
Engineering and CMS as % of total construction costs	%	20%		$69,472
Total Project Cost			$539,000	
3G - West 12" line from Pine and April Ln, south to Railway Avenue - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings) - likely full cost	LF	$65	250	$16,250
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	2,650	$53,000
Subtotal				*$69,250*
Mobilization	%	0%		$0
Total Construction Costs				*$69,250*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$70,000	
3H - Clearwell Pressure Zone Loop from Westfield and Center westward and north to Railway Avenue - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	550	$0
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$10	4,200	$42,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	950	$19,000
Subtotal				*$61,000*
Mobilization	%	0%		$0
Total Construction Costs				*$61,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$61,000	
3I - 10" Connection from Safeway to Fire Department - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	300	$22,500
5ft width Pavement Repair (4-inches thick)	LF	$25	300	$7,500
Subtotal				*$30,000*
Mobilization	%	6%		$1,800
Total Construction Costs				*$31,800*
Contingency as % of total construction costs	%	35%		$11,000
Engineering and CMS as % of total construction costs	%	20%		$6,360
Total Project Cost			$50,000	

Silverton, Oregon
2010 Water Master Plan: Capital Improvement Project Details

3J - Transmission from New PRV to Anderson PRV Zone - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,800	$117,000
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	4,200	$315,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,200	$187,000
5ft width Pavement Repair (4-inches thick)	LF	$25	8,200	$205,000
Traffic Control	LF	$3	8,200	$24,600
Subtotal				*$848,600*
Mobilization	%	6%		$50,916
Total Construction Costs				*$899,516*
Contingency as % of total construction costs	%	35%		$315,000
Engineering and CMS as % of total construction costs	%	20%		$179,903
Total Project Cost			$1,395,000	
3K - Cherry Street From Phelps to Welch - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	350	$22,750
5ft width Pavement Repair (4-inches thick)	LF	$25	350	$8,750
Traffic Control	LF	$3	350	$1,050
Subtotal				*$32,550*
Mobilization	%	6%		$1,953
Total Construction Costs				*$34,503*
Contingency as % of total construction costs	%	35%		$12,000
Engineering and CMS as % of total construction costs	%	20%		$6,901
Total Project Cost			$54,000	
3L - James St from Western to Pine - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	1,900	$142,500
5ft width Pavement Repair (4-inches thick)	LF	$25	1,900	$47,500
Traffic Control	LF	$3	1,900	$5,700
Subtotal				*$195,700*
Mobilization	%	6%		$11,742
Total Construction Costs				*$207,442*
Contingency as % of total construction costs	%	35%		$73,000
Engineering and CMS as % of total construction costs	%	20%		$41,488
Total Project Cost			$322,000	
3M - Loop around old high school site - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	2,200	$0
Subtotal				*$0*
Mobilization	%	5%		$0
Total Construction Costs				*$0*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$0	
3N - N. 2nd from C Street to TJ Lane - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,800	$117,000
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	1,000	$75,000
5ft width Pavement Repair (4-inches thick)	LF	$25	2,800	$70,000
Traffic Control	LF	$3	2,800	$8,400
Subtotal				*$270,400*
Mobilization	%	6%		$16,224
Total Construction Costs				*$286,624*
Contingency as % of total construction costs	%	35%		$100,000
Engineering and CMS as % of total construction costs	%	20%		$57,325
Total Project Cost			$444,000	
3O - N. 1st from A to C and Front St from A to C - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	924	$60,060
5ft width Pavement Repair (4-inches thick)	LF	$25	924	$23,100
Traffic Control	LF	$3	924	$2,772
Subtotal				*$85,932*
Mobilization	%	6%		$5,156
Total Construction Costs				*$91,088*
Contingency as % of total construction costs	%	35%		$32,000
Engineering and CMS as % of total construction costs	%	20%		$18,218
Total Project Cost			$142,000	

3P - N. 2nd from Main to B St - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,400	$91,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,400	$35,000
Traffic Control	LF	$3	1,400	$4,200
Subtotal				*$130,200*
Mobilization	%	6%		$7,812
Total Construction Costs				*$138,012*
Contingency as % of total construction costs	%	35%		$48,000
Engineering and CMS as % of total construction costs	%	20%		$27,602
Total Project Cost			$214,000	

3Q - Water St from Peach to Brown St, then on Brown from N Webb to Schlador - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	500	$32,500
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$75	5,100	$382,500
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$85	2,300	$195,500
5ft width Pavement Repair (4-inches thick)	LF	$25	7,900	$197,500
Traffic Control	LF	$3	7,900	$23,700
Subtotal				*$831,700*
Mobilization	%	6%		$49,902
Total Construction Costs				*$881,602*
Contingency as % of total construction costs	%	35%		$309,000
Engineering and CMS as % of total construction costs	%	20%		$176,320
Total Project Cost			$1,367,000	

3R - Anderson PRV Zone Loop from Westfield and Center westward and northeast to Westfield and Main - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$10	4,500	$45,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	1,600	$32,000
Subtotal				*$77,000*
Mobilization	%	0%		$0
Total Construction Costs				*$77,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$77,000	

3S - Future Pioneer Rd Alignment from Crestview Dr to Oak St - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	500	$0
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	3,500	$70,000
Subtotal				*$70,000*
Mobilization	%	0%		$0
Total Construction Costs				*$70,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$70,000	

3T - Future Pioneer Rd Alignment from Skookum Dr and Eastview Lane to Evans Valley Rd - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$10	1,400	$14,000
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	2,000	$40,000
Subtotal				*$54,000*
Mobilization	%	0%		$0
Total Construction Costs				*$54,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$54,000	

3U - Eastview from Tillicum to Storage Reservoir - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,800	$117,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,800	$45,000
Traffic Control	LF	$3	1,800	$5,400
Subtotal				*$167,400*
Mobilization	%	6%		$10,044
Total Construction Costs				*$177,444*
Contingency as % of total construction costs	%	35%		$62,000
Engineering and CMS as % of total construction costs	%	20%		$35,489
Total Project Cost			$275,000	

Silverton, Oregon
2010 Water Master Plan: Capital Improvement Project Details

3V - Booster and eastward extension from Eastview Dr. to Future Eastview Booster Service Area - Upsize Only	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 12" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$20	2,000	$40,000
Booster Station - City's portion (Remainder to development)	LS	50,000	1	$50,000
Subtotal				*$90,000*
Mobilization	%	0%		$0
Total Construction Costs				*$90,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$90,000	
3W - Hawk Dr and Ike Mooney Rd - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	1,600	$0
Install 10" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$10	1,100	$11,000
Subtotal				*$11,000*
Mobilization	%	0%		$0
Total Construction Costs				*$11,000*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$11,000	
3X - Extension into Silverton Mobile Home Estates - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,500	$97,500
5ft width Pavement Repair (4-inches thick)	LF	$25	1,500	$37,500
Traffic Control	LF	$3	1,500	$4,500
Subtotal				*$139,500*
Mobilization	%	6%		$8,370
Total Construction Costs				*$147,870*
Contingency as % of total construction costs	%	35%		$52,000
Engineering and CMS as % of total construction costs	%	20%		$29,574
Total Project Cost			$230,000	
3Y - Sunset Lane from Victor Point to Edison - Upsize Only	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$0	2,300	$0
Subtotal				*$0*
Mobilization	%	0%		$0
Total Construction Costs				*$0*
Contingency as % of total construction costs	%	0%		$0
Engineering and CMS as % of total construction costs	%	0%		$0
Total Project Cost			$0	
3Z - Connection from current High School site through mobile home park to Pine St - Full Cost	**Unit**	**Unit Price**	**Estimated Quantity**	**2010 Cost**
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,000	$65,000
5ft width Pavement Repair (4-inches thick)	LF	$25	1,000	$25,000
Traffic Control	LF	$3	1,000	$3,000
Subtotal				*$93,000*
Mobilization	%	6%		$5,580
Total Construction Costs				*$98,580*
Contingency as % of total construction costs	%	35%		$35,000
Engineering and CMS as % of total construction costs	%	20%		$19,716
Total Project Cost			$154,000	

Silverton, Oregon
2010 Water Master Plan: Capital Improvement Project Details

3AA - Robinson St and Church St - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	1,100	$71,500
5ft width Pavement Repair (4-inches thick)	LF	$25	1,100	$27,500
Traffic Control	LF	$3	1,100	$3,300
Subtotal				*$102,300*
Mobilization	%	6%		$6,138
Total Construction Costs				*$108,438*
Contingency as % of total construction costs	%	35%		$38,000
Engineering and CMS as % of total construction costs	%	20%		$21,688
Total Project Cost			$169,000	

3BB - Norway from Chadwick to Oak St - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	700	$45,500
5ft width Pavement Repair (4-inches thick)	LF	$25	700	$17,500
Traffic Control	LF	$3	700	$2,100
Subtotal				*$65,100*
Mobilization	%	6%		$3,906
Total Construction Costs				*$69,006*
Contingency as % of total construction costs	%	35%		$24,000
Engineering and CMS as % of total construction costs	%	20%		$13,801
Total Project Cost			$107,000	

3CC - Kent Street from East Park to N. Ames St - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	600	$39,000
5ft width Pavement Repair (4-inches thick)	LF	$25	600	$15,000
Traffic Control	LF	$3	600	$1,800
Subtotal				*$55,800*
Mobilization	%	6%		$3,348
Total Construction Costs				*$59,148*
Contingency as % of total construction costs	%	35%		$21,000
Engineering and CMS as % of total construction costs	%	20%		$11,830
Total Project Cost			$92,000	

3DD - Maple Street near Grant and N. Water - Full Cost	Unit	Unit Price	Estimated Quantity	2010 Cost
Install 8" lines (includes trenching, backfill, maint valves, hydrants, and fittings)	LF	$65	800	$52,000
5ft width Pavement Repair (4-inches thick)	LF	$25	800	$20,000
Traffic Control	LF	$3	800	$2,400
Subtotal				*$74,400*
Mobilization	%	6%		$4,464
Total Construction Costs				*$78,864*
Contingency as % of total construction costs	%	35%		$28,000
Engineering and CMS as % of total construction costs	%	20%		$15,773
Total Project Cost			$123,000	

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

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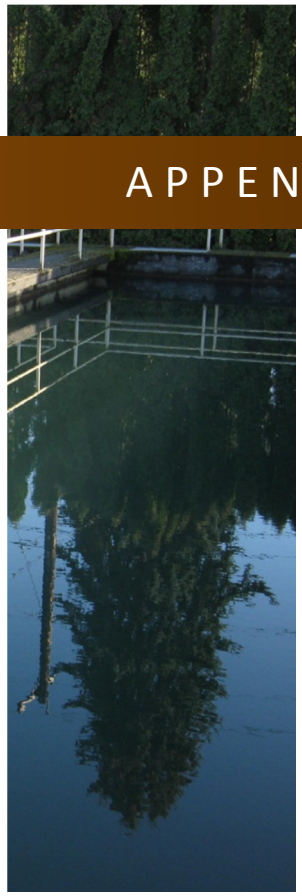

APPENDIX H – USER RATE & SDC CALCULATIONS

KELLER associates

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City of Silverton
Water Master Plan

User Rate Impacts

Existing Shortfall in Revenues

FY 2009-2010 Operating Revenue	$	1,347,040
FY 2009-2010 Operating Expenses	$	(1,408,037)
Shortfall	$	60,998
Shortfall (% of Operating Revenue)		4.5%

Priority 1A Improvements

Priority 1A Improvement Costs	$	5,315,000
Less Available SDC Funds	$	(839,752)
Amount to Finance	$	4,475,248
Annual Payment (20yr, 4%)	$	329,297
Payment % of FY 2009-2010 Revenue		24.4%

Other Priority 1 Improvements

Other Priority 1 Improvement Costs	$	3,241,000
Annual Payment (20yr, 4%)	$	238,478
Payment % of FY 2009-2010 Revenue		17.7%

Annual Pipeline Replacement Program

# Miles of Pipe		58
# Miles Divided by 75 Years		0.77
# Feet of Pipe to Replace each Yr		4083
Cost per Foot to Replace	$	80
Annual Pipeline Replacement Budget	$	326,656
Annual Budget Rounded	$	330,000
% of FY 2009-2010 Revenue		24.5%

Monthly User Rate Impacts			Accumulated % Increase of 2009
2009 Single Family Residential Rate	$	27.17	
With Shortfall Correction	$	28.40	4.5%
With Priority 1A	**$**	**33.97**	**25%**
With Priority 1	$	38.78	43%
With Annual Pipeline Replacement	$	45.43	67%
Dec 2010 Adopted User Rate	$	30.76	

City of Silverton
Water Master Plan

System Development Charge Calculations - Reimbursement Portion

Identifier	Description	Source of Supply	Treatment	Storage	Distribution
[A]	Total Capacity (MGD)[1]	7.1	5.64	2.94	9
[B]	Current Usage (MGD)[2]	2.92	2.92	2.92	6.13
[A]-[B] = [C]	Current Unused Capacity (MGD)	4.18	2.72	0.02	2.87
[C]/[A]=[D]	Current % Unused	59%	48%	0.7%	32%
[E]	Usage by Study Period Growth (MGD)[3]	2.1	2.1	2.1	4.41
[E]/[C]=[F]	% of Unused Capacity for Study Period Growth	50%	77%	100%	100%
[D]X[F]	**% of Total Capacity for Study Period Growth**	**30%**	**37%**	**0.7%**	**32%**

Weighted Average (used for "other" category) = **26%**

Notes

1 Capacity of source assumed to be same as 2005 SDC Study. Treatment, storage, and distribution were revisited and updated as part of master plan.

2 Current usage assumes peak day usage to coincide with capacity, treatment, and storage and peak hour usage for distribution. 2005 SDC Study assumed average usage.

3 Based on 2035 population growth projection of 15,532 and projected peak day demand of 5.02 MGD

Existing and Future Meter Equivalents (ME)

	Population	ME[1]
Existing (2009)	9,600	3,741
Future (2035)	15,532	6,053
Planned Period Growth	5,932	2,312
Increase %	62%	62%

Notes

1 Assumed ratio of future ME per person will remain same.

Water Reimbursement Fee

Component	Cost[1]	Unused Capacity[2]	Allocated Costs
Source and Supply	$ -	30%	$ -
Treatment	$ 565,733	37%	$ 210,645
Storage	$ 517,311	0.7%	$ 3,464
Distribution	$ 5,944,000	32%	$ 1,894,155
Other[3]	$ 6,742,846	26%	$ 1,776,953
Subtotal	$ 13,769,890	28%	$ 3,885,218
Less: Net Debt Principal Oustanding[4]	$ 1,807,788	25.5%	$ 460,986
Less: Grants / Contributions[5]	$ 2,293,152	29%	$ 665,014
Subtotal	$ 4,100,940		$ 1,126,000

Allocated Unused Capacity	**$ 2,759,217**
Number of MEs for Planned Period Growth	2,312
Reimbursement Fee per ME	**$ 1,194**
Compare to 2005 SDC Study	$ 1,636
Existing SDC (October 5, 2009)	$ 1,703

Notes

1 Cost were taken from the August 2005 System Development Charge Study (SDC Study). Cost for distribution increased for City funded portion of improvements since 2005 ($110K).

2 % calculated in table above. For Net Debt Principal Oustanding and Grants/Contributions, assumed similar to 2005 study.

3 Allocation factor applied to the "other" category was the weighted average of the four functional allocation factors.

4 Updated from 2005 to reflect current outstanding principal and previous debt payments from SDC funds.

5 Assumed to be the same as the 2005 Study.

City of Silverton
Water Master Plan

System Development Charge Calculations - Improvement Fee

SDC Eligible Costs from CIP	$	7,893,220
Ending Fund Balance FYE 2011 (from City)		
Water Improvement Fee	$	743,802
Water Reimbursement Fee	$	95,950
Total	$	839,752
SDC Cost Less Available SDC Funds	$	7,053,468

Existing and Future Meter Equivalents (ME)

	Population	ME[1]
Existing (2009)	9,600	3,741
Future (2035)	15,532	6,053
Planned Period Growth	5,932	2,312
Increase %	62%	62%

Notes

1 Assumed ratio of future ME per person will remain same.

SDC Improvement Fee Cost per ME	**$**	**3,051**
Compare to Existing Imporvement SDC	$	2,427

Silverton Oregon
Water Master Plan

Meter Equivalency (September 2010)

Meter Size	Meter Flow Factor[1]	# Accounts	ME
3/4"	1	2921	2921
1"	1.67	209	349.0
1 1/2"	3.33	48	159.8
2"	5.33	30	159.9
3"	10.67	11	117.4
4"	16.7	2	33.4
6"	33.3	0	0
Total		**3221**	**3741**

Notes

1 Used same meter flow factor as in 2005 SDC Study
5/8 meters included with 3/4"
Exludes schoold district field and city facility that are not charged a water bill (9 meters total)

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