WATER SYSTEM STUDY ADDENDUM

April 20, 2012

CLEARWATER WATER DISTRICT

Clearwater, Idaho

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A – INTRODUCTION

The Clearwater Water District owns and operates a water supply service for the community of Clearwater, Idaho and the outlying properties. The District currently provides domestic and irrigation/livestock water to 48 connections. The system is supplied by surface water from an intake structure at Wall Creek. From here, the water is transported over a mile to the treatment plant which consists of a roughing filter, mixed media pressure filter, and chlorine feed pump for disinfection. From the plant, the water is transmitted to a 40,000 gallon reservoir, after which it is gravity fed to approximately 40,000 lineal feet of distribution mains and service lines. A vicinity map and a map of the existing system are provided in Appendix A.

The existing water system was first constructed in 1948, with significant improvements being made in 1983. Since this time, only minor maintenance improvements for emergency situations have been completed. In part because of the aging system, but also because of increasingly stringent water quality regulations, the District has been unable to consistently meet the requirements of the *Idaho Rules for Drinking Water,* IDAPA 58.01.08. Numerous violations have resulted from high turbidity levels and exceedances of disinfection by-products (DBPs). As a result the District has been under court order since 2005 to bring the system into compliance. In addition to the court order, a DEQ sanitary survey was completed in 2011 that found numerous deficiencies with the distribution system and treatment plant. Copies of the court order, system violations, and 2011 sanitary survey are included in Appendix B.

In 2005, a Water System Study was prepared by Progressive Engineering Group, Inc. for the Clearwater Water District. The study included an evaluation of the existing system and recommended construction of a new membrane filter treatment system in order to bring the system into compliance. However, the proposed improvements were not considered economically feasible by the District and the project was never implemented. In 2007, an addendum to the initial study was completed by USKH. This addendum proposed to install a roughing filter at the existing plant to provide additional pre-treatment to the surface water. A filter was installed and a pilot study plan was prepared and submitted to DEQ. However, because testing requirements for DBP levels were not completed during the pilot study, its success could not be confirmed and the plan was never approved by DEQ. Additional testing would be costly and time consuming and therefore was not pursued.

In 2010, Wyatt and Associates completed a Ground Water Assessment Study for the District to determine the feasibility of drilling groundwater wells for the District's drinking water source. This study indicated that wells were a feasible alternative in providing water for the District and warranted further considered.

In 2011, the District authorized TD&H Engineering to complete an engineering planning study in order to provide recommendations for bringing the water system back into compliance. After meeting with the District and IDEQ, it was agreed that TD&H would prepare an addendum to the 2005 Water System Study as well as prepare a new Environmental Information Document. Funding for the planning project was secured from IDEQ by increasing the existing grant that had been awarded for the original study.

After securing funding, TD&H and the District formalized a Scope of Work as follows:

1) Prepare Addendum to the 2005 Water System Study and 2007 Study Addendum
    - Review existing conditions, reports and previous testing results for the District's water system and treatment plant
    - Conceptually evaluate numerous alternatives and provide recommended top three alternatives for further evaluation
    - Develop thorough comparison of the top three alternatives and provide recommended alternative for implementation
    - Present engineering recommendation at a public meeting
    - Finalize the Water System Study Addendum following public and District approval of recommended alternative
2) Prepare Environmental Information Document (EID)

This report is an addendum to the 2005 Water System Study. Much of the information from the original study is still applicable to the project and will be referenced as such. This report provides additional information and also updates any information that may have changed since the 2005 study was completed.

This report is organized to provide sections on both existing and future conditions, after which the evaluation of alternatives are presented. The evaluation sections will coincide with the previously discussed Scope of Work by first presenting a description of the conceptual level evaluation, then a detailed evaluation of the top three alternatives, and finally a narrative of the recommended alternative and its plan for implementation.

The Environmental Information Document has been prepared as a stand-alone document and will be referenced as necessary.

Through the course of the planning stage and development of a recommended alternative, the District has been working to secure both land and funding for the proposed improvements. Initial negotiations between the District and private landowners have taken place in order to acquire land or easements for potential well sites. The District's grant administrator, Dick Wyatt of Wyatt and Associates, has investigated several different funding options and is anticipating that funding for design and construction will come from an Idaho Department of Environmental Quality loan and from an Idaho Community Development Block Grant. A bond election is being held on May 15, 2012 in order for the District to receive voter's authorization to obtain the loan. With a passing bond, the District intends to proceed immediately with design, followed by construction in 2013.

B – EXISTING CONDITIONS

The existing conditions have been discussed in the 2005 Water System Study and subsequent 2007 Addendum. This section provides a brief overview of what these documents presented and also provides additional information or amendments as necessary.

B.1 Project Boundary

The area of impact for the planning area includes the entire District. The alternatives discussed later in this report include options for constructing a new distribution system and drilling new wells. But because the project is still in the planning phase and preliminary design hasn't yet begun, the actual routing of the distribution system and location of wells have not been finalized and therefore, the project limits haven't been fully determined. In order to include all potential areas that may be affected, a generous planning area has been provided that essentially encompasses the entire District. A map detailing the approximate Water District boundary and potential area of impact is included in Appendix A.

B.2 Environmental Conditions

Environmental conditions were previously addressed in the EID that was prepared as part of the 2007 Water Study Addendum. In addition, an EID has been prepared for submittal to IDEQ as part of this planning study. The EID provides descriptions of the various environmental conditions as well as necessary mitigation requirements. In general, the proposed project does not have anticipated impacts to the environmental features with the exception of potential cultural resource impacts, which are described below. Also, this report provides an amendment to the population statistics.

B.2.e Cultural Resources

The cultural impacts that could result from this project, if any, are unknown at this time. But because of the known archeological history surrounding the project area, there is potential to encounter archeological sites. During the environmental scoping process, the Nez Perce Tribe Tribal Historic Preservation Officer (THPO) was consulted. It was recommended that an archeology survey be conducted to determine if any historical or archeological sites are present and if there are potential environmental impacts that could occur as a result of the project. The District is in the process of contracting with the Tribe to complete the site survey. Once the survey is completed and the findings are reviewed by the Tribe, required mitigation measures, if any, will be implemented for the project.

B.2.p Socioeconomic profile of the affected community including population statistics

The 2005 Water Study reported the District population at 90 people and had a design year population projection of 192 people. Both the District and surrounding communities have experienced a slow to non-existent population increase over the past 30 years, therefore, the growth rate and design year population have been amended with this report. To determine an appropriate growth rate for planning purposes, U.S. census data was gathered. As an un-incorporated town, census data is not available

for Clearwater. However, census data is provided for the nearby town of Stites, which has comparable demographics to Clearwater and we expect that growth rates between the two communities are consistent. Using the latest verifiable data (1990 and 2000 U.S. census reports for Stites) a simple linear projection method was used which predicted a growth rate of 2.2 people per year. This rate was then applied to the District's 2005 population of 90 people, which resulted in 20-year design population of 150 people.

B.3 Existing System

A detailed description of the existing system has been provided in the 2005 Water System Study, with additional information presented in the 2007 Amendment and the 2009 Pilot Study. A brief description of the various system components are provided here with additional supporting information. Appendix A provides a map of the existing water system.

B.3.a Water Supply

The water supply for the District is surface water from Wall Creek. A raw water diversion on Wall Creek was constructed in 1983. Water from the diversion is transmitted via 6-inch PVC pipe to the treatment plant. The District currently has two water rights for diversion from Wall Creek; one for 0.1 cubic feet per second (cfs) and the other for 0.12 cfs. This equates to about 142,180 gpd or 99 gpm.

B.3.b Storage and Distribution System

There is one 40,000 gallon concrete water storage reservoir which was constructed in 1949, located about one mile north of the treatment plant. The system also has an 8,000 gallon concrete backwash water storage tank constructed in 1983, located just downstream of the plant. This tank is divided into two compartments; one compartment to store water for backwashing the pressure filters and another compartment used to store water for pipeline pressurization during the backwash process.

Because of the rural nature of the Clearwater Water District, the existing distribution system must cover a large geographical area. Investigation of the previous reports has discovered some discrepancies in the actual lengths of the distribution system piping. The 2005 study states that the distribution system consists of about 15,400 linear feet (lf) of 4-inch and 6-inch PVC mains constructed in 1984 along with about 12,100 lf of ¾-inch and 1 ¼-inch galvanized steel laterals constructed in 1949. In addition, the study reports approximately 10,000 lf of galvanized steel service lines sized from ¾-inches to 1¼-inches in diameter, installed in 1949. In total, the report indicates approximately 37,500 lf of distribution mains and service lines. However, after reviewing the 1983 asbuilt drawings and through use of online mapping tools, it appears that the distribution system could have as much as 44,000 lf. The lengths of the distribution mains and service laterals will be verified during the preliminary design phase. Until that time, a conservative approach has been taken for this planning report by utilizing the longer piping measurements found in the asbuilt drawings.

The existing distribution system is currently unmetered and users are charged a flat rate for their water consumption. The system also does not provide direct fire protection, thus there are no full-sized fire hydrants. Hydrants available are for the purpose of filling water tanks on fire trucks and flushing lines.

B.3.c Treatment System

The treatment plant constructed in 1983 is located at the south end of the District. Treatment consists of mixed media pressure filter with chemical feed for coagulation along with a filter-to-waste after backwashing. The plant is fully automated with the filter rated for 100 gpm. The plant disinfection system is a sodium hypochlorite solution feed through a peristaltic pump.

B.3.d System Condition

The distribution system consists of 30-60 year old pipes which require substantial regular maintenance. Significant improvements were made to the distribution system in 1983, but since that time, only minor repairs have been completed for emergency situations. The system has excessive leakage resulting in increased operation and maintenance costs. The existing equipment at the treatment plant is in operable condition but is also aging. The filtration tank appears to be somewhat corroded but the exact condition cannot be determined without an inspection of the internal side of the tank and measurements of steel thickness.

B.3.e Existing hour use for winter and summer seasons

There are no set hours of use for winter and summer seasons.

B.3.f Cross-connection control program

The 2011 Sanitary Survey conducted by IDEQ lists lack of cross connection control provisions and a cross-connection control plan as a significant system deficiency.

B.3.g Sanitary Survey

A copy of the 2011 Sanitary Survey completed by IDEQ is provided in Appendix B. The survey results include numerous deficiencies and recommended improvements.

B.4 Drinking Water Quality

Water analyses were recently performed for both a tap water sample provided from a residence connected to the District's system and also for a water sample taken from a private well located near the existing treatment plant. Copies of the results are provided in Appendix C.

Previous investigations of ground water sources had indicated that lead near the maximum contaminant limit (MCL) could be present within some local wells. However, the sample results taken from the private well showed no lead concentration and none of the tested parameters exceeded the maximum contaminant limit (MCL). Manganese, a secondary parameter, was at, but not, over the limit.

B.5 Hydraulic Analysis

A hydraulic analysis of the existing water distribution system was developed using WaterCAD computer software from Bentley Systems. Demand requirements were based on average daily demands and maximum daily demands within the community. The hydraulic model of the existing distribution system was created from three resources: the 1983 construction plans, information provided in the 2005 Study, and the Google Maps website. The pipe sizes, lengths, and elevations, as well as the key distribution system facilities were input into the model.

The average daily and maximum daily demands were checked to ensure that pressures in the distribution system do not exceed allowable pressures. The Idaho DEQ minimum operating pressure is 40 psi, the maximum is 100 psi. For the Clearwater Water District analysis, the following demands were utilized in the WaterCAD model:

- Existing Average Day Demand: *45 gpm
- Existing Maximum Day Demand: *77 gpm

*Existing average day demand value was based on the total water treated at the plant through the months of July 2004 through March 2005 provided on pages 10 of the 2005 Water System Study prepared by Progressive Engineering Group, Inc. Existing maximum day demand is referenced on page 11 of the report.

In both scenarios, operating pressures exceeded the recommended maximum pressure of 100 psi in some areas of the community and were also lower than the DEQ allowable pressure of 40 psi in other areas. High pressures increase the likelihood of pipe leaks and breakages by increasing the stress on the pipe. High pressures can also damage plumbing and service lines in residences. Low water pressures in a distribution system can be a health hazard since the proper pressures keeps contaminated water from entering the mains. If the pressure in a pipe is too low or is negative, contaminants from nearby surface water, cross-connections, and poor quality house plumbing can be drawn into the water system through cracks or joints in the pipes, thereby introducing bacteria into the distribution system. This has the potential for waterborne illnesses, some of which can be fatal to the very young, elderly or people with compromised immune systems. Many of the homes in Clearwater currently supplied by the distribution system have household pressure reducing valves (PRVs) installed. The following table summarizes the resultant low and high pressures from the existing distribution system model. Data from the hydraulic model is included in Appendix D.

Table B.5.1
Existing System Pressures

	Average Day Demand (45 gpm)	Maximum Day Demand (77 gpm)
Low Pressure	3.1 psi	3.1 psi
High Pressure	199.4 psi	197.7 psi

B.6 System Violations

The Clearwater Water District is currently in violation of the *Idaho Rules for Drinking Water,* IDAPA 58.01.08 due to excessive levels of Disinfection By-products (DBP) and high turbidity levels.

Disinfection By-Product Rule Stage 1. Disinfection By-Product Rule Stage 1 is the first of a staged set of rules that reduces the allowable levels of disinfection by-products in drinking water. The rule established seven new standards and a treatment technique of enhanced coagulation or enhanced softening to further reduce DBP exposure. This rule requires systems serving less than 10,000 people must have at least 25 percent of samples taken at the location of the maximum residence time; the remaining samples must be representative of average residence time. The running annual average (RAA) must not exceed the Maximum contaminant limit (MCL) for total trihalomethanes (TTHM) and haloacetic acid (HAA5). This rule became effective January, 2004. The Clearwater Water District is not in compliance with this rule.

Disinfection By-Product Rule Stage 2. Disinfection By-Product Rule Stage 2 increases public health protection by increasing monitoring requirements and reducing the allowable disinfection by-products (DBP); TTHM and HAA5 concentrations. The DBP's values are based on locational running annual averages (LRAA) calculated at each monitoring location. The allowable MCL for TTHM's is 0.08 mg/l RAA and for HAA5 the limit is 0.06 mg/l RAA. Table B.6.1 shows the individual readings as well as the RAA from the fourth quarter of 2007 to the 2nd quarter of 2011.

Table B.6.1
Disinfection By-Product Values

	HAA5	RAA for HAA5	TTHM	RAA for TTHM
Monitoring Quarter	mg/l	mg/l	mg/l	mg/l
4th 2007	0.07	0.07	0.06	0.06
1st 2008	0.05	0.06	0.06	0.06
2nd 2008		0.06	0.07	0.06
3rd 2008	0.07	0.07	0.06	0.06
4th 2008	0.08	0.07	0.09	0.07
1st 2009	0.08	0.07	0.05	0.07
3rd 2009	0.07	0.07	0.07	0.07
4th 2009	0.05	0.07	0.05	0.06
1st 2010	0.09	0.07	0.07	0.06
2nd 2010	0.08	0.07	0.08	0.07
3rd 2010	0.11	0.08	0.10	0.07
4th 2010	0.09	0.08	0.10	0.07
1st 2011	0.06	0.08	0.06	0.07
2nd 2011	0.08	0.08	0.06	0.07
Average	0.08	0.07	0.07	0.07
MCL		0.06		0.08
% of MCL		117.1%		82.4%

As shown in Table B.6.1, the RAA for TTHM has been close to the MCL for all recorded quarters. The RAA for HAA5 has exceeded or been equal to the MCL for the last fourteen quarters as shown by the shaded values.

In addition to high DBP levels, the Clearwater Water District also has problems with high turbidity. Turbidity is a measure of the amount of total suspended solids (TSS) in the water. For systems that use conventional or direct filtration, the turbidity levels cannot be greater than 1 nephelolometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than the conventional or direct filtration must follow state limits, which must include turbidity at no time exceeding 0.5 NTU. Since 2007, Idaho DEQ records indicate there have been **108** turbidity violations at the plant.

A copy of the water quality violations is included in Appendix B.

B.7 User charges, and O&M budget

The existing distribution system does not currently have meters and users are charged a flat rate of approximately $70 for their water consumption.

The District has an operating and maintenance budget of $33,000 which covers costs of operation, administration, personnel, professional services, and limited maintenance.

B.8 System Pressure

System pressures are discussed within Section B.5 as part of the hydraulic analysis.

B.9 Defects or Deficiencies

The following lists provide deficiencies and recommendations that were identified during the 2011 Sanitary Survey. These deficiencies have not been resolved, but are being addressed as part of this planning study. A complete copy of the Sanitary Survey is provided in Appendix B.

Significant Deficiencies (from Sanitary Survey)

Storage

1. The manhole access for the 8,000 gallon storage tank does not have a cover that is water tight and the cover is not hinged on one side.
2. The 8,000 gallon storage tank has an overflow that does not have vertical section of pipe at least two (2) pipe diameters in length, as required by IDAPA 58.01.08.554.06.b.
3. The 8,000 gallon storage tank hatch does not prevent access by insects and other potential contamination sources, as required by IDAPA 58.01.08.550.08h.
4. The 8,000 gallon storage tank and the 40,000 gallon storage tank do not have year-round access, as required by IDAPA 58.01.08.008b.

Distribution

1. 15% or more of the water is unaccounted for, which is not in accordance with IDAPA 58.01.08.542.10.

2. All dead end water mains are not equipped with a means to flush, as required by IDAPA 58.01.08.42.09.
3. There is no cross connection control program for the public water system, as required by IDAPA 58.01.08.552.06.

Treatment

1. Cross-connection control is not provided on the service water lines that discharge to the solution tanks, as required by IDAPA 58.01.08.531.02.f.i.
2. All threaded non-sample taps are not equipped with an appropriate backflow prevention device, as required by IDAPA 58.01.08.541.01.n.
3. Adequate ventilation is not provided in the treatment building for the dissipation of excess heat and moisture from the equipment, as required by IDAPA 58.01.08.541.01.e. At the time of the inspection there was evidence of corrosion of metallic components from excessive heat and/or moisture.

Disinfection

1. There is no auxiliary power on-site for the chlorine chemical pump, as required by IDAPA 58.01.08.501.07.

Deficiencies (from Sanitary Survey)

Storage

1. For the 8,000 gallon storage reservoir, one or more of the overflows are not brought down to an elevation between 12 and 24 inches above the ground surface, as required by IDAPA 58.01.08.544.06.
2. For the 8,000 gallon storage reservoir, the overflow does not discharge over a drainage inlet structure or splash plate, as required by IDAPA 58.01.08.544.06.
3. For the 40,000 gallon storage reservoir, one or more of the overflows are not brought down to an elevation between 12 and 24 inches above the ground surface, as required by IDAPA 58.01.08.544.06.
4. The 40,000 gallon storage reservoir, which provides pressure directly to the distribution system, is not designed so that it can be isolated from the distribution system without causing a loss of pressure in the distribution system, as required by IDAPA 58.01.08.546.02.
5. The vent for the 40,000 gallon storage reservoir does not open downward, as required by IDAPA 58.01.08.544.08.d.

Recommended Improvements (from Sanitary Survey)

Storage

1. Storage Tank Water Level Measurement – At the time of the inspection the Public Drinking Water System (PWS) does not have a means to measure the water level in the storage unit (40,000 gallon reservoir). DEQ recommends the PWS provide the operator with the ability to easily monitor and measure the water level in the storage unit.

C - FUTURE CONDITIONS

Design Year & Population Projection Amendment

The 2005 Water System Study (Progressive Engineering) used a 20-year design period extending to the year 2026. Due to the amount of time that has elapsed since this study was first prepared, it is necessary to update the 20-year design period. The amended design year used throughout this report is 2032.

The original 2005 study stated a current population of 90 people and a design year projected population of 192. This projected population was based on maximum build out of all available lots within the District. Given the slow growth rate that has been seen throughout the surrounding area over the past years, this projection is not likely to be attained in the design period. In discussing the population projection and associated water demands with the District, it was agreed that this maximum build out scenario was not the most appropriate projection to use.

For a more realistic projection, U.S. census data was gathered to determine an appropriate growth rate for the District. As an unincorporated town, census data is not available for Clearwater. However, census data is provided for the nearby town of Stites, which has comparable demographics to Clearwater, and we expect that growth rates between the two communities are consistent. Using the latest verifiable data (1990 and 2000 U.S. census reports for Stites) a simple linear projection method was used which predicts a growth rate of 2.2 people per year. This rate was then applied to the District's 2005 population of 90 people, which results in an amended design population for this report of 150 people for the year 2032.

Demands

The 2005 study utilized a maximum system demand of 101,064 gallons per day (gpd), which was based on the average day flow from the peak monthly usage between July 2004 and March 2005. A peaking factor of 1.10 was applied for a peak daily flow of 111,170 gpd (77 gpm). For the current population of 90 people this equates to approximately 1,235 gallons per capita day (gpcd).

Later sections in this report will discuss the conceptual evaluation of different alternatives. Included in the evaluation were two different options for distribution system design. First, the existing system can continue to be utilized for both domestic and non-domestic (irrigation/livestock) purposes. Or a dual distribution system could be developed which would include a new distribution system for domestic water and the existing distribution system for non-domestic water purposes. Depending on which distribution system design is selected, there will be differing demands. Alternatives that utilize the existing distribution system will require a different method and estimates of demands than the alternatives that utilize a dual distribution system for separate domestic and non-domestic water supply.

Table C.1 summarizes the current and projected demands for alternatives that will continue to use the existing distribution system for all water purposes.

Table C.1
System Demands using Existing Distribution System

Year	Population	Average Day (gpd)	Average Day (gpm)	Maximum Day (gpm)
2005	90	101,064	70	77
2032	150	185,250	129	142

In most systems water demands for domestic uses are consistent throughout the year. Without metered data domestic use can be based on textbook values for sewer flows. A textbook value when other data is not available is 100 gpcd. Irrigation water does not return to the sewer system and is not included in domestic demands in this study.

Water that is unaccounted for can also increase demands and is the difference between water produced and water sold. It can result from a combination of factors including leakage, maintenance flushing of pipelines, dust control for local streets, or unmetered irrigation. For an entirely new system the unaccounted water should be very low. However, the distribution system is relatively long and small leaks can develop over time that can add to the water demand. In addition, the existing service lines to each user may be leaking and unless replaced in their entirety, will continue to waste water. The 2011 sanitary survey performed by the Idaho Department of Environmental Quality (IDEQ) determined that leaks account for greater than 15% of demand based on the existing distribution system. Thus, it is recommended that on a domestic-only distribution system some allowance, approximately 15%, be provided in final design for leakage. If all the service lines are replaced to each residence, this may be slightly less.

Table C.2 provides the system demands if alternatives using a dual distribution system are selected. Demands are only provided for domestic use since irrigation and livestock demands are assumed to become non-regulated and would continue to be supplied through the existing surface water source and distribution system. This table also differentiates the system demands for surface water versus ground water alternatives. If the selected alternative continues to use surface water for irrigation and livestock purposes, as well as domestic supply, additional water demand is required for backwashing the treatment facilities. If the selected alternative uses ground water for its domestic water supply, this additional demand will not be required.

Table C.2 System Demands with a Dual Distribution System (Domestic supply only)						
Water Source	Year	Population	Avg. Day (gpd)	Avg. Day w/ 15% Leakage (gpd)	Avg. Day (gpm)	Max. Day (gpm)
Surface water	2005	90	13,050	15,000	10.4	31
Surface water	2032	150	21,750	25,000	17.4	52
Ground water	2005	90	9,000	10,350	7.2	22
Ground water	2032	150	15,000	17,250	12.0	36

Maximum Day demands are estimated using a peaking factor of 3.0 times the average day demand.

For evaluation of the ground water source alternatives, the projected demand of 17,250 gpd was rounded up to 20,000 gpd.

Hydraulic Analysis of Domestic-Only Water Distribution System

The proposed dual distribution systems were modeled in WaterCAD and then used for preliminary planning purposes. The WaterCAD modeling summary is provided in Appendix D.

The instantaneous water demands for residential areas are based upon the total number of residences served and the average usage in gallons per minute (gpm) per residence. The average usage based on a 50-residence community is 3 gpm per user (Ameen, 1960) with a total maximum instantaneous demand of 150 gpm. This value is conservative and allows for growth within the Clearwater District, which currently serves about 50 residences.

The occurrence of maximum instantaneous demands exceeds the average and maximum daily demands within a system thus it is necessary to calculate the maximum instantaneous demands in order to properly design the distribution system. The model was evaluated under two extreme operating conditions: static/average day demand (12 gpm) and maximum instantaneous demand (150 gpm). Six PRVs were placed in the model to ensure that pressures remained within the operating range required by Idaho DEQ (40 to 100 psi). Table C.3 shows the high and low pressures for average and maximum instantaneous demands.

Table C.3 Domestic-Only Distribution System Pressures*		
	Static Average Day Demand (12 gpm)	Maximum Instantaneous Demand (150 gpm)
Low Pressure	50.0	42.0
High Pressure	99.6	88.1

*Note: These values were obtained using 6 PRVs in the system

Request for Deviation

In the case of the Clearwater District, extreme elevation drops result in high pressures at the dead ends of many of the lateral mains of the system. The pressures in the hydraulic model were reduced along these laterals by installing PRVs. If, however, the maximum allowable static pressure were allowed to be increased, approximately 3 PRVs could be eliminated from the system. Eliminating the PRVs will reduce the cost of the project and reduce O&M for the District. According to the operator, all of the residences currently served by the system have household PRVs installed because of the existing high pressures in the system. These household PRVs would continue to be utilized with the proposed project. Thus a request will be made to DEQ for a deviation from standard Idaho DEQ pressure requirements to increase the maximum allowable static pressure. This request will be formally initiated during the final design of the project.

Disinfection

The existing treatment plant currently utilizes a liquid chlorination system where chlorine is fed to the system via a feed pump. The liquid type of chlorination is sodium hypochlorite with 12.5 percent available chlorine, commonly used as laundry bleach. Contact time (CT) is provided by a main that ties into an 8,000 gallon partially buried storage tank.

An alternative to liquid chlorination is to install a pellet feed chlorine unit. The solid form of chlorine is calcium hypochlorite with 65 percent available chlorine. This type of chlorination system consists of a hopper for the pellets. One method used by *Arch Constant Chlor*® is a system where water is sprayed vertically onto the pellets for a set amount of time. The spray saturates the pellets to generate a solution of calcium hypochlorite in the unit's reservoir. The solution is then metered out via a dosing pump into the distribution system. The remaining pellets stay dry and are prevented from dissolving prematurely. Using the proposed design flow of 20,000 gpd Clearwater would use about 0.3 pounds per day or about 110 pounds per year. The cost of the pellets is about $3.00 per pound which comes to about $330 per year. This type of chlorination is easy to use and economical. The existing system would require some re-plumbing to accommodate the new unit.

If a surface water source alternative is selected and the District desires to change from the existing liquid chlorination system to the pellet feed system approximately $25,000 will need to be added to the cost estimate to purchase and install the unit in the plant.

The groundwater alternatives require deep wells which are unlikely to be influenced by surface water, thus chlorination is not likely necessary.

A surface water supply using either liquid or pellet chlorination must be capable of maintaining a chlorine residual at all points in the distribution system.

D - DEVELOPMENT AND INITIAL SCREENING OF ALTERNATIVES

This section discusses the various alternatives that were evaluated for the Clearwater Water District at the conceptual level. Numerous alternatives were considered to remedy the issues with water quality and bring the treatment plant into compliance with drinking water standards. The alternatives considered were categorized by water supply source: surface water, ground water, or a combination of the two. These alternatives are outlined below and discussed in more detail in later sections of this report.

I. Surface Water Source Alternatives
   1. Utilize Existing Distribution System with Membrane Filtration System
   2. Construct Dual Distribution System with Smaller Membrane Filtration System

With the surface water source alternatives, treatment methods other than membrane filtration were initially considered. They are:

- Coagulation/Flocculation
- Precipitation Softening/Filtration
- Aeration
- Synthetic Resins Ion Exchange System
- Addition of Oxidizing Agents
- Slow Sand Filtration
- Adsorption by PAC or GAC
- Alternate Disinfectants – Chloramines, Chlorine Dioxide & Ozone
- Lowering pH

However, a membrane system is the only treatment method that is certain to address the DBP issues. The above methods are not viable because, while some of them may work for the District, they would all need extensive pilot testing and may not have the desired results for reducing the levels of DBPs in the treated water. These treatment methods are extremely sensitive to water parameters such as pH, water temperature, and the amount of organic material in the raw water that can and will change over the course of a year. Membranes are, in essence, a barrier to particulate which react with chlorine to form DBPs. The pilot testing needed for membranes would be used to determine which size filter is most efficient and achieves the desired results.

II. Ground Water Source Alternatives
   3. Utilize Existing Distribution System with Two New Ground Water Wells
   4. Dual Distribution System with Two New Ground Water Wells

III. Surface Water and Ground Water Combination Alternative
   5. Combination Surface Water & Ground Water w/ Dual Distribution System

IV. No Action Alternative

Analysis of Alternatives

I. Surface Water Source Alternatives

Alternative 1 - Utilize Existing Distribution System with Membrane Filtration System

This alternative consists of utilizing the existing distribution system for all water demands (domestic and irrigation) and installing a membrane filtration system at the plant to address issues with high levels of DBPs. Membrane filtration has four levels of filtration; microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO). The difference between these four types of filtration is the size of the molecules the filter retains. The following shows the membrane pore size for each type of filtration.

Filter Type	Pore Size (nm)
Microfiltration	50-5000
Ultrafiltration	5-50
Nanofiltration	0.6-5
Reverse Osmosis	<0.6

The process uses pressure to force water through a membrane which blocks the passage of some constituents while allowing water and others to pass through. The particles of organic carbon and DBP precursors in the raw water are larger than the particles of water, thus the larger organic carbon particles would be retained on the filter allowing the purer water to flow through.

The membrane filter would require backwashing with the backwash water returning to an evaporation pond.

In the case of the Clearwater Water District, filtration can be used to filter out organic materials prior to chlorination, thus reducing the amount of precursors in the raw water. This alternative includes continued use of the existing Yardney filtration as pretreatment for the membrane system. The pretreatment will reduce the operational expenses required for the membrane equipment.

This alternative will require the operator be trained in maintaining and backwashing the new membrane filters. Every 5 to 10 years, the filters will have to be completely replaced, depending on the amount of organics in the raw water. Pre-filters will be required ahead of the membrane which will need to be replaced a few times per year. The existing building is too small to house a new membrane filtration system, thus a new building constructed adjacent to the current building is proposed in this alternative.

The 2011 IDEQ sanitary survey noted that the long dead end mains did not have any means for flushing. Included in alternate are flushing hydrants installed at the end of each of the five dead-end mains. Meters in meter pits would also be required for all service connections.

Alternative 2 - Dual Distribution System with Smaller Membrane Filtration System

This alternative is similar to Alternative 1 with the exception that the required membrane filtration system previously described would be much smaller since it would only be used for domestic demands. With this dual distribution alternative, treated water from this smaller membrane filter would be supplied through a newly constructed distribution system for the supply of domestic-only water demands. The new pipe would be "pulled" small diameter (11/2-inch to 3-inch) HDPE pipe. These small diameter pipes can be pulled or bored in some locations, eliminating the need to excavate for installation, thus surface disturbance and restoration will be kept at a minimum. A separate new HDPE service line would be installed for each home or business for their domestic use.

The existing distribution pipes would remain in place and be used solely for irrigation demands. All irrigation water would be provided by the existing surface water source, but would not receive membrane filtration. Only water used for human consumption needs to adhere to the requirements of federal and state regulations for drinking water. Irrigation water and water used for line flushing and other non-potable uses does not need to be treated.

This alternative allows for much smaller treatment equipment since domestic demands are very small compared to total peak demands. The maximum daily domestic demands for the design year are on the order of 52 gpm whereas the total maximum daily demands are about 142 gpm. Smaller equipment will also cost less to install and significantly less for power, operation and maintenance.

An option with this alternative is to re-use the existing pressure filters for the irrigation system. During times of high turbidity in the source water, the filters will remove some particulate materials prior to the irrigation distribution system. The existing Yardney roughing filters will be re-plumbed for pre-treatment prior to the membrane reverse osmosis unit.

There are minor changes in operational requirements for the distribution system improvements. This alternative would create two parallel distribution systems. One advantage of this alternative is that the non-domestic water system would be less critical to maintain in service. Each time a break occurs on a typical system providing domestic water, it is very disruptive and time consuming because of the operational problems associated with line breaks on public drinking water systems. Converting the existing distribution lines to irrigation only should reduce the urgency of repairs compared with the current condition. The new small diameter system should be very reliable and low maintenance for many years. Typically distribution pipe lasts much longer than the 20-year system design life evaluated in this report, thus it will be slightly oversized to accommodate future growth beyond the 20-year planning period.

In this alternative the existing 40,000 gallon concrete ground level tank will be dedicated for water which will be needed for peak irrigation and other non-potable water demands. The proposed domestic distribution system will also need a reservoir to provide water during peak demands. This alternative includes a 20,000 gallon reservoir with pump package which will be able to meet peak instantaneous demands. During final design a more thorough analysis will need to be conducted to determine the exact size of a new tank and pump package.

The District's existing water rights are for 100 gpm. In the Design Year of 2032, average day and maximum day demands are estimated to be 129 gpm and 142 gpm respectively. As the District grows and demands increase, additional water rights will likely become necessary.

II. Ground Water Source Alternatives

Alternative 3 - Utilize Existing Distribution System with Two New Ground Water Wells
This alternative consists of utilizing the existing distribution system and drilling two new ground water wells. The existing plant would no longer be needed if the wells are drilled near the treatment plant, but could be used to house a new pressure tank and chlorination unit, if required.

A Ground Water Assessment Study was completed by Wyatt & Associates in 2010 that assessed the feasibility of finding a ground water source to provide for the water demands of the District. The conclusion was that "*Reviewing the water well data supplied by the IDWR and discussing the geology and potential for ground water in the area with local well drillers, the potential for wells for 40 to 60 gpm is positive and deserves further investigation.*"

The recommendation from this report was to drill two or three test wells to municipal standards. If the water is found to be adequate, the test wells can be converted for use by the District. The ground water study found that the greatest potential for locating a well of 50 to 100 gpm was in the area adjacent to the present water plant and/or in the center of the District near the main street area of Clearwater. Eight inch test wells at 450 to 700 feet deep are recommended which would allow the District to use them as a production well(s). A 100-foot diameter area around each well is required to meet Idaho standards for well-head protection thus the District must either own the land or obtain easements. Included in this alternative is construction of a pump building to house the well pumps.

There is always a risk associated with drilling wells. The water quality and/or quantity may not be adequate for District users.

The 2011 IDEQ sanitary survey noted that some of the long dead end mains did not have any means for flushing. Included in this alternate are flushing hydrants installed at the end of each of the five dead end mains. Meters in meter pits would also be required for all service connections.

Alternative 4 - Dual Distribution System with Two New Ground Water Wells

This alternative is similar to Ground Water Alternative 1 in that it requires the construction of at least two new ground water wells and converting from a surface water source to strictly a ground water source. There is a risk associated with drilling wells in that the water quality and/or quantity may not be adequate for District users.

In this alternative, a dual distribution system would be implemented by constructing a new small diameter distribution system for domestic-only water supply. These small diameter pipes can be pulled or bored in some locations, eliminating the need to excavate for installation, thus surface disturbance and restoration will be kept at a minimum. As discussed in a previous alternative, a separate HDPE service would be installed for each home or business for their domestic use. As in Alternative 2, the distribution system will be designed to accommodate future growth beyond the 20-year planning period.

The existing distribution mains would continue to be used for irrigation and livestock purposes. The existing treatment plant would be abandoned in this alternative. Operation and maintenance costs will be reduced once the plant is no longer operational. In this alternative, as in Alternative 2, a new storage reservoir will be needed to provide peak instantaneous demands for domestic use.

III. Surface Water and Ground Water Combination Alternative

Alternative 5 – Combination Surface Water & Ground Water w/ Dual Distribution System

This alternative is a combination of surface water and ground water. The alternative would utilize the existing distribution system with the current surface water source for non-domestic uses and a new ground water source (two wells) with a new distribution system for domestic demands.

The new distribution system would be consistent with the other dual distribution system alternatives: small diameter pipe that could be pulled or bored. Each residence or business would get a new HDPE service line for their domestic use. Meters and flushing hydrants would also be installed.

The treatment plant would no longer be needed since the irrigation water (from the surface water supply) would not require treatment. An option with this alternative is to re-plumb the existing Yardney roughing filters for use with the irrigation system. During times of high turbidity in the source water, the filters will remove some particulate materials prior to the irrigation distribution system which could help extend the life of the existing piping.

As discussed previously, there is a risk associated with drilling wells. However, an advantage to this alternative is that the ground water wells would not have to have as high a production rate as alternative 3 or 4. The ground water source would only be used for domestic supply thus reducing the demands to approximately 20,000 gpd during maximum day use. This may be a feasible option if wells are drilled which do not produce adequate water to meet the demands of providing for both irrigation and domestic use.

IV. No Action Alternative

Alternative 6 – No Action Alternative

This alternative allows the existing treatment and distribution systems to remain as is with only normal operations and maintenance. The existing treatment system is not meeting current design standards and is operating with many problems that need immediate correction in order to be in compliance. The No Action Alternative does not address the District's deficiency issues regarding the high turbidity and high DBP levels.

The existing distribution system consists of old, deteriorated, dead-end mains, with no means for flushing. In addition, the 2011 Sanitary Survey estimated that 15% of the treated water is being lost due to leakage in the system.

If the District fails to bring their system into compliance, it could lose its system entirely. This No Action Alternative is not a feasible option for the District and will not receive further consideration.

Environmental Impacts

The potential environmental impacts that could result from the alternatives were investigated during preparation of the Environmental Information Document (EID). The EID has been prepared as a stand-along document and provides information on all environmental features and environmental consultation that is part of this project.

With the exception of cultural resources, there are no known environmental impacts that will result from the proposed project. Cultural resources pose concern because of the known archeological history that surrounds the project area and the potential to encounter unknown archeological sites. As part of the EID process, consultation with the Nez Perce Tribe – Tribal Historic Preservation Officer (THPO) was conducted by DEQ. After reviewing the proposed planning area, the Tribe requested that an archeological survey be completed. The District is in the process of securing a contract with the Tribe to perform the survey. This survey will determine if any historical or archeological sites are present and if there are potential environmental impacts that could result from the project. Mitigation measures, if any, will be determined upon completion of the survey.

In general, the potential for environmental impacts will be greater for the alternatives that include construction of a new distribution system because of the increased area of impact. With the exception of Alternative 6 – No Action Alternative, the alternative with the least environmental impact would appear to be Alternative 1 which does not include distribution system improvements or drilling of new ground water wells. The alternative that would appear to have the greatest potential impacts is Alternative 4 because it includes a new distribution system and wells. Alternative 5 would have similar impacts as Alternate 4, but because the wells in Alternate 5 are only supplying domestic water they do not require the same water quantity as those in Alternate 4 which should reduce any impacts to the groundwater source.

E - FINAL SCREENING OF PRINCIPAL ALTERNATIVES

Of the alternatives discussed in the previous section, three were brought forward for further analysis and consideration. These three alternatives were recommended for further evaluation for the reasons discussed below and were evaluated in greater detail. The other alternatives, have been eliminated because they do not appear as favorable as the three listed below due to higher cost, increased risk, and/or lack of distribution system improvements.

Detailed preliminary cost estimates were prepared for these three alternatives. Operations and Maintenance (O&M) costs were also estimated. O&M costs generally include all costs for labor, parts/materials, chemicals, repairs to the system, power, insurance, personnel/office and all other costs associated with running a treatment and distribution system. Cost estimates and O&M costs for the three alternatives are provided in Appendix E.

Alternative 2 - Dual Distribution System with Smaller Membrane Filtration System
This alternative consists of constructing a new membrane filtration system at the existing treatment plant that will be used only for treatment of potable water. The domestic water supply will still come from the existing surface water source (Wall Creek). A small-diameter distribution system for supply of domestic only demands will be constructed, as well as a new 20,000 water storage reservoir. Appendix A includes a figure illustrating the major components of Alternate 2.

All irrigation/livestock water will be provided through the existing system but will not receive membrane filtration. This water will also be provided by the existing surface water source.

The estimated capital cost for this alternative is $1,680,000. Although this alternative is more expensive than Alternative 3, it has the advantage of providing a new distribution system. The estimated O&M costs for this alternative are $84,870

Alternative 3 - Utilize Existing Distribution System with Two New Ground Water Wells
This alternative consists of utilizing the existing distribution system and drilling two new ground water wells. Appendix A includes a figure illustrating the major components of Alternate 3.

According to the 2010 Ground Water Assessment Study by Wyatt & Associates, the estimated cost for drilling new wells is $207,000. The cost to satisfy the sanitary sewer deficiencies and install new meters and flushing hydrants would add another $69,250 to the project for a total capital cost of $277,000. This alternative will no longer require use of the existing treatment plant thus the District should see an initial reduction in electric, chemical, labor and other costs associated with operating the plant. The estimated O&M costs for this alternative are $22,750.

This alternative appears to be the lowest cost alternative to meet the current water quality objectives. However, this alternative does not include a new distribution system, thus shouldn't be compared head to head with Alternative 2 and Alternative 5. Without replacing or making significant improvements to the existing distribution system, operation and maintenance costs will continue to increase.

Alternative 5 – Combination Surface Water & Ground Water w/ Dual Distribution System

This alternative utilizes a combination of surface water and ground water. The existing distribution system with the current surface water source would be used for non-domestic purposes. A new ground water source (two wells) with a new distribution system would be constructed for domestic demands. The 2010 Groundwater Assessment Study prepared by Wyatt and Associates showed two locations for the wells. The ideal location for the wells would be near the existing plant. This location will require less piping and electrical costs to implement. The potential well location north of the plant would require additional piping to service those parcels to the south. The District and TD&H, along with a hydrogeologist consultant, will need to investigate further to determine which location would be the better option as far as water quantity and quality. Appendix A provides a figure illustrating the major components of Alternative 5.

The estimated capital cost for this alternative is $937,000. Although this alternative is more expensive than Alternative 3, it has the advantage of providing a new distribution system as well. This alternative will no longer require use of the existing treatment plant thus the District should see a reduction in electric, chemical, labor and other costs associated with operating the plant. The estimated O&M costs for this alternative are $25,250

Cost Summary for Alternatives

Detailed cost estimates were prepared for each of the final three alternatives and are included in Appendix E. The basis for the detailed cost estimates presented in this report is primarily engineering experience associated with dozens of similar projects over the last decade. Where appropriate, materials suppliers have been contacted to verify any items in question. The *RS Means Construction Cost Data* and *Engineering News Record* cost indexes have been used for some unit price information and inflationary adjustments, respectively. As with any estimate, it is just that, an estimate. Actual costs will be dependent on many factors that are beyond the control of the engineer or the District. Often times the final cost will be heavily dependent on the

number of contractors bidding on the project and how well it fits in with their schedule of work and needs at the time. This factor is impossible to gauge and could easily impact the final costs by as much as 10% to 20% or more. Thus, reasonable, conservative budgeting is the most important thing at the preliminary stages.

Table E.1 is a summary of the present worth associated with each of the three alternatives and includes O&M costs, capital costs, salvage value, and computed present worth costs. For the construction estimates provided in the appendix, each line item was also assigned a salvage value. For items that have no obvious salvage value, no value was given. For most other items, a value of 25% of the capital cost was estimated. For items such as land the salvage value was estimated to be the same as the initial cost.

Table E.1
Present Worth Summary for Alternatives

Alternative	Present Worth of O&M Costs	Capital Costs	Salvage Value	Total Present Worth Cost
Alternative 2 - Dual Distribution System w/ Smaller Membrane Filtration System	$1,680,000	$1,083,000	$159,000	$2,604,000
Alternative 3 - Utilize Existing Distribution System w/ Two New Ground Water Wells	$450,000	$277,000	$45,000	$682,000
Alternative 5 – Combination Surface Water & Ground Water w/ Dual Distribution System	$500,000	$937,000	$133,000	$1,304,000

F - SELECTED ALTERNATIVE DESRIPTION AND IMPLEMENTATION METHODS

Selected Alternative

Alternative 5 is the selected alternative contingent on the availability of funding for this level of capital expenses. The proposed improvements resulting from this alternative will include drilling two new groundwater wells and constructing a new small diameter distribution system for potable water. The existing surface water source and distribution system will continue to be utilized for non-potable water purposes including irrigation and livestock watering. Appendix A provides a map of the proposed improvements and the area of impact.

The proposed project will provide two new groundwater wells. Several locations for the wells have been considered as shown on the project maps. Initial investigations indicate that the wells could be approximately 500 feet in depth and be constructed to provide 55 gpm for domestic only water supply. These requirements will be evaluated and modified during preliminary engineering.

Based on past project experience and discussions with DEQ representatives, it is anticipated that the well water may be left untreated. Groundwater sources throughout Idaho are reliably of good quality.

A new 20,000 gallon storage reservoir will be installed for the new domestic water system. The final location of the storage reservoir has not yet been determined, but tentative planning indicates that it could be placed next to the existing backwash tank which is located on property already owned by the District.

The routing of the distribution system will not be determined until the preliminary engineering phase. However, approximations using the existing system location have been made in order to develop piping size and lengths and generate cost estimates. Table 8.1 provides the planning estimates for the distribution system lines.

Table F.1
Estimated Distribution System Piping

Pipe Material & Diameter	Length (LF)
HDPE Water Main, 1-1/2"	8,190
HDPE Water Main, 2"	5,415
HDPE Water Main, 3"	20,120
C 900 PVC Water Main, 4"	4,360
C 900 PVC Water Main, 6"	3,275
HDPE Service Lines, 1-1/2"	2,000

Included in this alternate are flushing hydrants installed at the end of each of the five dead end mains. Meters in meter pits would also be required for all service connections.

As mentioned, the existing surface water source and distribution system would continue to be used for irrigation and livestock purposes. Treatment would not be required, but an option with this alternative is to re-plumb the existing Yardney roughing filters for reuse in basic treatment. During times of high turbidity in the source water, the filters will remove some particulate materials which could decrease maintenance issues within the existing distribution piping.

The advantages and disadvantages of alternative 5 are listed below.

Advantages

- A complete new distribution system for domestic is included.
- Leakage concerns would be addressed and compliance with the DEQ 15% unaccounted water criteria could be met.
- Utilizing a high quality groundwater supply would likely eliminate the need for treatment.
- Operational complexity would be minimized.
- Regulatory complexity and compliance issues would be minimized.
- The quantity of groundwater supply would be minimized thus increasing the probability that the available supply would be sufficient to meet the District's needs.
- The District should be able to maintain their surface water right.
- Leakage and breaks on the existing piping network would be less critical since it would serve only non-domestic demands.

Disadvantages

- The capital cost is significantly higher than alternative 3.
- There is some risk that the groundwater quantity or quality may not be as expected. Some costs will need to be incurred in order to verify both quantity and quality.
- Water rights would need to be secured for the new groundwater system.
- The District would have more piping infrastructure to maintain (domestic and non-domestic)

Public Participation

A public meeting was held with members of the Water District on January 21, 2012 in order to present all alternatives and the engineer's recommendation for alternative 5. Survey questionnaires were provided at the meeting and were collected during the following 14-day comment period. At the end of the comment period, the questionnaires were reviewed and discussed by the Water District Board and then a formal decision was made at a scheduled Board meeting to approve the engineering recommendation.

Appendix F provides the following public involvement documentation:

- Advertisement for public meeting published in the Idaho County Free Press
- Public mailer sent to residents of the Clearwater Water District prior to the public meeting
- Sign in sheet from the public meeting
- Outline of presentation from the public meeting
- Survey questionnaires with comments
- Meeting minutes of District meeting documenting official selection of engineer's recommended alternative

Potential Funding Sources

The 2005 Water System Study listed the following potential methods for financing system improvements:

- Funds on Hand
- Sale of Revenue Bonds
- Sale of General Obligation Bonds
- Utility Local Improvements Districts (LID)
- USDA Rural Development (RD) Grants or Loans
- State of Idaho Department of Environmental Quality (DEQ) Grants or Loans
- Water Resources Board (WRB)
- Community Development Block Grant (CDBG)

Currently, an offer has been extended by Idaho DEQ for a 0% 30-year loan, with possible loan forgiveness. This is an opportunity that will greatly benefit the District. In addition, the District will pursue CDBG grant money to supplement the project cost. The following is the anticipated funding sources:

DEQ Share (loan)	$520,000
CDBG Share (grant)	$400,000
Clearwater Water District Share	$ 17,000
Total Funding	$937,000

The current user rate is approximately $70 per month. The anticipated monthly increase for acquiring the DEQ loan and completing the project is $30 per month. There would not be an increase in monthly operation or maintenance costs. This will result in user charges of approximate $100 per month.

Implementation
A proposed implementation schedule is provided in Table F.3.

Table F.3 Implementation Schedule	
Task	Completion Date
1. Submit Draft Report to CWWD	December 2011
2. First Public Hearing on Draft Report	January 2012
3. Final Report	April 2012
4. DEQ Review	April - May 2012
5. Bon Election	May 2012
6. Finalized and Submit Environmental Documents	June 2012
7. Grant and Loan Applications	June 2012
8. Funding secured	June 2012
9. Begin Engineering Design	July 2012
10. Drill Test Wells	July 2012
11. Preliminary Construction Plans and Specifications Complete	November 2012
12. Agency Comments on Construction Plans and Specifications	December 2013
13. DEQ Approval of Plans and Specifications	January 2013
14. Final Construction Plans and Specifications Complete	February 2013
15. Advertise For Construction Bids	March 2013
16. Award Construction Contract	April 2013
17. Begin Construction	May 2013
18. Construction Complete	July 2013
19. One-Year Warranty Inspection	July 2014

G - REFERENCES

1. Clearwater Water District Ground Water Assessment Study, May 2010, prepared by Wyatt & Associates.
2. Water System Study for the Clearwater Water District, September 2005, prepared by Progressive Engineering Group, Inc.
3. Engineering Report Addendum for Water System Improvements, Filtration Plant Improvements – Clearwater Water District, August 2007, prepared by USKH.
4. Pilot Test Study Clearwater Water District, Stites, Idaho, December 2009, prepared by USKH.
5. US Environmental Protection Agency, Drinking Water Standards.
6. Idaho Department of Environmental Quality, Drinking Water Regulations
7. Community Water Systems Source Book, 5th edition, High Point, North Carolina: Technical Proceedings, 1960, Ameen, Joseph S.

Appendix A – Maps and Figures

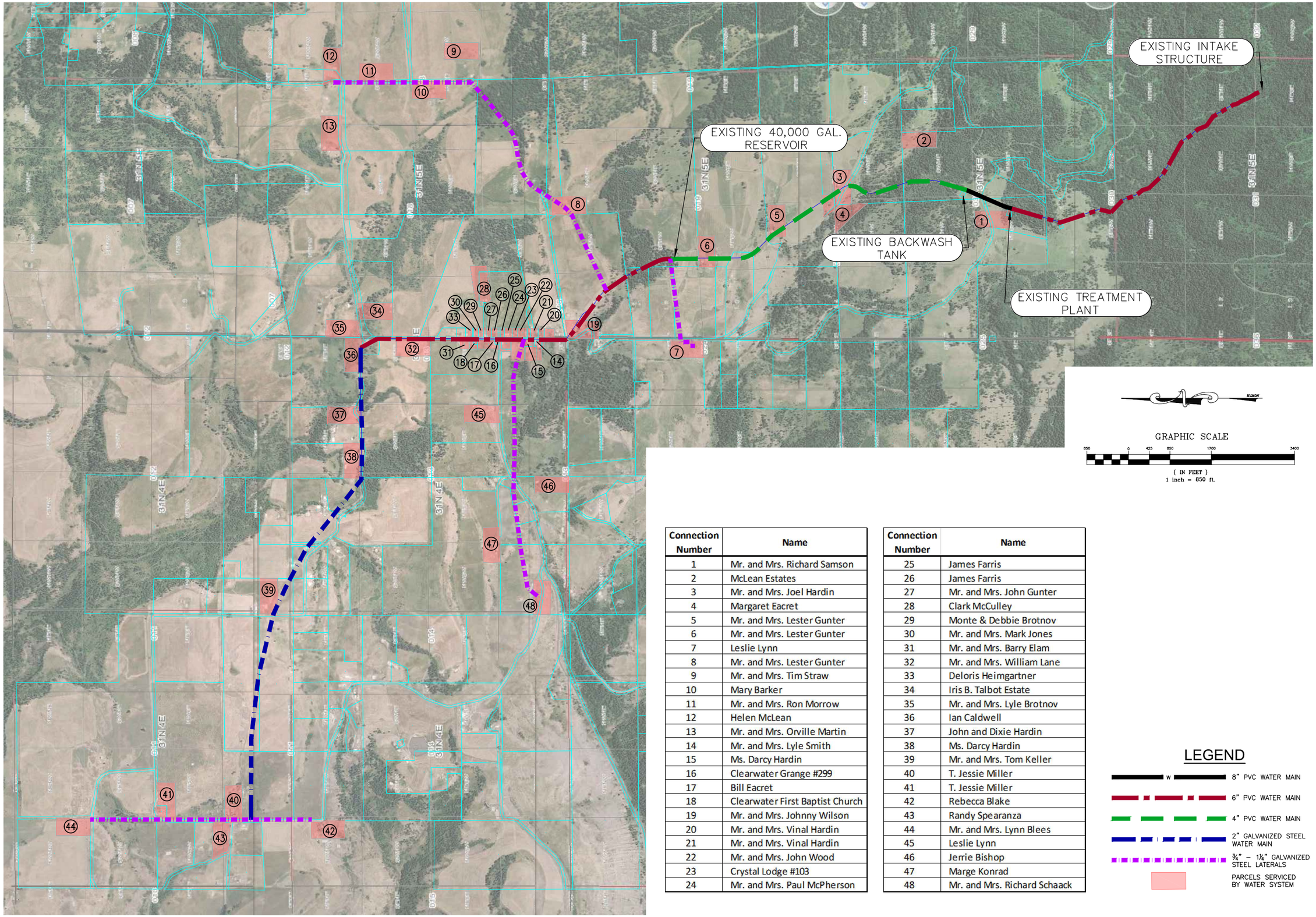
CLEARWATER WATER DISTRICT - WATER SYSTEM IMPROVEMENT PROJECT
CLEARWATER, IDAHO COUNTY, IDAHO

VICINITY MAP

TD&H Engineering
tdhengineering.com
GREAT FALLS-BOZEMAN-KALISPELL
SPOKANE
LEWISTON
MONTANA
WASHINGTON
IDAHO

DRAWN BY:	HRC
DESIGNED BY:	HRC
QUALITY CHECK:	
DATE:	02/10/12
JOB NO.	L11-017
CAD NO.	VICINITY MAP

FIGURE
1



Connection Number	Name
1	Mr. and Mrs. Richard Samson
2	McLean Estates
3	Mr. and Mrs. Joel Hardin
4	Margaret Eacret
5	Mr. and Mrs. Lester Gunter
6	Mr. and Mrs. Lester Gunter
7	Leslie Lynn
8	Mr. and Mrs. Lester Gunter
9	Mr. and Mrs. Tim Straw
10	Mary Barker
11	Mr. and Mrs. Ron Morrow
12	Helen McLean
13	Mr. and Mrs. Orville Martin
14	Mr. and Mrs. Lyle Smith
15	Ms. Darcy Hardin
16	Clearwater Grange #299
17	Bill Eacret
18	Clearwater First Baptist Church
19	Mr. and Mrs. Johnny Wilson
20	Mr. and Mrs. Vinal Hardin
21	Mr. and Mrs. Vinal Hardin
22	Mr. and Mrs. John Wood
23	Crystal Lodge #103
24	Mr. and Mrs. Paul McPherson

Connection Number	Name
25	James Farris
26	James Farris
27	Mr. and Mrs. John Gunter
28	Clark McCulley
29	Monte & Debbie Brotnov
30	Mr. and Mrs. Mark Jones
31	Mr. and Mrs. Barry Elam
32	Mr. and Mrs. William Lane
33	Deloris Heimgartner
34	Iris B. Talbot Estate
35	Mr. and Mrs. Lyle Brotnov
36	Ian Caldwell
37	John and Dixie Hardin
38	Ms. Darcy Hardin
39	Mr. and Mrs. Tom Keller
40	T. Jessie Miller
41	T. Jessie Miller
42	Rebecca Blake
43	Randy Spearanza
44	Mr. and Mrs. Lynn Blees
45	Leslie Lynn
46	Jerrie Bishop
47	Marge Konrad
48	Mr. and Mrs. Richard Schaack

LEGEND

- 8" PVC WATER MAIN
- 6" PVC WATER MAIN
- 4" PVC WATER MAIN
- 2" GALVANIZED STEEL WATER MAIN
- ¾" – 1¼" GALVANIZED STEEL LATERALS
- PARCELS SERVICED BY WATER SYSTEM

REVISIONS

BY	DATE
DESCR	
BY	DATE
DESCR	
BY	DATE
DESCR	

TD&H Engineering
thengineering.com
MONTANA WASHINGTON IDAHO
GREAT FALLS-BOZEMAN-KALISPELL SPOKANE LEWISTON

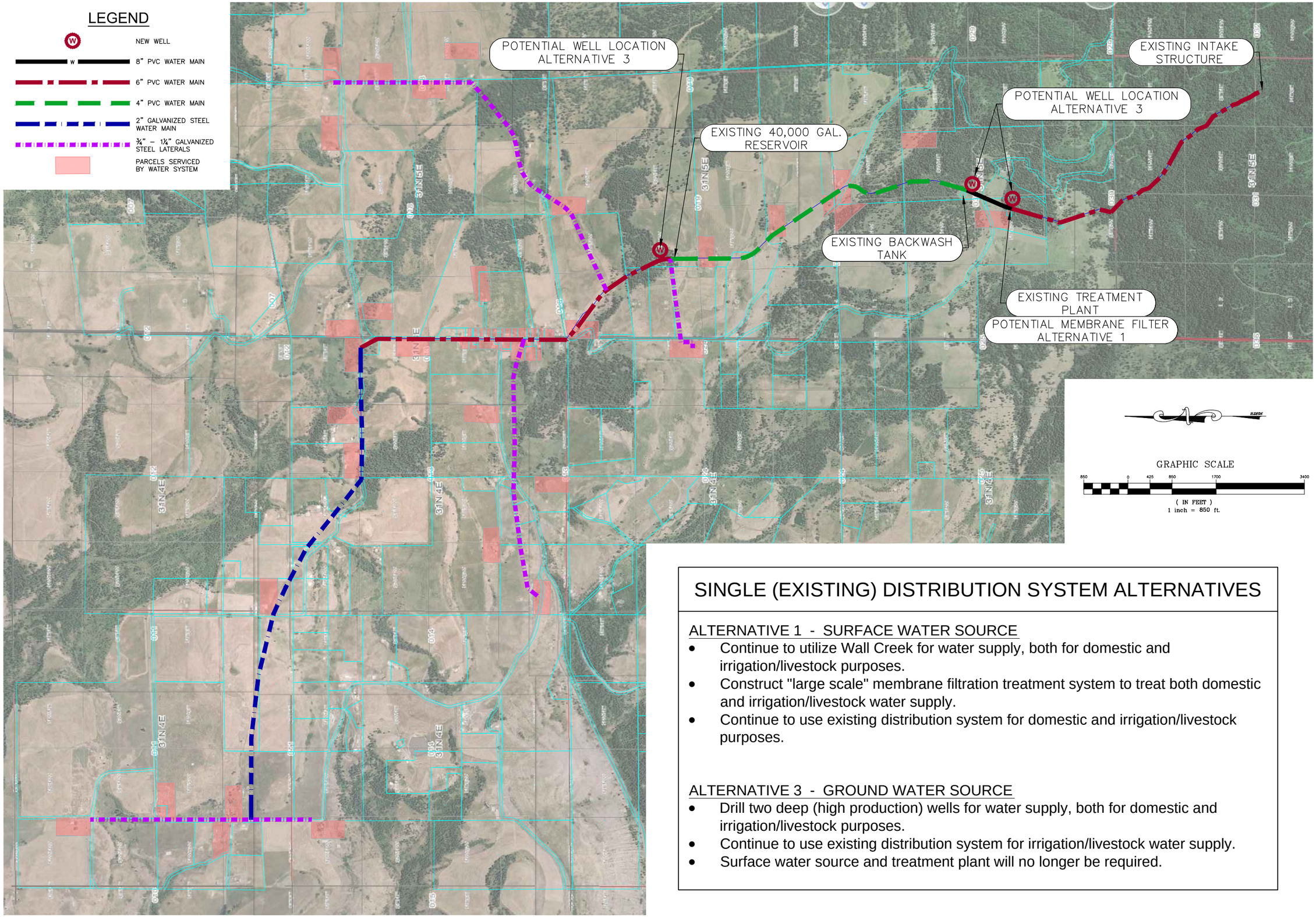
DRAWN BY: HRC
DESIGNED BY:
QUALITY CHECK:
DATE: 4/20/12
JOB NO. L11-017
FIELDBOOK

CLEARWATER WATER DISTRICT
IDAHO COUNTY, IDAHO

EXISTING WATER SYSTEM & USERS

existing system.dwg

FIGURE 2



SINGLE (EXISTING) DISTRIBUTION SYSTEM ALTERNATIVES

ALTERNATIVE 1 - SURFACE WATER SOURCE

- Continue to utilize Wall Creek for water supply, both for domestic and irrigation/livestock purposes.
- Construct "large scale" membrane filtration treatment system to treat both domestic and irrigation/livestock water supply.
- Continue to use existing distribution system for domestic and irrigation/livestock purposes.

ALTERNATIVE 3 - GROUND WATER SOURCE

- Drill two deep (high production) wells for water supply, both for domestic and irrigation/livestock purposes.
- Continue to use existing distribution system for irrigation/livestock water supply.
- Surface water source and treatment plant will no longer be required.

REVISIONS

BY	DESCR	DATE

TD&H Engineering
thengineering.com
MONTANA WASHINGTON IDAHO
GREAT FALLS-BOZEMAN-KALISPELL SPOKANE LEWISTON

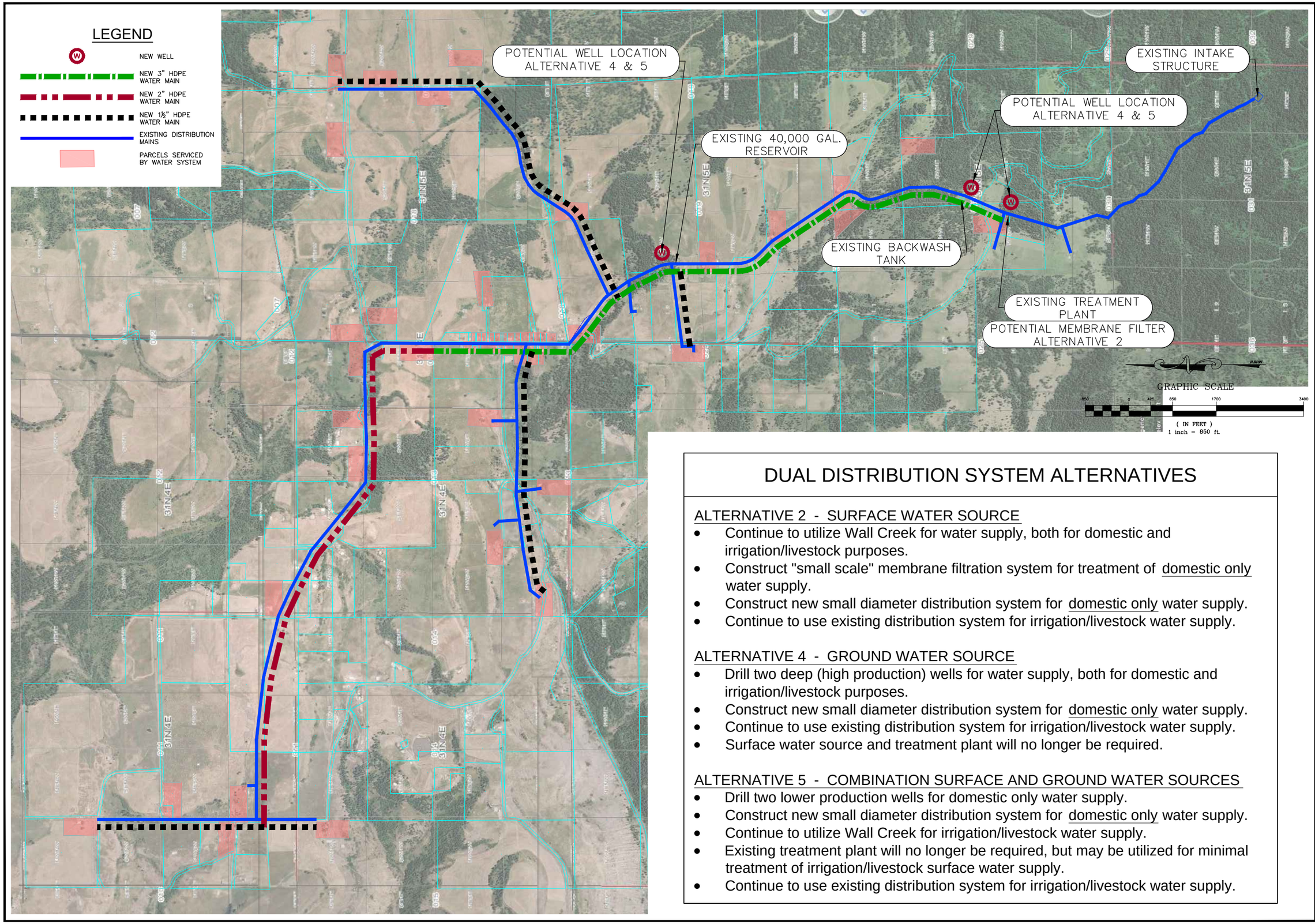
DRAWN BY: HRC
DESIGNED BY:
QUALITY CHECK:
DATE: 04/20/12
JOB NO. L11-017
FIELDBOOK

CLEARWATER WATER DISTRICT
IDAHO COUNTY, IDAHO

SINGLE (EXISTING) DISTRIBUTION SYSTEM ALTERNATIVES

single distribution.dwg

FIGURE 3



DUAL DISTRIBUTION SYSTEM ALTERNATIVES

ALTERNATIVE 2 - SURFACE WATER SOURCE

- Continue to utilize Wall Creek for water supply, both for domestic and irrigation/livestock purposes.
- Construct "small scale" membrane filtration system for treatment of domestic only water supply.
- Construct new small diameter distribution system for domestic only water supply.
- Continue to use existing distribution system for irrigation/livestock water supply.

ALTERNATIVE 4 - GROUND WATER SOURCE

- Drill two deep (high production) wells for water supply, both for domestic and irrigation/livestock purposes.
- Construct new small diameter distribution system for domestic only water supply.
- Continue to use existing distribution system for irrigation/livestock water supply.
- Surface water source and treatment plant will no longer be required.

ALTERNATIVE 5 - COMBINATION SURFACE AND GROUND WATER SOURCES

- Drill two lower production wells for domestic only water supply.
- Construct new small diameter distribution system for domestic only water supply.
- Continue to utilize Wall Creek for irrigation/livestock water supply.
- Existing treatment plant will no longer be required, but may be utilized for minimal treatment of irrigation/livestock surface water supply.
- Continue to use existing distribution system for irrigation/livestock water supply.

REVISIONS

BY	DESCR	DATE

TD&H Engineering
tdhengineering.com
MONTANA WASHINGTON IDAHO
GREAT FALLS-BOZEMAN-KALISPELL SPOKANE LEWISTON

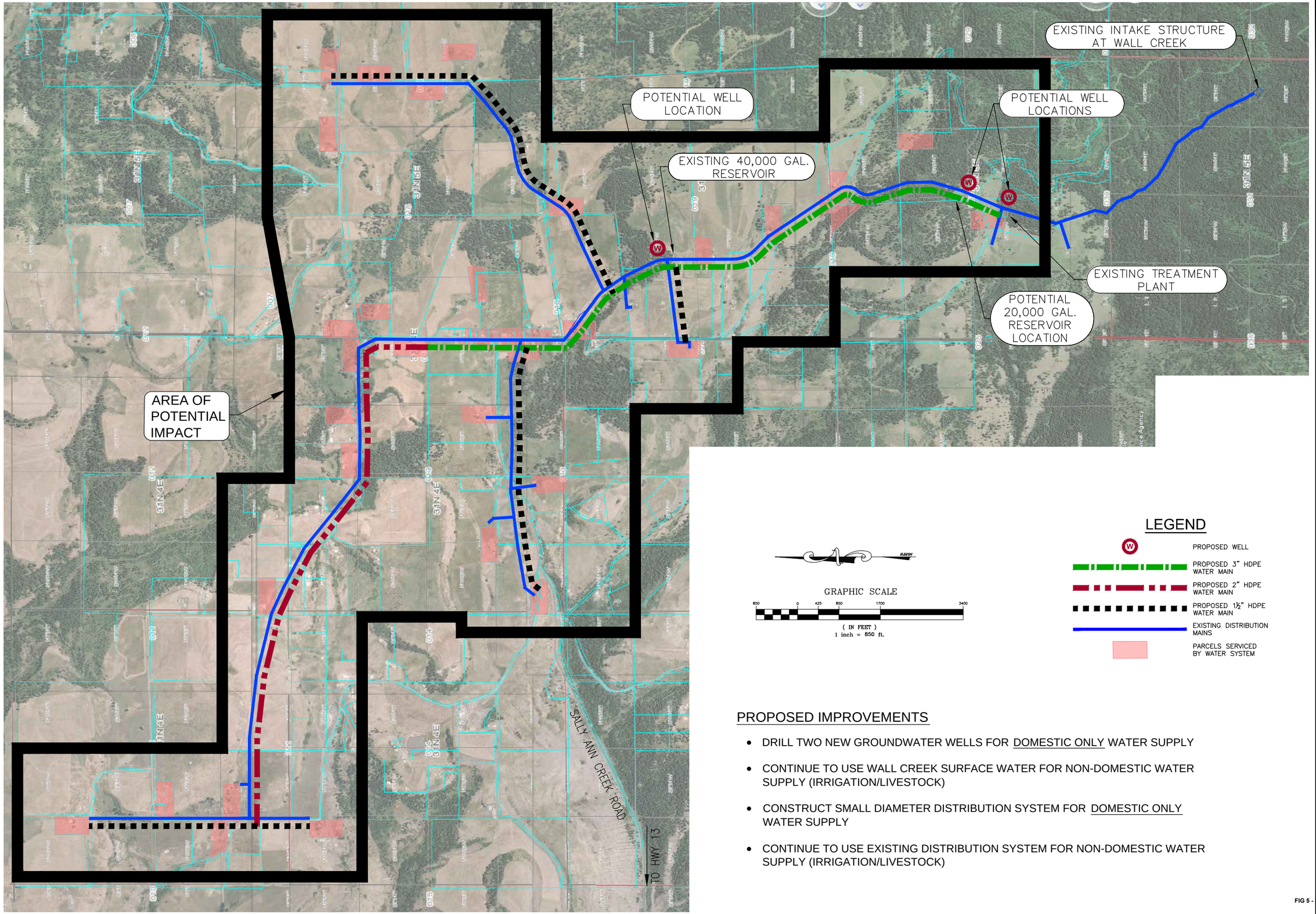
DRAWN BY:	HRC
DESIGNED BY:	
QUALITY CHECK:	
DATE:	4/20/12
JOB NO.	L11-017
FIELDBOOK	

CLEARWATER WATER DISTRICT
IDAHO COUNTY, IDAHO

DUAL DISTRIBUTION SYSTEM ALTERNATIVES

dual distribution.dwg

FIGURE 4



PROPOSED IMPROVEMENTS

- DRILL TWO NEW GROUNDWATER WELLS FOR DOMESTIC ONLY WATER SUPPLY
- CONTINUE TO USE WALL CREEK SURFACE WATER FOR NON-DOMESTIC WATER SUPPLY (IRRIGATION/LIVESTOCK)
- CONSTRUCT SMALL DIAMETER DISTRIBUTION SYSTEM FOR DOMESTIC ONLY WATER SUPPLY
- CONTINUE TO USE EXISTING DISTRIBUTION SYSTEM FOR NON-DOMESTIC WATER SUPPLY (IRRIGATION/LIVESTOCK)

PRELIMINARY

REVISIONS

BY	DATE	DESCR

TD&H Engineering
thengineering.com
MONTANA WASHINGTON IDAHO
GREAT FALLS-BOZEMAN-KALISPELL SPOKANE LEWISTON

DRAWN BY:	HRC
DESIGNED BY:	
QUALITY CHECK:	
DATE:	4/12/20
JOB NO.	L11-017
FIELDBOOK	

CLEARWATER WATER DISTRICT
IDAHO COUNTY, IDAHO

SELECTED ALTERNATIVE
COMBINATION GROUND & SURFACE WATER WITH DUAL DISTRIBUTION

FIG 5 - SELECTED ALTERNATE ALT 5

FIGURE 5

Appendix B – Violations and Deficiencies

LAWRENCE G. WASDEN
Attorney General

CLIVE J. STRONG
Deputy Attorney General
Chief, Natural Resources Division

J. RONALD SUTCLIFFE, Bar # 6236
Deputy Attorney General
Department of Environmental Quality
1410 N. Hilton, 2nd Floor
Boise, Idaho 83706
Telephone: (208)373-0494
Facsimile: (208)373-0481

Attorneys for Plaintiff

RECEIVED
MAY 06 2005
DEQ-LRO

IDAHO COUNTY DISTRICT COURT
FILED
AT 9:30 O'CLOCK A.M.
FEB 03 2005
ROSE E. GEHRING
CLERK OF DISTRICT COURT
Kathy Johnson DEPUTY

IN THE DISTRICT COURT OF THE SECOND JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF IDAHO

STATE OF IDAHO, DEPARTMENT OF ENVIRONMENTAL QUALITY, Plaintiff, v. CLEARWATER WATER DISTRICT, Defendant.	CASE NO. CV-04-35807 STIPULATED JUDGMENT AND ORDER

After reviewing the Stipulation of Parties for Entry of Judgment filed in the above captioned case, this Court finds that the Defendant has violated and continues to violate the Idaho Rules for Drinking Water, IDAPA 58.01.08 et seq. ("Rules").

NOW THEREFORE, IT IS HEREBY ORDERED ADJUDGED AND DECREED:

1. Pursuant to IRCP 55(b)(1), Judgment against Defendant is entered according to law, with no award of costs, expenses or attorney's fees to either side.

2. Pursuant to Idaho Code 39-108, an injunction is issued mandating that Defendant comply with the Rules For Drinking Water, when operating, as that term is defined in IDAPA 58.01.08, the Clearwater Water District's Public Water System and specifically prohibiting Defendant from operating, as that term is defined in IDAPA 58.01.08, the Clearwater Water District's Public Water System unless it is in compliance with Idaho's Rules for Drinking Water as set forth in this Judgment Order.

3. Clearwater shall be deemed in compliance with the Idaho's Rules for Drinking Water, IDAPA 58.01.08 et seq., as long as the terms of this Judgment Order are followed.

4. This Court shall retain jurisdiction to enforce any provision of this Order including, but not limited to, alterations of the time schedule contained herein.

5. Clearwater shall submit to the Department on the time schedule below indicated any plans and specifications necessary to perform the task or where applicable, proof that the task has been completed. In the event Clearwater is unable to complete a submission on the date specified, Clearwater shall, no later than one week (7 days including weekends and holidays) prior to the date a submission is due request of the Department in writing an extension for submission of any required materials. The Department may in its sole

discretion extend any submission date. In the event the Department does not extend a date or does not respond to a request for extension, the submission shall be due on the date indicated below. Any extension of a date contained in this Judgment Order agreed to by the parties shall be so stipulated and submitted to the Court for amendment to the Judgment Order.

6. Any submission required to be filed with the Department shall be filed with a postmark no later than the due date indicated herein . Alternatively, Clearwater may FAX any submission to the Department at 208- 799-3451 as long as the original is mailed to Department within 48 hours of the FAX as shown by postal date stamp.

7. Any submission by Clearwater mailed to the Department shall be addressed to: Department of Environmental Quality, Lewiston Regional Office, 1118 "F" Street, Lewiston, Idaho 83501, attention Kerby Cole or then acting Regional Administrator.

8. Any submission required of the Department shall be mailed to Clearwater at: Almon Manes or his successor on the Clearwater Board, PO Box 314, Stites ID 83552.

9. In order to resolve turbidity problems with the Clearwater PWS Clearwater shall hire an Engineer licensed by the State of Idaho to submit plans to the Department to correct any existing deficiencies at the Clearwater PWS which have caused and continue to cause turbidity exceedence events as defined by IDAPA 58.01.08. at the system. The Engineer shall no later than April 15, 2005 submit to the Department in accordance with Idaho Code section

39-118, plans and specifications to modify the Clearwater PWS to avoid turbidity exceedences.

10. In addition to such plans required by Paragraph 9 above, the Engineer shall submit to the Department a plan with a schedule to cure such deficiencies contained therein to:

a. resolve Clearwater's failures to properly report turbidity exceedances, and issue boil water notices as required by IDAPA 58.01.08.300.06;

b. resolve Clearwater's failures to properly measure disinfection residuals at the distribution entry point as required by IDAPA 58.01.08.300.05.a.ii.4;

c. resolve Clearwater's failures to document chemical disinfection mixing or keep an operations manual available at the water treatment plant as required by IDAPA 58.01.08.552.04.a;

d. resolve Clearwater's inability to provide proper chlorine contact time prior to distributing water to residents as required by IDAPA 58.01.08.552.05.b;

e. resolve Clearwater's failure to implement a cross connection control program as required by IDAPA 58.01.08.550.07;

f. resolve Clearwater's failure to maintain a total coliform rule sampling plan as required by IDAPA 58.01.08.100.01.a, which adopts the Federal Total Coliform Rule, 40 C.F.R. 141.21;

11. After the Department approves the plan submitted by the Engineer purusant to Paragraph 10 above, Clearwater shall adhere to all time limits

contained therein and implement any plan required.

12. After the Department approves the plans and specifications provided by the Engineer in accordance with Paragraph 9 above Clearwater shall:

a. no later than May 1, 2005 hold an election in accordance with Idaho Code § 42-3222 to obtain loans or otherwise take on indebtness if such indebtedness is needed to perform any upgrades or work to the system required by the Engineer.

b. no later than July 1, 2005 commence construction of any upgrades or work to the system required by the Engineer that does not require Clearwater to take on any indebtedness.

c. no later than July 15, 2005 obtain funding for any upgrades or work to the system required by the Engineer .

d. no later than September 1, 2005 start construction of such upgrades or work to the system.

e. no later than December 1, 2005 finish construction of such upgrades or work to the system.

13. In the event an election, as specified in Paragraph 12 above, is held and Clearwater does not obtain approval to take on indebtedness to perform upgrades or work to the system and is consequently unable to perform work as required by the Engineering reports required by Paragraphs 9 and 10 above, the Department may apply to the Court for such other and further relief as may be deemed appropriate by the Court.

14. Clearwater shall employ a licensed operator who meets the licensing criteria for surface water systems as required by IDAPA 58.01.08.300.01.a within three weeks of this Order and provide proof in writing of such employment to the Department.

15. In all other respects Clearwater shall comply with all the Rules for Drinking Water as set forth in IDAPA 58.01.08 et seq.

DATED THIS 3 DAY OF February 2005.

JOHN BRADBURY

Honorable John Bradbury
District Court Judge

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D110628029-001	**Collection Date :**	06-27-2011

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	80.0 UG/L	04-01-2011	06-30-2011
2950	TTHM	null	N		0E-9	63.7 UG/L	04-01-2011	06-30-2011

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D110324019-001	**Collection Date :**	03-23-2011

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	63.4 UG/L	01-01-2011	03-31-2011
2950	TTHM	null	N		0E-9	58.8 UG/L	01-01-2011	03-31-2011

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D101214039-001	**Collection Date :**	12-13-2010

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	85.9 UG/L	10-01-2010	12-31-2010
2950	TTHM	null	N		0E-9	100 UG/L	10-01-2010	12-31-2010

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D100819035-001	**Collection Date :**	08-18-2010

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	107 UG/L	07-01-2010	09-30-2010
2950	TTHM	null	N		0E-9	103 UG/L	07-01-2010	09-30-2010

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D100623062-001	**Collection Date :**	06-22-2010

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	82.1 UG/L	04-01-2010	06-30-2010
2950	TTHM	null	N		0E-9	83.5 UG/L	04-01-2010	06-30-2010

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D100317042-001	**Collection Date :**	03-16-2010

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	93.3 UG/L	01-01-2010	03-31-2010
2950	TTHM	null	N		0E-9	69.9 UG/L	01-01-2010	03-31-2010

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D091218008-001	**Collection Date :**	12-16-2009

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	48.8 UG/L	10-01-2009	12-31-2009
2950	TTHM	null	N		0E-9	45.6 UG/L	10-01-2009	12-31-2009

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D090930051-001	**Collection Date :**	09-29-2009

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	65.4 UG/L	07-01-2009	09-30-2009
2950	TTHM	null	N		0E-9	68.3 UG/L	07-01-2009	09-30-2009

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D090325020-001	**Collection Date :**	03-24-2009

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9	75.7 UG/L	01-01-2009	03-31-2009
2950	TTHM	null	N		0E-9	50.1 UG/L	01-01-2009	03-31-2009

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Analyte List

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D081216030-001	**Collection Date :**	12-15-2008

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9 MG/L	81.5 UG/L	10-01-2008	12-31-2008
2950	TTHM	null	N		0E-9 MG/L	85.9 UG/L	10-01-2008	12-31-2008

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Analyte List

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D080924056-001	**Collection Date :**	09-23-2008

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9 MG/L	73.2 UG/L	07-01-2008	09-30-2008
2950	TTHM	null	N		0E-9 MG/L	64.2 UG/L	07-01-2008	09-30-2008

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Analyte List

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D080627027-001	**Collection Date :**	06-26-2008

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2950	TTHM	null	N		0E-9 MG/L	73.1 UG/L	04-01-2008	06-30-2008

Total Number of Records Fetched = 1

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Analyte List

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D080325028-001	**Collection Date :**	03-24-2008

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9 MG/L	52.9 UG/L	01-01-2008	03-31-2008
2950	TTHM	null	N		0E-9 MG/L	60.7 UG/L	01-01-2008	03-31-2008

Total Number of Records Fetched = 2

Drinking Water Branch

Non-Coliform Sample Results

Return Links

Non-Coliform Samples

Analyte List

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974
Lab Sample No. :	D071003008-001	**Collection Date :**	10-01-2007

Analyte Code	Analyte Name	Method Code	Less than Indicator	Level Type	Reporting Level	Concentration level	Monitoring Period Begin Date	Monitoring Period End Date
2456	TOTAL HALOACETIC ACIDS (HAA5)	null	N		0E-9 MG/L	71.7 UG/L	10-01-2007	12-31-2007
2950	TTHM	null	N		0E-9 MG/L	60.1 UG/L	10-01-2007	12-31-2007

Total Number of Records Fetched = 2

Drinking Water Branch

Violations

Return Links

Water System Detail

Water Systems

Water System Search

County Map

Glossary

Water System No. :	ID2250011	**Federal Type :**	C
Water System Name :	CLEARWATER WATER DIST	**State Type :**	C
Principal County Served :	IDAHO	**Primary Source :**	SW
Status :	A	**Activity Date :**	01-01-1974

**Please note: some of these violations may have been resolved and/or returned to compliance. Please click on the violation to view more information on its compliance status.

Group Violations

Violation No.	Status	Violation Type	Violation Name	Analyte Group Code	Analyte Group Name	Water System Facility State Asgn ID	Water System Facility Name
2009-6529	V	27	MONITORING, ROUTINE (DBP), MAJOR	ZDBP	DBP - TTHM AND HAA5	T2250011DS1	DISTRIBUTION SYSTEM
2009-5952	V	03	MONITORING, ROUTINE MAJOR	ZARS	ARSENIC (1005)	E0005483T	WALL CREEK TREATMENT
2007-4889	V	27	MONITORING, ROUTINE (DBP), MAJOR	ZDBP	DBP - TTHM AND HAA5	T2250011DS1	DISTRIBUTION SYSTEM
2005-3806	V	03	MONITORING, ROUTINE MAJOR	VOCS	VOCS - GROUP	E0005483	WALL CREEK
2005-4130	V	03	MONITORING, ROUTINE MAJOR	ZNO3	NITRATE	E0005483	WALL CREEK
2005-4250	V	03	MONITORING, ROUTINE MAJOR	ZARS	ARSENIC (1005)	E0005483	WALL CREEK
2002-1183	V	03	MONITORING, ROUTINE MAJOR	ZNO3	NITRATE	E0005483	WALL CREEK

Total Number of Records Fetched = 7

Individual Violations

Violation No.	Status	Violation Type	Violation Name	Analyte Code	Analyte Name	Water System Facility State Asgn ID	Water System Facility Name
2012-32408	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2011-32398	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32399	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32400	V	76	PUBLIC NOTICE RULE NOT LINKED VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32401	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-			MONITORING, ROUTINE				WALL CREEK

32402	V	38	(IESWTR/LT1), MINOR	0100	TURBIDITY	E0005483T	TREATMENT
2011-32403	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32404	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32405	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32406	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32407	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32396	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2011-32397	V	02	MCL, AVERAGE	2950	TTHM	T2250011DS1	DISTRIBUTION SYSTEM
2011-32387	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32388	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32389	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32390	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32391	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32392	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32393	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32394	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32395	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32385	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2011-32386	V	02	MCL, AVERAGE	2950	TTHM	T2250011DS1	DISTRIBUTION SYSTEM
2011-32374	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2011-32378	V	52	FOLLOW-UP OR ROUTINE TAP M/R (LCR)	5000	LEAD & COPPER RULE	T2250011DS1	DISTRIBUTION SYSTEM

2011-32379	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32380	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32381	V	38	MONITORING, ROUTINE (IESWTR/LT1), MINOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32382	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32383	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32384	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32373	V	02	MCL, AVERAGE	2950	TTHM	T2250011DS1	DISTRIBUTION SYSTEM
2011-32371	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32372	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2011-32364	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2011-32365	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2010-32362	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2010-32363	V	75	PUBLIC NOTICE RULE LINKED TO VIOLATION	7500	PUBLIC NOTICE	null	null
2010-32355	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2010-32356	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32357	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32358	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32359	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32360	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32361	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-			MONTHLY COMB.				WALL CREEK

32347	V	41	FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	TREATMENT
2010-32348	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32349	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32350	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32351	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32352	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32353	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32354	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32341	V	23	MONITORING (TCR), ROUTINE MAJOR	3100	COLIFORM (TCR)	null	null
2010-32342	V	36	MONITORING, RTN/RPT MAJOR (SWTR-FILTER)	0999	CHLORINE	T2250011DS1	DISTRIBUTION SYSTEM
2010-32344	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32336	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32337	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32338	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32339	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2010-32340	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32327	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32328	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
			SINGLE COMB.				

2009-32329	V	41	FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32330	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32331	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32332	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32333	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32334	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32335	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32322	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	null	null
2009-32323	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	null	null
2009-32324	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	null	null
2009-32313	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32314	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32315	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32317	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32318	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32321	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32310	V	SS	SPECIAL SAMPLE	0800	LT2ESWTR	null	null
2009-32209	V	SS	SPECIAL SAMPLE	0800	LT2ESWTR	null	null
2009-32309	V	SS	SPECIAL SAMPLE	0800	LT2ESWTR	null	null
2009-31609	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM

2009-31709	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31809	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31909	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-32009	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31409	V	SS	SPECIAL SAMPLE	0800	LT2ESWTR	null	null
2009-31509	V	SS	SPECIAL SAMPLE	0800	LT2ESWTR	null	null
2009-30809	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-30909	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31009	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31109	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31209	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2009-31309	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29908	V	27	MONITORING, ROUTINE (DBP), MAJOR	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2008-30008	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30108	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30208	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30308	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30408	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30508	V	38	MONITORING, ROUTINE (IESWTR/LT1),	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT

			MAJOR				
2008-30608	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-30708	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29408	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29508	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29608	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29708	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29808	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28608	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28708	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28808	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28908	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-29008	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28408	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2008-28508	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-27407	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-27507	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-27707	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-	V	41	SINGLE COMB. FILTER	0100	TURBIDITY	E0005483T	WALL CREEK

27807			EFFLUENT (SWTR)				TREATMENT
2007-28007	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-28207	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	null	null
2007-28307	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	null	null
2007-26707	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26807	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26907	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-27007	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-27107	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26207	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26307	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26407	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26507	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-26607	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-25707	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483	WALL CREEK
2007-25807	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483	WALL CREEK
2007-24907	V	02	MCL, AVERAGE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2007-25407	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2007-25507	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-	V	22	MCL (TCR),	3100	COLIFORM (TCR)	null	null

24806			MONTHLY				
2006-24206	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24306	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24406	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24506	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24606	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24706	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-24006	V	38	MONITORING, ROUTINE (IESWTR/LT1), MAJOR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-23406	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-23506	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-22906	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-23006	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-23106	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2006-23306	V	01	MCL, SINGLE SAMPLE	2950	TTHM	T2250011DS1	DISTRIBUTION SYSTEM
2005-22205	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-22305	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-22405	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-22505	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-22605	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-	V	41	SINGLE COMB. FILTER	0100	TURBIDITY	E0005483T	WALL CREEK

22705			EFFLUENT (SWTR)				TREATMENT
2005-22105	V	22	MCL (TCR), MONTHLY	3100	COLIFORM (TCR)	null	null
2005-21605	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-21705	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-21805	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-21905	V	41	MONTHLY COMB. FILTER EFFLUENT (SWTR	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-22005	V	41	SINGLE COMB. FILTER EFFLUENT (SWTR)	0100	TURBIDITY	E0005483T	WALL CREEK TREATMENT
2005-21305	V	27	MONITORING, ROUTINE (DBP), MAJOR	0999	CHLORINE	T2250011DS1	DISTRIBUTION SYSTEM
2005-21405	V	27	MONITORING, ROUTINE (DBP), MAJOR	0999	CHLORINE	T2250011DS1	DISTRIBUTION SYSTEM
2005-21505	V	27	MONITORING, ROUTINE (DBP), MAJOR	0999	CHLORINE	T2250011DS1	DISTRIBUTION SYSTEM
2005-18705	V	52	FOLLOW-UP OR ROUTINE TAP M/R (LCR)	5000	LEAD & COPPER RULE	null	null
2005-21105	V	01	MCL, SINGLE SAMPLE	2456	TOTAL HALOACETIC ACIDS (HAA5)	T2250011DS1	DISTRIBUTION SYSTEM
2005-21205	V	01	MCL, SINGLE SAMPLE	2950	TTHM	T2250011DS1	DISTRIBUTION SYSTEM
2000-700	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-800	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-900	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1000	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1100	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1200	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1300	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1400	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
2000-1500	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null

1999-2599	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-2699	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-2799	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-2899	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-2999	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3099	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3199	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3299	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3399	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3499	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3599	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1999-3699	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-498	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-598	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-698	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-1698	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-1798	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-1898	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-1998	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-2098	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-2198	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-			RES DISINFECT				

2298	V	41	CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-2398	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1998-2498	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5397	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5497	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5597	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5697	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5797	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5897	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-5997	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-6097	V	24	MONITORING (TCR), ROUTINE MINOR	3100	COLIFORM (TCR)	null	null
1997-6197	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-6297	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-6397	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-6497	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1997-6597	V	24	MONITORING (TCR), ROUTINE MINOR	3100	COLIFORM (TCR)	null	null
1997-6697	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-8696	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-8796	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-8896	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-8996	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9096	V	41	RES DISINFECT CONCENTRATION	0200	SWTR	null	null

			(SWTR)				
1996-9196	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9296	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9396	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9496	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9596	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9896	V	03	MONITORING, ROUTINE MAJOR	2990	BENZENE	E0005483	WALL CREEK
1996-9996	V	03	MONITORING, ROUTINE MAJOR	2982	CARBON TETRACHLORIDE	E0005483	WALL CREEK
1996-10096	V	03	MONITORING, ROUTINE MAJOR	2977	1,1-DICHLOROETHYLENE	E0005483	WALL CREEK
1996-10196	V	03	MONITORING, ROUTINE MAJOR	2380	CIS-1,2-DICHLOROETHYLENE	E0005483	WALL CREEK
1996-10296	V	03	MONITORING, ROUTINE MAJOR	2979	TRANS-1,2-DICHLOROETHYLENE	E0005483	WALL CREEK
1996-10396	V	03	MONITORING, ROUTINE MAJOR	2980	1,2-DICHLOROETHANE	E0005483	WALL CREEK
1996-10496	V	03	MONITORING, ROUTINE MAJOR	2983	1,2-DICHLOROPROPANE	E0005483	WALL CREEK
1996-10596	V	03	MONITORING, ROUTINE MAJOR	2968	O-DICHLOROBENZENE	E0005483	WALL CREEK
1996-10696	V	03	MONITORING, ROUTINE MAJOR	2969	P-DICHLOROBENZENE	E0005483	WALL CREEK
1996-10796	V	03	MONITORING, ROUTINE MAJOR	2992	ETHYLBENZENE	E0005483	WALL CREEK
1996-10896	V	03	MONITORING, ROUTINE MAJOR	2989	CHLOROBENZENE	E0005483	WALL CREEK
1996-10996	V	03	MONITORING, ROUTINE MAJOR	2996	STYRENE	E0005483	WALL CREEK
1996-11096	V	03	MONITORING, ROUTINE MAJOR	2987	TETRACHLOROETHYLENE	E0005483	WALL CREEK
1996-11196	V	03	MONITORING, ROUTINE MAJOR	2981	1,1,1-TRICHLOROETHANE	E0005483	WALL CREEK
1996-11296	V	03	MONITORING, ROUTINE MAJOR	2984	TRICHLOROETHYLENE	E0005483	WALL CREEK
1996-11396	V	03	MONITORING, ROUTINE MAJOR	2991	TOLUENE	E0005483	WALL CREEK
1996-11496	V	03	MONITORING, ROUTINE MAJOR	2955	XYLENES, TOTAL	E0005483	WALL CREEK
1996-9696	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1996-9796	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-3895	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-3995	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-	V	41	RES DISINFECT CONCENTRATION	0200	SWTR	null	null

4095			(SWTR)				
1995-4195	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4295	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4395	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4495	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4595	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4695	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4795	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4895	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1995-4995	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-6794	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-6894	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-6994	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7094	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7194	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7294	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7394	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7494	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7594	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7694	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7794	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1994-7894	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null

1993-5093	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1993-5193	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1993-5293	V	41	RES DISINFECT CONCENTRATION (SWTR)	0200	SWTR	null	null
1987-13587	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1987-18387	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1986-15386	V	02	MCL, AVERAGE	0100	TURBIDITY	null	null
1986-15286	V	02	MCL, AVERAGE	0100	TURBIDITY	null	null
1986-14886	V	02	MCL, AVERAGE	0100	TURBIDITY	null	null
1986-14786	V	02	MCL, AVERAGE	0100	TURBIDITY	null	null
1986-14686	V	02	MCL, AVERAGE	0100	TURBIDITY	null	null
1985-15585	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1985-13885	V	03	MONITORING, ROUTINE MAJOR	0100	TURBIDITY	null	null
1985-13785	V	03	MONITORING, ROUTINE MAJOR	0100	TURBIDITY	null	null
1985-13685	V	03	MONITORING, ROUTINE MAJOR	0100	TURBIDITY	null	null
1984-18084	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-18284	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1984-17984	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-18184	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1984-17884	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-17484	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-17784	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1984-17384	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-17684	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1984-17284	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-17584	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1984-17084	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-17184	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1984-16984	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-16884	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-16784	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-			MONITORING,				

16484	V	03	ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1984-16684	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-16584	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1984-16384	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1983-16283	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-15783	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1983-16183	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-15483	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1983-16083	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-15083	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1983-14983	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1983-15183	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1983-14383	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-14283	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-14583	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1983-14183	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-14483	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1983-14083	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1983-3783	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1983-13983	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1982-15882	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1982-15682	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1982-15982	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1982-282	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1982-8082	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1982-382	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1981-181	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1981-11781	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1981-7981	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1981-11681	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1981-11581	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1981-8581	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1981-	V	03	MONITORING,	3000	COLIFORM (PRE-TCR)	null	null

8381			ROUTINE MAJOR				
1981-8281	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1980-12980	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-13480	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1980-12880	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-13380	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1980-12780	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-8480	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1980-12680	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-12580	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-12480	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-12380	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-8180	V	03	MONITORING, ROUTINE MAJOR	3000	COLIFORM (PRE-TCR)	null	null
1980-12280	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-13280	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1980-12180	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-12080	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-13180	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null
1980-11980	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-11880	V	03	MONITORING, ROUTINE MINOR	0100	TURBIDITY	null	null
1980-13080	V	02	MCL, AVERAGE	3000	COLIFORM (PRE-TCR)	null	null

Total Number of Records Fetched = 354

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1118 F Street • Lewiston, Idaho 83501 • (208) 799-4370

C.L. "Butch" Otter, Governor
Toni Hardesty, Director

October 12, 2011

Lyle Smith, Chairman
Clearwater Water District
P.O. Box 314
Stites Idaho 83552

Subject: Enhanced Sanitary Survey Conducted on September 19, 2011, Clearwater Water District, ID2250011

Dear Mr. Smith

A copy of the Enhanced Sanitary Survey Report and the Photo Log for Clearwater Water District public drinking water system are enclosed for your records. This report provides a list of the significant deficiencies, deficiencies and recommended improvements for your system. Per *Idaho Rules for Public Drinking Water Systems* (IDAPA 58.01.08) the listed significant deficiencies require consultation, corrective actions and verification of these actions according to the following timeline:

- By **November 12, 2011** the Clearwater Water District must submit a corrective action plan (CAP) for addressing the deficiencies noted in the Enhanced Sanitary Survey Report. For specific corrective actions that will take longer than six months to complete, an alternative compliance schedule must be approved by DEQ. Please contact DEQ, Lewiston Regional Office for help in developing your CAP and alternative compliance schedule;
- By **April 10, 2012**, the Clearwater Water District must be in compliance with the DEQ-approved CAP;
- By **May 10, 2012**, the Clearwater Water District shall notify DEQ in writing that the CAP has been completed. Supporting evidence such as photographs must also be submitted at that time;
- Be in compliance with DEQ-approved alternative compliance schedule and notify DEQ within 30 days of completion of the alternative compliance schedule.

Please contact me regarding the significant deficiencies and deficiencies identified in the Survey Report for consultation on the Clearwater Water District corrective action plan. As a reminder, any major modifications to existing public drinking water systems require and engineering report be submitted to the DEQ for review and approval prior to or concurrent with the submittal of plans and specifications, as required by IDAPA 58.01.08.503 & .504.

Thank you for your time and assistance in the completion of this survey. If you have any questions or comments please do not hesitate to contact me by phone at (208) 799-4370 or by email at jerry.shaffer@deq.idaho.gov.

Sincerely,

Jerry W. Shaffer, P.E.
Drinking Water Analyst

Enclosure

Drinking Water System Sanitary Survey Report

SYSTEM:	Clearwater Water District	SURVEY DATE:	9/19/2011
PWS No.:	ID2250011	INSPECTED BY:	Jerry W. Shaffer, P.E. Staff Engineer

This report summarizes the findings of the sanitary survey inspection of the Clearwater Water District public drinking water system. Following this summary, a list of significant deficiencies, deficiencies and recommended improvements for the referenced water system are provided.

SURVEY SUMMARY

Clearwater Water District is a community water system located in Idaho County approximately 13 miles northeast of Grangeville and serves 100 residents (estimated) through 48 connections. It is a rural community that formed an association in 1948 and constructed the water system in 1949 with a Farmers Home Administration loan in order to provide for the community's agricultural needs in addition to their domestic needs. The original system consisted of a roughing sand filter on Wall Creek, a distribution system to the homes in the system (18,050 feet of 4" steel transmission line and 26,000 feet of steel distribution line), two 1,500 gallons buried concrete storage tanks near the first connection, and a 40,000 gallon partially buried concrete reinforced storage reservoir on Lester Gunther's property.

In 1983, the community constructed a water treatment plant, consisting of two pressure filters (100 gpm design) and hypochlorite disinfection, transmission and distribution line improvements (780 feet of 8", 10,220 feet of 6" and, 120 feet of 4" line), an 8,000 gallon partially buried concrete chlorine contact/storage tank located approximately three hundred yards northwest of the treatment building, and a filter backwash settling basin. The design and construction engineering firm was JUB Engineers.

In 1985, the Clearwater Water District was unable to meet the requirements of the Surface Water Treatment Rule and entered into a Voluntary Consent Order with the State of Idaho that was signed on September 28, 1998. This Voluntary Consent Order was mutually extended by both parties on November 21, 1001. The system was disapproved by the State of Idaho on October 13, 2003 and a Stipulated Judgment and Order was issued by the court against Clearwater Water District on February 3, 2005. A Second Stipulation to Enter Amended Judgment and Order was issued June 3, 2008

In 2008, the Clearwater Water District received approval to conduct pilot testing at the water treatment plant. The pilot test was conducted but showed that the system was unable to meet the District's needs.

The following significant deficiencies from the May 1, 2006 sanitary survey have not been addressed:

- Provisions are not made for the proper testing and disposal of water treatment plant sludge, as required by IDAPA 58.01.08.550.01, which incorporates by reference the Recommended Standards for Water Works 9.0.
- The treatment plant is not accessible by road in the winter months, as required by IDAPA 58.01.08.008.01.a.
- The Operations Plan for the water treatment plant has not been approved by the Department, as required by IDAPA 58.01.08.552.04.a.
- All dead end water mains are not equipped with a means to flush, as required by IDAPA 58.01.08.550.06j. and IDAPA 58.01.08.550.01 which incorporates by reference the Recommended Standards for Water Works 8.2.4.b.
- The 8,000 gallon Storage Tank hatch does not prevent access by insects and other potential contamination sources, as required by IDAPA 58.01.08.550.08.h.
- The 8,000 gallons storage tank and the 40,000 gallon storage tank do not have year-round access, as required by IDAPA 58.01.08.008.b.

Source

The Clearwater Water District's water source is a single surface water stream, Wall Creek (E0005483). The intake is located approximately three miles southeast of town at N45.98206° W115.87299°. The intake structure is a concrete basin that was once used as sand roughing filter. The system has put baffles in the concrete structure but it does not provide much settling of solids. Clearwater Water District has a water right for 100 gpm. There is an access road to the intake but the intake is not accessible at all times, especially in the winter. A fence surrounds the intake site and there is a locked gate. This last spring, the intake structure overflowed and washed out the access road outside the gate. The District did repair the road, as well as several other sections of the access road that had washed out.

Wall Creek water characteristics are as follows:

- Temperature from less than 2.1° C to greater than 14.8° C
- pH from less than 6.0 to above 8.2
- Turbidity from less than 0.16 NTU to greater than 14.8 NTU
- Water samples show concentrations of Fluoride (0.6 mg/L), Choride (1.78 mg/L), Barium (0.019 mg/L) Sulfate (1.26 mg/L) and Sodium (~5.0 mg/L). Other inorganics were non-detectable

Treatment

The Clearwater Water District treats the Wall Creek surface water source by filtration and disinfection at the water treatment plant located at N45.99572° W115.88149°. This dual barrier is required by the Surface Water Treatment Rule. The District uses two vertical dual media pressure filters (sand and anthracite) acting in series to provide the filtration. The filters were manufactured by the Pacific Tank and Manufacturing Corporation and installed in 1983. The filters treat approximately 100,000 gpd. During the summer the District also uses two additional unapproved pre-filters that were installed in 2007 in conjunction with the existing pressure filters. These pre-filters are not used during the winter months. Finished water turbidities range from 0.02 NTU to greater than 5.39 NTU. At times, the finished water turbidity exceeds the raw water turbidity. The filtration system cannot meet the turbidity requirements of the Surface

Water Treatment Rule and has not demonstrated compliance with the removal requirements of the Surface Water Treatment Rule, Long-Term 1 Enhanced Surface Water Treatment Rule and the Long-Term 2 Enhanced Surface Water Treatment Rule. Filter backwash water goes to an unlined pond to the west of the plant.

The District chlorinates (disinfects) its surface water after filtration using sodium hypochlorite from Univar out of Redmond, Washington. This chemical is NSF certified. Contact time is provided by the buried water main to the 8,000 gallon partially buried chlorine contact/storage reservoir and the reservoir itself. There is no backup power at the water treatment plant so when the power goes out, the plant can filter and deliver water to the water storage reservoirs and distribution system without disinfecting it. All services between the water treatment plant and the 8,000 gallon tank have been removed or relocated to after the 8,000 gallon tank.

Finished Water Storage

The Clearwater Water District has two partially–buried concrete water storage reservoirs, an 8,000 gallon reservoir and a 40,000 gallon reservoir.

The 8,000 gallon reservoir was constructed as part of the 1983 water treatment plant project. It holds less than an hour of summer demand. In addition to providing storage, it also acts as a chlorine contact basin and backwash holding reservoir. It is located at N45.99856° W115.88002°, about 300 yards northeast of the water treatment plant. The reservoir is divided into two equal-sized tanks by a concrete wall that extends from the floor upwards, and from wall to wall. About 60% up the dividing wall is a 2" hole that allows water to pass from the south to the north chambers, but ensures that at least 60% of the volume of the south chamber is available for backwash (~2,400 gallons). Once the south chamber of the reservoir has 2,400 gallons of water, the water will start spilling over to the north chamber through the 2" hole. When the south chamber is filled with 4,000 gallons, water overtops the dividing wall and flows into the north chamber through the 2" hole and over the top of the wall. An overflow pipe out the north wall of the reservoir prevents the tank from overfilling. This overflow is not downturned and does not discharge over a splash plate or similar structure, but it is screened. A drain (screened) allows the drainage of the north chamber of the reservoir and the south chamber can be drained back into the water treatment plant. The access hatch is raised, overlapping and locked, but the inside face is severely rusted and does not have a gasketed seal. The top of the reservoir and the access hatch are easily accessible. The vent extends out of the top of the tank and is downward turned and screened. The reservoir is located in a fenced pasture in a group of pine trees and there is no road to the reservoir. The operator draws daily water samples from the reservoir to determine compliance with CT requirements. The reservoir was last inspected and cleaned in 2009. The water level is measured in this reservoir using mechanical floats. This storage reservoir cannot be isolated from the system.

The 40,000 gallon reservoir is located at N46.01347° W115.88536°, on a hill north of Lester Gunther's home. This reservoir holds less than half a day of summer demand. It was constructed when the original system was built in 1949. It is located on a wooded section of a hill surrounded by hay fields and woods. There is no access road to the reservoir. A Cla-valve regulates the system pressure above the storage reservoir. The District went into the reservoir in 2009 to seal any cracks in the concrete walls and clean the interior. There is an overflow on the

north end of the reservoir that does not discharge over a splash plate but rather surfaces about 100 feet north of the reservoir parallel to the ground surface. The opening is screened. There is a drain line that surfaces less than fifty feet to the northwest of the tank and that parallels the ground and is screened. The reservoir roof is flat and sealed. The access hatch is located on the southeast corner of the reservoir and about three feet high. The hatch is overlapping, locked and sealed. A screened vent is located on the east side of the access structure about half way up. There is no means to measure the water level in the reservoir. The Cla-valve prevents the overfilling of the reservoir and when closed, backs up the water to the 8,000 gallon tank which controls the operation of the water treatment plant. This storage reservoir cannot be isolated from the system.

The District did not indicate if the original two 1,500 gallons buried concrete storage tanks had been properly abandoned. Mr. Smith only remembers one of these tanks. He believes that this is where the chlorine was originally injected. The 1983 upgrade bypassed these tanks with a new transmission line.

Distribution

The distribution system was partially reconstructed in 1983 with the replacement of 18,050 feet of 4" and 6" water main out of the original 26,000 feet. All pipe is galvanized steel except for a section of PVC pipe that extends from the 40,000 gallon storage reservoir to the town. The distribution system has 48 unmetered connections serving an estimated 100 people. There are two fire hydrants on the distribution system, both on 6" water mains. The system has lost pressure completely due to line breaks/repairs and the system gives verbal notice by phone to all the customers when this happens. Leaks account for greater than 15% of demand. There is no cross connection control program and the District would like assistance in starting one up.

Pumping, Pumps and Motors

The Clearwater Water District is entirely gravity fed and has no pumps except for the chemical feed pump for the sodium hypochlorite.

Monitoring, Reporting and Data Verification

The Clearwater Water District is current on all monitoring and submits monthly disinfection and turbidity reports. However, the District is past due for reporting public notifications. Proof of public notifications was due to be submitted to DEQ in July and Early October. All water users are required to be notified on a quarterly basis of: 1) treatment technique violations and to boil their water, and 2) that water being served to them exceeds disinfection byproduct maximum contaminant level(s) (MCL). Public notification is required to be provided to District residents as long as finished water turbidities exceed 0.30 NTU's in greater than 5(%) percent of monthly measurements, and as long as the disinfection byproduct MCLs are exceeded.

System Management Operation and Operator

The Clearwater Water District (P.O. Box 314, Stites, Idaho 83552) is governed by a five member board that meets the first Wednesday of the month, with Lyle Smith (208-926-4278 /lands39@gmail.com) acting as chairman. The Responsible Charge Operator is Richard J. Schaack (208-926-7783/schaack@wildblue.net) and he is licensed as DTW1-13423 and DWDVSWS-11431. There is no licensed back-up operator though Richard Schaack's son,

Randy Schaack is in the process of getting his license. The District uses the City of Kamiah as their unofficial backup operator. This relationship needs to be formalized. The system does not have a routine maintenance schedule nor does it have a current operations and maintenance manual.

The drinking water system is presently disapproved by the State of Idaho due to its inability to meet removal requirements and turbidity limits. The system is under a Second Stipulation to Enter Amended Judgment and Order (June 3, 2008). The District is working with its engineers and grant writer to resolve its disapproval status.

SIGNIFICANT DEFICIENCIES

Storage:

1. The manhole access for the 8,000 gallons storage tank does not have a cover that is water tight and the cover is not hinged on one side, as required by IDAPA 58.01.08.544.07.c.
2. The 8,000 gallon storage tank has an overflow that does not have a vertical section of pipe at least two (2) pipe diameters in length, as required by IDAPA 58.01.08.554.06.b.

Distribution:

1. 15% or more of the water is unaccounted for, which is not in accordance with IDAPA 58.01.08.542.10.
2. All dead end water mains are not equipped with a means to flush, as required by IDAPA 58.01.08.42.09.
3. All dead end water mains are not flushed at least semiannually, as required by IDAPA 58.01.08.542.09.
4. There is no cross connection control program for the public water system, as required by IDAPA 58.01.08.552.06.

Managerial:

1. No Substitute Responsible Charge Operator (OP): When the Responsible Charge Operator (DO) was not available, a substitute Responsible Charge Operator was not designated to take over the PWS responsibilities, as required by IDAPA 58.01.08.554.03.
2. Failure to provide public notification and/or report proof of public notification to the Idaho Department of Environmental Quality. IDAPA 58.01

Treatment Application:

1. Modifications: The system has not received plan and specification approval (for the addition of the pre-filters) pursuant to IDAPA 58.01.08.504.
2. Cross-connection control is not provided on the service water lines that discharge to the solution tanks, as required by IDAPA 58.01.08.531.02.f.i.
3. All threaded non-sample taps are not equipped with an appropriate backflow prevention device, as required by IDAPA 58.01.08.541.01.n.
4. Adequate ventilation is not provided in the treatment building for the dissipation of excess heat and moisture from the equipment, as required by IDAPA 58.01.08.541.01.e. At the time of the inspection there was evidence of corrosion of metallic components from excessive heat and/or moisture

Disinfection:

1. There is no auxiliary power on-site for the chlorine chemical pump, as required by IDAPA 58.01.08.501.07.

DEFICIENCIES

General Information:

1. All previously required Significant Deficiencies and Deficiencies identified in the last Sanitary Survey have not been addressed, as required by IDAPA 58.01.08.008.02 or IDAPA 58.01.08.302.03 and IDAP A 58.01.08.302.04.

Storage:

1. For the 8,000 gallon storage reservoir, one or more of the overflows are not brought down to an elevation between 12 and 24 inches above the ground surface, as required by IDAPA 58.01.08.544.06.
2. For the 8,000 gallon storage reservoir, the overflow does not discharge over a drainage inlet structure or splash plate, as required by IDAPA 58.01.08.544.06.
3. For the 40,000 gallon storage reservoir, one or more of the overflows are not brought down to an elevation between 12 and 24 inches above the ground surface, as required by IDAPA 58.01.08.544.06.
4. The 40,000 gallon storage reservoir, which provides pressure directly to the distribution system, is not designed so that it can be isolated from the distribution system without causing a loss of pressure in the distribution system, as required by IDAPA 58.01.08.546.02.
5. The vent for the 40,000 gallon storage reservoir does not open downward, as required by IDAPA 58.01.08.544.08.d.

Managerial:

1. An operation and maintenance manual is not provided for the PWS or the operation and maintenance manual is incomplete, not having daily operating instructions and/or operator safety procedures and/or location of valves and other key system features and/or parts list and parts order form and/or information for contacting the water system operator, as required by IDAPA 58.01.08.501.12.

RECOMMENDATIONS

Storage:

1. Storage Tank Water Level Measurement – At the time of the inspection the Public Drinking Water System (PWS) does not have a means to measure the water level in the storage unit (40,000 gallon reservoir). DEQ recommends the PWS provide the operator with the ability to easily monitor and measure the water level in the storage unit.
2. Date Last Inspection (2009) – DEQ recommends that all storage tanks be inspected for integrity and silt build up annually.

Distribution:

1. DEQ recommends that all valves be exercised at least annually.
2. DEQ recommends the Public Water System set up a water conservation program.
3. DEQ recommends that all main lines be flushed annually.
4. DEQ recommends the certified operator obtain training in cross connection control

Managerial:

1. DEQ recommends that a routine maintenance schedule be established and adhered to.

Significant Deficiency & Deficiency Corrective Action Plan for Clearwater Water District, ID2250011

Table 1. Corrective Action Plan

	Significant Deficiency	Corrective Action	Planned Completion Date	Actual Completion Date	Initials (when complete)
500	Storage 1 – No water tight cover and cover not hinged				
750	Storage 2 – Overflow has no vertical section of pipe				
50,000	Distribution 1 – 15% of water unaccounted for				
4 6000	Distribution 2 – Dead end mains not equipped with means to flush				
500	Distribution 3 – Dead end mains not flushed twice yearly				
3000	Distribution 4 – No cross connection control plan				
2500	Managerial 1 – No licensed substitute operator				
100	Managerial 2 – PUBLIC NOTICE				
2	Treatment 1 – Unapproved modifications at water plant				
1000	Treatment 2 – No backflow prevention on lines to solution tanks				
1000	Treatment 3 – No backflow prevention on threaded non-sample taps				

Significant Deficiency	Corrective Action	Planned Completion Date	Actual Completion Date	Initials (when complete)
Treatment 4 – Inadequate venting in water treatment plant building				
Disinfection 1 – No auxiliary power for chlorine pump				

Deficiency	Corrective Action	Planned Completion Date	Actual Completion Dte	Initials (when complete)
General 1 – Previous Deficiencies				
Storage 1 - Overflow not brought down to 12 to 24 inches				
Storage 2 – Overflow does not discharge of structure or plate.				
Storage 3 – Overflow not brought down to 12 to 24 inches				
Storage 4 – Cannot isolate storage reservoir				
Storage 5 – Vent does not open downward				
Managerial 1 – Operations and Maintenance Manual				

I certify, to the best of my knowledge that all significant deficiencies have been corrected and meet the requirements pursuant to IDAPA 58.01.08. (*signature when <u>all</u> deficiencies have been corrected, initials after each date when corrected)**

Signature: _____ **Date:** _____

Appendix C – Water Quality Data

LAB FEDERAL ID#: ID00013	LAB SAMPLE NUMBER: 111122040-001
DATE RECEIVED: 11/22/2011	DATE REPORTED BY LAB: 12/6/2011
COMPLIANCE SAMPLE: YES	REPLACEMENT SAMPLE: NO
COLLECTION DATE: 11/17/2011	COLLECTION TIME: 12:00 PM
SAMPLE TYPE:	
PWS #: 2250011	PWS NAME: CLEARWATER WATER DISTRICT
SAMPLING POINT/LOCATION: WALL CREEK DIVISION SITE	TAG #/FACILITY ID:
CONTACT NAME: RICHARD SCHAACK	CONTACT PHONE: (208) 926-7783

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Public Drinking Water System Inorganic Chemical (IOC) Analysis Report

FRDS	Contaminant	Result	Units	MCL	MDL	Method	Analysis Date	Analyst	Qualifier
Primary IOCs									
				Phase II					
1010	Barium	0.0420	mg/L	2	0.001	EPA 200.8	12/5/2011	JTT	
				Other IOCs					
1025	Fluoride	ND	mg/L	4	0.1	EPA 300.0	11/29/2011	JTT	
Secondary IOCs (optional)									
	Boron	ND	mg/L		0.01	EPA 200.8	12/5/2011	JTT	
1003	Ammonia/N	ND	mg/L		0.05	SM4500NH3C	11/29/2011	CRW	
1016	Calcium	8.78	mg/L		0.01	EPA 200.7	11/30/2011	ETL	
1017	Chloride	0.520	mg/L	250	0.1	EPA 300.0	11/29/2011	JTT	
1028	Iron	0.779	mg/L	0.3	0.01	EPA 200.7	11/30/2011	ETL	
1031	Magnesium	2.58	mg/L		0.01	EPA 200.7	11/30/2011	ETL	
1032	Manganese	0.0980	mg/L	0.05	0.01	EPA 200.7	11/30/2011	ETL	
1042	Potassium	0.962	mg/L		0.01	EPA 200.7	11/30/2011	ETL	
1049	Silicon	12.4	mg/L		0.1	EPA 200.7	11/30/2011	ETL	
1055	Sulfate	1.16	mg/L	250	0.1	EPA 300.0	11/29/2011	JTT	
1925	pH	6.85				SM 4500pH-B	11/23/2011	KFG	
	Carbonate	ND	mg/L		5	SM2320B	11/23/2011	KFG	
	Bicarbonate	33.5	mg/L		5	SM2320B	11/23/2011	KFG	
	Strontium	0.0627			0.01	EPA 200.8	12/5/2011	JTT	

Comments: LYLE SMITH;PO BOX 314;STITES, ID 83552

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C585; MT:Cert0095

LAB FEDERAL ID#: ID00013	LAB SAMPLE NUMBER: 111122040-001A
DATE RECEIVED: 11/22/2011	DATE REPORTED BY LAB: 12/6/2011
COMPLIANCE SAMPLE: YES	REPLACEMENT SAMPLE: NO
COLLECTION DATE: 11/17/2011	COLLECTION TIME: 12:00 PM
SAMPLE TYPE:	
PWS #: 2250011	PWS NAME: CLEARWATER WATER DISTRICT
SAMPLING POINT/LOCATION: WALL CREEK DIVISION SITEA	TAG #/FACILITY ID:
CONTACT NAME: RICHARD SCHAACK	CONTACT PHONE: (208) 926-7783

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Public Drinking Water System Inorganic Chemical (IOC) Analysis Report

FRDS	Contaminant	Result	Units	MCL	MDL	Method	Analysis Date	Analyst	Qualifier
Secondary IOCs (optional)									
1927	Alkalinity	33.5	mg/L		5	SM2320B	11/23/2011	KFG	

Comments: LYLE SMITH;PO BOX 314;STITES, ID 83552

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C585; MT:Cert0095

LAB FEDERAL ID#: ID00013	LAB SAMPLE NUMBER: 111122040-002
DATE RECEIVED: 11/22/2011	DATE REPORTED BY LAB: 12/6/2011
COMPLIANCE SAMPLE: YES	REPLACEMENT SAMPLE: NO
COLLECTION DATE: 11/21/2011	COLLECTION TIME: 12:30 PM
SAMPLE TYPE:	
PWS #: 2250011	PWS NAME: CLEARWATER WATER DISTRICT
SAMPLING POINT/LOCATION: WALL CREEK DIVISION SITE	TAG #/FACILITY ID:
CONTACT NAME: RICHARD SCHAACK	CONTACT PHONE: (208) 926-7783

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Public Drinking Water System Inorganic Chemical (IOC) Analysis Report

FRDS	Contaminant	Result	Units	MCL	MDL	Method	Analysis Date	Analyst	Qualifier
Primary IOCs									
			Phase II						
1040	Nitrate	ND	mg/L	10	0.1	EPA 300.0	11/22/2011	ETL	

ND = Analyte Not Detected
----- = No Analysis Performed
MCL = Maximum Contaminant Level
MDL = Method Detection Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Lab Supervisor

RICHARD SCHAACK
CLEARWATER WATER DISTRICT
P.O. BOX 314
STITES, ID 83552

Comments: LYLE SMITH;PO BOX 314;STITES, ID 83552

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C585; MT:Cert0095

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Login Report

Customer Name: CLEARWATER WATER DISTRICT
P.O. BOX 314
STITES ID 83552

Order ID: 111122040
Order Date: 11/22/2011

Contact Name: RICHARD SCHAACK
Project Name: IOC

Comment: LYLE SMITH;PO BOX 314;STITES, ID 83552

Sample #: 111122040-001 **Customer Sample #:** WALL CREEK DIVISION SITE

Recv'd: ☑ **Collector:** RICHARD SCHAACK **Date Collected:** 11/17/2011
Quantity: 2 **Matrix:** Drinking Water **Date Received:** 11/22/2011 12:51:00
Comment:

Test	Lab	Method	Due Date	Priority
AMMONIA-NITROGEN	M	SM4500NH3G	12/6/2011	Normal (6-10 Days)
BARIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
BICARBONATE	M	SM2320B	12/6/2011	Normal (6-10 Days)
BORON	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
CALCIUM ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
CARBONATE	M	SM2320B	12/6/2011	Normal (6-10 Days)
CHLORIDE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
FLUORIDE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
IRON ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
MAGNESIUM ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
MANGANESE ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
pH	M	SM 4500pH-B	12/6/2011	Normal (6-10 Days)
POTASSIUM ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
SILICON ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
STRONTIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
SULFATE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)

Customer Name: CLEARWATER WATER DISTRICT
P.O. BOX 314
STITES ID 83552

Order ID: 111122040
Order Date: 11/22/2011

Contact Name: RICHARD SCHAACK
Project Name: IOC

Comment: LYLE SMITH;PO BOX 314;STITES, ID 83552

Sample #: 111122040-002 **Customer Sample #:** WALL CREEK DIVISION SITE

Recv'd: ☑ **Collector:** RICHARD SCHAACK **Date Collected:** 11/21/2011
Quantity: 1 **Matrix:** Drinking Water **Date Received:** 11/22/2011 12:51:00
Comment:

Test	Lab	Method	Due Date	Priority
NITRATE/N	M	EPA 300.0	12/6/2011	***Normal (6-10 Days)***

SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	3.0
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

Anatek Labs, Inc.

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Spokane WA 99202
(509) 838-3999 FAX 838-4433

1282 Alturas Drive
Moscow ID 83843
(208) 883-2839 FAX 882-9246

Turn Around Time
- ☐ Normal
- ☐ Next Day* (Rush Charges Apply)
- ☐ 2-Day* (Rush Charges Apply)

☐ Email _____ Results Needed by: / /
☐ Phone
☐ Mail
☐ Fax FAX # _____

Please fill out completely and legibly

Date Collected	Time Collected	County
11/17/2011	___ : 1200 Noon AM PM	IDAHO

Sample Purpose
- ☐ Purchase/Sale/Bldg Permit
- ☐ Informative
- ☐ New Well

TD&H Eng. Firm Comparison Sample

Sample Type
- ☐ Standard Drinking Water
- ☒ Raw Source Water
- ☐ Other (Specify) _____

Owner or Manager Name: CLEARWATER WATER DISTRICT

Specific Location Where Sample Was Collected (i.e. address of well): WALL CREEK DIVERSION SITE

Send Report to:
Name: LYLE SMITH
Address: P.O. BOX 314
City: STITES St: IDAHO Zip: 83552
Day Tel #: 208-926-7789
Eve/Msg Tel #:
Sample Collected by: RICHARD SCHRACK
Company:

Source Type (Check One)
- ☐ Well/WellSpring
- ☐ Spring
- ☒ Surface Water
- ☐ Purchased or Intertie
- ☐ Grd Water under Surface Influence
- ☐ Combination or Other _____

COLIFORM BACTERIA (Lab Use Only)

☐ SATISFACTORY (COLIFORM ABSENT)

REPEAT SAMPLES REQUIRED
☐ Unsatisfactory (Coliform Present)
☐ Total Present ☐ Total Absent
☐ E.Coli Present ☐ E.Coli Absent

Other Lab Results

Total Coliform	/100ml	E.Coli	/100ml
Fecal Coliform	/100ml	Plate Count	/100ml

☐ Another Sample Required

Sample Not Tested Because:
- ☐ Sample Too Old
- ☐ Wrong Container
- ☐ Other _____

Test Unsuitable Because:
- ☐ TNTC
- ☐ Turbid Culture
- ☐ Excess Debris

Report Date	Lab Analyst	
Date Received: 11/22/11 12:51	Time: 12:51 USPS	By: BT 3.0°C

Inorganic Chemical Analysis Report

✓	Tests	MCL	Results	Units	Compliance Y/N	Initials
	Arsenic (AS)	0.05		mg/L		
✓	Barium (Ba)	2		mg/L		
	Beryllium Be)	0.004		mg/L		
	Cadmium (Cd)	0.0005		mg/L		
	Chromium (Cr)	0.1		mg/L		
	Copper (Cu)	1.3		mg/L		
	Lead (Pb)	0.015		mg/L		
✓	Manganese (Mn)					
	Mercury (Hg)					
	Nickel (Ni)					
	Selenium (Se)					
	Silver (Ag)					
	Sodium (Na)					
	Zinc (Zn)					
✓	Chloride (Cl)					
✓	Flouride (F)					
✓	**Nitrate as N**					
	Nitrite as N					
✓	Sulfate (SO_4)					
	Hardness					
	Conductivity					
	Corrosivity					
	Turbidity					
	Color			Color Units		
✓	pH	-		-		
	TDS	500		mg/L		
	TSS	-		mg/L		
	Cyanide (CN)	0.2		mg/L		
✓	Iron (Fe)	0.3		mg/L		
✓	Magnesium	-		mg/L		
✓	Calcium	-		mg/L		

Please send copy of results to:
TD&H Engineering
2517 12th St
Suite B
Lewiston, ID 83501
Per Richard Schrack

MCL-Max. Contaminant Level TSS-Total Suspended Solids TDS-To

OTHER ANALYSES REQUESTED

Inorganic Contaminants (IOC's)	
Volatile Organics (VOC's)	
Semivolatile Organics (SOC's)	
Private Well Test	

Laboratory Comments
MWBS

Lab Supervisor Report Date

IOC 1st SAMP 11/17/201 1st RCVD 11/22/2011 111122 040 CLEA Last Due 12/6/2011

Printed on: 8 December 2011 09:07:00

11/21/11

ALSO NeeD TeST RUN ON FOLLOWing

BiCARBONATE - H303
SiLICA
BORON
CARBONATE
STRONTURM
POTASSIUM

I RINSed OUT COLiFORM BOTTLE AND TOOK ANEW RAW WATER SAMPLE FOR NITRATE TEST. SAMPLE TIME WAS 12:30 11/21/11

THANK YOU.
Richard

ANATEK LABS RECEIVING LIST

☑ RECEIVED INTACT TEMP: 3.7 °C
☑ LABELS & CHAINS AGREE
☐ NO HEADSPACE
ICE / ICE-PACKS PRESENT: Y
CUSTODY SEALS PRESENT: N
PRESERVATIVES: —
NUMBER OF CONTAINERS: 1 SHIPPED VIA: UPS
DATE & TIME: 11/22/11 1215 INSPECTED BY: BT

Anatek Labs, Inc.

Quality & Reliable Analytical Services

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(509) 838-3999 • FAX 838-4433

moscow@anateklabs.com www.anateklabs.com spokane@anateklabs.com

FAX COVER PAGE

TO: HEATHER
TD&H

FROM: JUSTIN DOTY
ANATEK LABS, INC.
MOSCOW, IDAHO

DATE: December 2, 2011

RE: WATER REPORT

NUMBER OF PAGES TO FOLLOW: 4

Anatek Labs, Inc.

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REPORT TO: LYLE SMITH
PO BOX 314
STITES, ID 83552

Water Quality Report - Inorganic Contaminants

Sample Number 111122038-001 **Sampling Date** 11/17/2011 **Date/Time Received** 11/22/2011 12:55 PM

Analyte	Result	Units	PQL	MCL	Analysis Date	Analyst
Arsenic	ND	mg/L	0.001	0.01	11/28/2011	ETL
Barium	0.00158	mg/L	0.001	2	11/28/2011	ETL
Cadmium	ND	mg/L	0.001	0.005	11/28/2011	ETL
Chloride	0.283	mg/L	0.1	250	11/22/2011	ETL
Chromium	ND	mg/L	0.001	0.1	11/28/2011	ETL
TDS	83.85	mg/L			11/23/2011	KFG
Copper	0.00138	mg/L	0.001	1.3	11/28/2011	ETL
Fluoride	0.188	mg/L	0.1	4	11/22/2011	ETL
Calcium	9.60	mg/L	0.1		11/30/2011	ETL
Hardness	44.4	mg/L	1		11/30/2011	ETL
Magnesium	4.95	mg/L	0.1		11/30/2011	ETL
Iron	0.259	mg/L	0.01	0.3	11/30/2011	ETL
Lead	ND	mg/L	0.001	0.015	11/28/2011	ETL
Manganese	0.0479	mg/L	0.001	0.05	11/28/2011	ETL
Mercury-ICPMS	ND	mg/L	0.0001	0.002	11/28/2011	ETL
Nickel	ND	mg/L	0.001		11/28/2011	ETL
NO3/N	ND	mg/L	0.1	10	11/22/2011	ETL
NO2/N	ND	mg/L	0.1	1	11/22/2011	ETL
pH	7.11				11/23/2011	KFG
Potassium	3.19	mg/L	0.01		11/30/2011	ETL
Selenium	ND	mg/L	0.001	0.05	11/28/2011	ETL
Silver	ND	mg/L	0.001	0.1	11/28/2011	ETL
Sodium	5.74	mg/L	0.1		11/30/2011	ETL
Sulfate	2.96	mg/L	0.1	250	11/22/2011	ETL
Zinc	0.00518	mg/L	0.001	5	11/28/2011	ETL

SAMPLING LOCATION: FUNKHOUSER WELL

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Note **This report is for non-public water systems only and may not be used for compliance.**

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0029; NM; ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C565; MT:Cert0095

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Login Report

Customer Name: CLEARWATER WATER DISTRICT
P.O. BOX 314
STITES ID 83552

Order ID: 111122038
Order Date: 11/22/2011

Contact Name: RICHARD SCHAACK
Project Name: PWL

Comment: LYLE SMITH;PO BOX 314;STITES, ID 83552

Sample #: 111122038-001 **Customer Sample #:** FUNKHOUSER WELL

Recv'd: ☑ **Collector:** RICHARD SCHAACK **Date Collected:** 11/17/2011
Quantity: 1 **Matrix:** Drinking Water **Date Received:** 11/22/2011 12:55:00
Comment:

Test	Lab	Method	Due Date	Priority
ARSENIC	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
BARIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
CADMIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
CHLORIDE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
CHROMIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
CONDUCTIVITY	M	EPA 120.1	12/6/2011	Normal (6-10 Days)
COPPER	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
FLUORIDE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
HARDNESS by EPA 200.7	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
IRON ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
LEAD	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
MANGANESE	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
MERCURY-ICPMS	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
NICKEL	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
NITRATE/N	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
NITRITE/N	M	EPA 300.0	12/6/2011	Normal (6-10 Days)
pH	M	EPA 150.1	12/6/2011	Normal (6-10 Days)
POTASSIUM ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
Private Well Test	M	N/A	12/6/2011	Normal (6-10 Days)
SELENIUM	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
SILVER	M	EPA 200.8	12/6/2011	Normal (6-10 Days)
SODIUM ICP	M	EPA 200.7	12/6/2011	Normal (6-10 Days)
SULFATE	M	EPA 300.0	12/6/2011	Normal (6-10 Days)

Customer Name: CLEARWATER WATER DISTRICT
P.O. BOX 314
STITES ID 83552

Order ID: 111122038
Order Date: 11/22/2011

Contact Name: RICHARD SCHAACK
Project Name: PWL

Comment: LYLE SMITH;PO BOX 314;STITES, ID 83552

ZINC	M	EPA 200.8	12/6/2011	***Normal (6-10 Days)***

SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	3.0
Samples received with a COC?	Yes
Samples received within holding time?	No
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

ANATEK LABS, INC - Multi-state Certified, NEL
☐ 1282 Alturas Drive,Moscow ID 83843 (208)883-2839 FAX 882-
☐ 504 E Sprague Ste D, Spokane WA 99202 (509)838-3999 FAX 83

111122 038 CLEA Last Due 12/6/2011
1st SAMP 11/17/201 1st RCVD 11/22/2011
PWL

Idaho Chain of Custody - Drinking Water Analysis

WATER SYSTEM	CLEARWATER WATER DIST	Water System #	2250011
SEND REPORT TO	LYLE SMITH	Phone Number	
ADDRESS	P.O. BOX 314	Fax Number	
CITY STATE ZIP	STITES, IDA 83552	County	

Sample Type
- ☐ Raw Water
- ☐ Distribution
- ☐ Plant Tap

Sample Purpose
- ☐ Compliance
- ☐ Investigative
- ☐ Other Purpose

Public Water System Jurisdiction
A copy of the report to be sent to:

Payment due with samples, unless credit has been established

Sample Collection Location
FUNKHOUSER WELL

Well Tag #: WELL WATER

Date & Time Collected: 11/17/11 11:30

Sampler Name: RICHARD SCHAACK

Sampler Signature: Richard Schaack

Receiving Check List
- ☐ Received Intact
- ☐ Labels & Chains Agree
- ☐ Bottles Packs Present
- ☐ Custody Seals Present
- ☐ Preservative

Check Desired Analyses

IOCs
- ☐ Nitrate & Sulfate ☐ Fluoride ☐ Nitrite
- ☐ Phase II IOC Metals
- ☐ Phase V IOC Metals
- ☐ Partial IOC Package with On Waiver
- ☐ Secondary/Optional IOC Package
- ☐ Complete IOC Package
- ☐ Cyanide
- ☐ Asbestos

VOCs & DBPs
- ☐ VOC
- ☐ THM
- ☐ HAA5
- ☐ TOC

RADs
- ☐ Gross Alpha
- ☐ Gross Beta
- ☐ RAD 226
- ☐ RAD 228

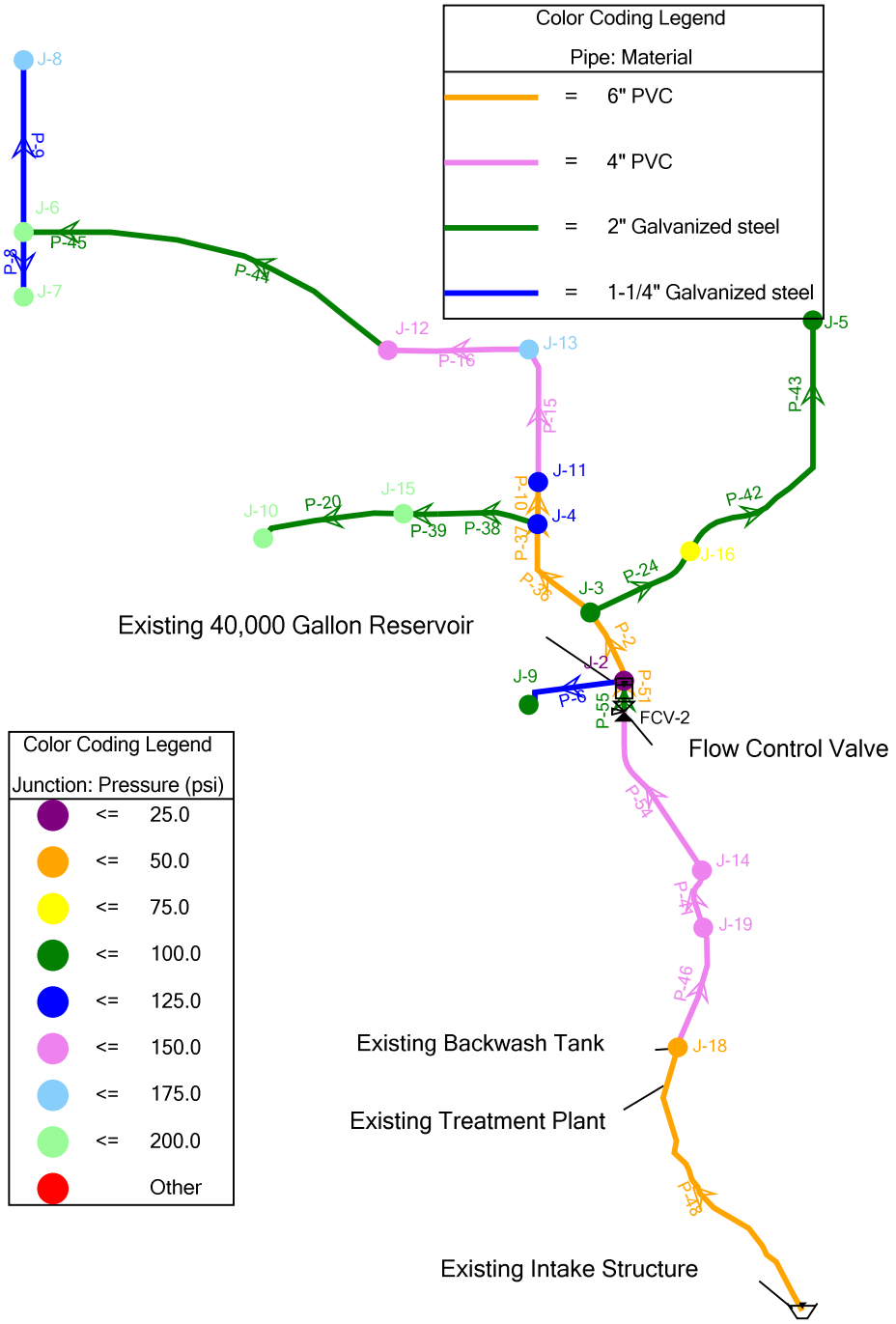
SOCs
- ☐ Phase I SOC
- ☐ Semivolatiles
- ☐ Herbicides
- ☐ Carbamates
- ☐ Pesticides
- ☐ EDB
- ☐ Phase V SOC
- ☐ Dioxin
- ☐ Endothall
- ☐ Glyphosate
- ☐ Dioxin

Other (specify)
SAMPLE AS A PRIVATE WELL TEST
THANK YOU!
~~metals/Iron~~
~~Pest~~
~~ammonia Hydro~~ BT
MWBS

Customer Signature		Received By	BT USPS
Shipping/Delivery Date		Date Received	11/22/11 12:55

Appendix D – WaterCAD Model

Scenario: Existing - Average Day Demand (45 gpm)



FlexTable: Pipe Table (L11-017 Clearwater Existing.wtg)

Current Time: 0.000 hours

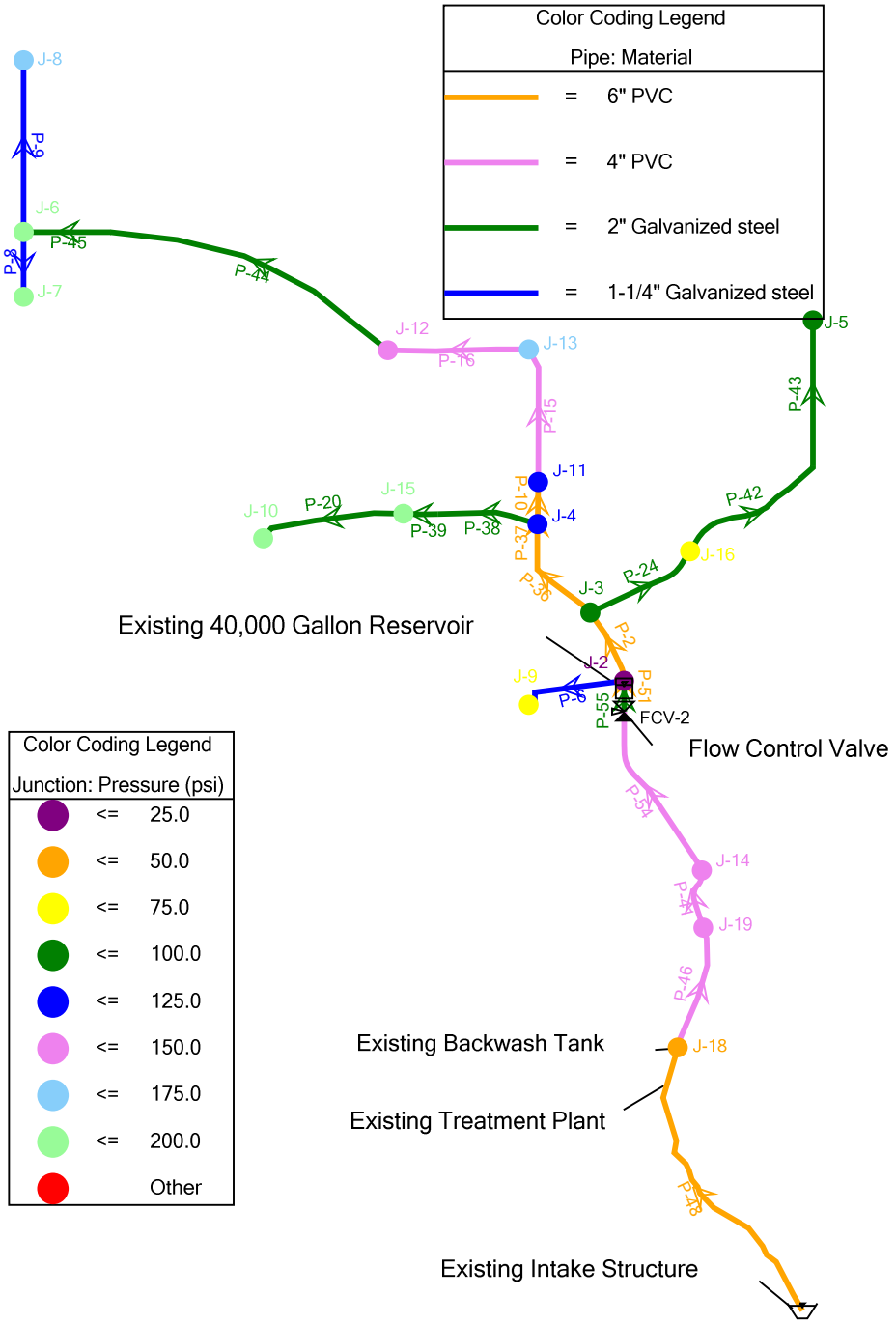
Label	Length (Scaled) (ft)	Has User Defined Length?	Length (User Defined) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-6	1,953.32	False	0.00	1.250	1-1/4" Galvanized steel	120.0	0.900	0.24
P-8	1,164.45	False	0.00	1.250	1-1/4" Galvanized steel	120.0	0.900	0.24
P-9	3,092.76	False	0.00	1.250	1-1/4" Galvanized steel	120.0	0.900	0.24
P-39	626.32	False	0.00	2.000	2" Galvanized steel	120.0	3.600	0.37
P-20	2,631.27	False	0.00	2.000	2" Galvanized steel	120.0	1.800	0.18
P-24	2,156.88	False	0.00	2.000	2" Galvanized steel	120.0	5.401	0.55
P-38	1,816.36	False	0.00	2.000	2" Galvanized steel	120.0	3.597	0.37
P-55	417.18	True	10.00	2.000	2" Galvanized steel	120.0	150.000	15.32
P-42	2,802.19	False	0.00	2.000	2" Galvanized steel	120.0	4.501	0.46
P-43	2,613.20	False	0.00	2.000	2" Galvanized steel	120.0	4.500	0.46
P-44	5,556.29	False	0.00	2.000	2" Galvanized steel	120.0	4.503	0.46
P-45	1,572.20	False	0.00	2.000	2" Galvanized steel	120.0	4.500	0.46
P-41	1,095.87	True	930.77	4.000	4" PVC	120.0	154.500	3.94
P-46	2,259.19	True	1,918.83	4.000	4" PVC	120.0	154.500	3.94
P-16	2,539.60	True	2,448.56	4.000	4" PVC	120.0	5.403	0.14
P-15	2,427.46	True	2,340.44	4.000	4" PVC	120.0	9.903	0.25
P-54	3,302.45	True	2,831.26	4.000	4" PVC	120.0	150.000	3.83
P-2	1,387.24	True	1,507.01	6.000	6" PVC	120.0	38.704	0.44
P-36	2,030.24	True	2,205.52	6.000	6" PVC	120.0	31.502	0.36
P-10	757.69	True	725.00	6.000	6" PVC	120.0	18.903	0.21
P-48	5,743.85	True	6,728.00	6.000	6" PVC	120.0	154.500	1.75
P-51	135.58	True	12.39	6.000	6" PVC	120.0	40.504	0.46
P-37	18.85	True	20.48	6.000	6" PVC	120.0	31.500	0.36

FlexTable: Junction Table (L11-017 Clearwater Existing.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	2,820.00	<Collection: 1 items>	0.900	2,827.20	3.1
J-3	2,647.00	<Collection: 2 items>	1.800	2,826.88	77.8
J-4	2,570.00	<Collection: 1 items>	9.000	2,826.57	111.0
J-5	2,612.00	<Collection: 1 items>	4.500	2,819.98	90.0
J-6	2,395.00	<Collection: 1 items>	2.700	2,820.32	184.0
J-7	2,396.00	<Collection: 1 items>	0.900	2,819.84	183.4
J-8	2,456.00	<Collection: 1 items>	0.900	2,819.05	157.1
J-9	2,652.00	<Collection: 1 items>	0.900	2,826.40	75.5
J-10	2,364.00	<Collection: 1 items>	1.800	2,824.85	199.4
J-11	2,550.00	<Collection: 1 items>	9.000	2,826.53	119.6
J-12	2,518.00	<Collection: 1 items>	0.900	2,826.15	133.3
J-13	2,455.00	<Collection: 1 items>	4.500	2,826.24	160.6
J-14	2,851.00	<Collection: 1 items>	4.500	3,145.19	127.3
J-15	2,409.00	<Collection: 1 items>	1.800	2,825.25	180.1
J-16	2,688.00	<Collection: 1 items>	0.900	2,824.41	59.0
J-18	3,113.00	<Collection: 0 items>	0.000	3,200.79	38.0
J-19	2,851.00	<Collection: 0 items>	0.000	3,163.35	135.1

Scenario: Existing - Maximum Day Demand (77 gpm)



FlexTable: Pipe Table (L11-017 Clearwater Existing.wtg)

Current Time: 0.000 hours

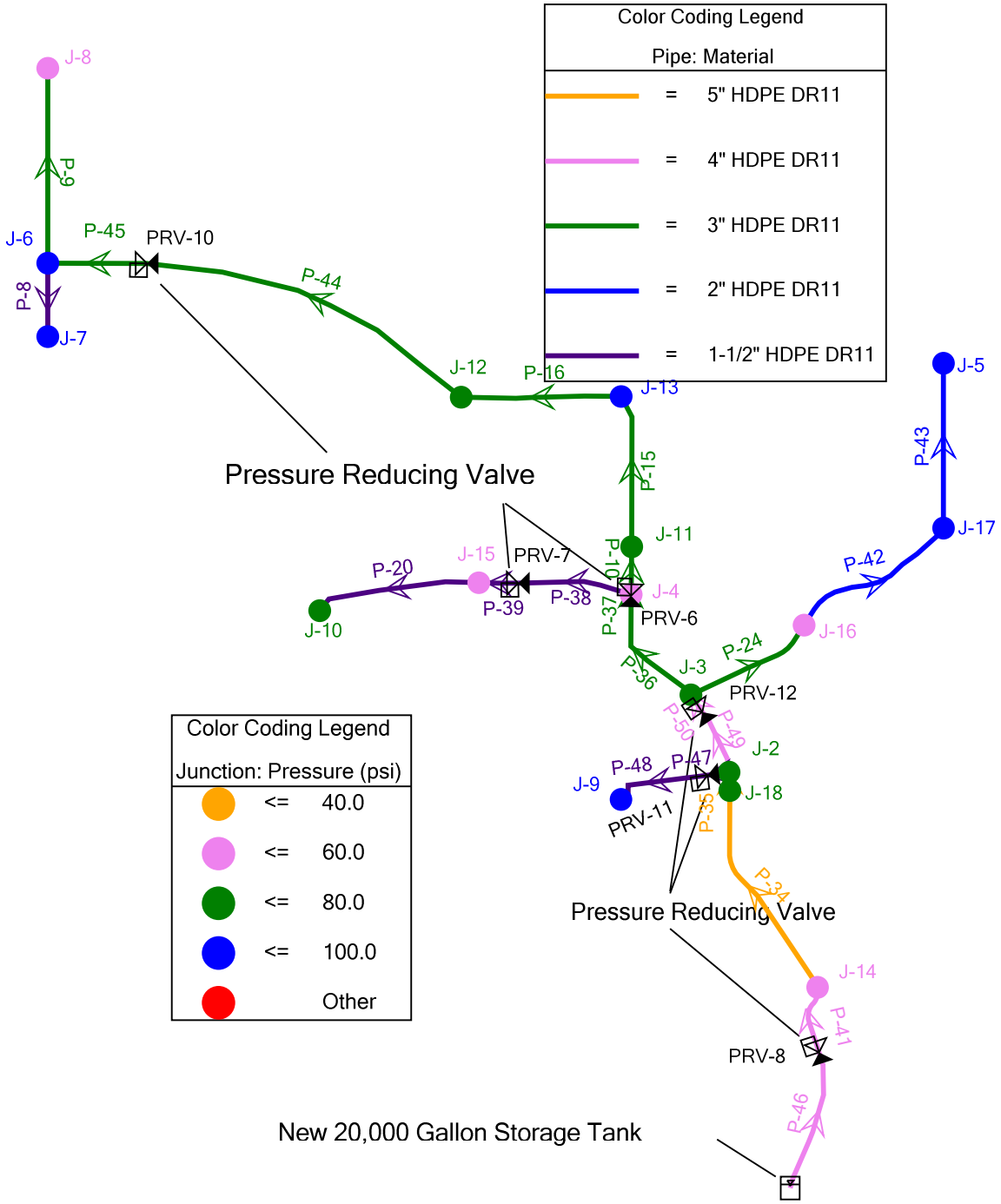
Label	Length (Scaled) (ft)	Has User Defined Length?	Length (User Defined) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-6	1,953.32	False	0.00	1.250	1-1/4" Galvanized steel	120.0	1.540	0.40
P-8	1,164.45	False	0.00	1.250	1-1/4" Galvanized steel	120.0	1.540	0.40
P-9	3,092.76	False	0.00	1.250	1-1/4" Galvanized steel	120.0	1.540	0.40
P-39	626.32	False	0.00	2.000	2" Galvanized steel	120.0	6.160	0.63
P-20	2,631.27	False	0.00	2.000	2" Galvanized steel	120.0	3.080	0.31
P-24	2,156.88	False	0.00	2.000	2" Galvanized steel	120.0	9.243	0.94
P-38	1,816.36	False	0.00	2.000	2" Galvanized steel	120.0	6.161	0.63
P-55	417.18	True	10.00	2.000	2" Galvanized steel	120.0	150.000	15.32
P-42	2,802.19	False	0.00	2.000	2" Galvanized steel	120.0	7.703	0.79
P-43	2,613.20	False	0.00	2.000	2" Galvanized steel	120.0	7.700	0.79
P-44	5,556.29	False	0.00	2.000	2" Galvanized steel	120.0	7.702	0.79
P-45	1,572.20	False	0.00	2.000	2" Galvanized steel	120.0	7.700	0.79
P-41	1,095.87	True	930.77	4.000	4" PVC	120.0	157.700	4.03
P-46	2,259.19	True	1,918.83	4.000	4" PVC	120.0	157.700	4.03
P-16	2,539.60	True	2,448.56	4.000	4" PVC	120.0	9.242	0.24
P-15	2,427.46	True	2,340.44	4.000	4" PVC	120.0	16.942	0.43
P-54	3,302.45	True	2,831.26	4.000	4" PVC	120.0	150.000	3.83
P-2	1,387.24	True	1,507.01	6.000	6" PVC	120.0	66.227	0.75
P-36	2,030.24	True	2,205.52	6.000	6" PVC	120.0	53.904	0.61
P-10	757.69	True	725.00	6.000	6" PVC	120.0	32.342	0.37
P-48	5,743.85	True	6,728.00	6.000	6" PVC	120.0	157.700	1.79
P-51	135.58	True	12.39	6.000	6" PVC	120.0	69.307	0.79
P-37	18.85	True	20.48	6.000	6" PVC	120.0	53.904	0.61

FlexTable: Junction Table (L11-017 Clearwater Existing.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	2,820.00	<Collection: 1 items>	1.540	2,827.19	3.1
J-3	2,647.00	<Collection: 2 items>	3.080	2,826.34	77.6
J-4	2,570.00	<Collection: 1 items>	15.400	2,825.49	110.5
J-5	2,612.00	<Collection: 1 items>	7.700	2,807.68	84.7
J-6	2,395.00	<Collection: 1 items>	4.620	2,808.59	178.9
J-7	2,396.00	<Collection: 1 items>	1.540	2,807.31	178.0
J-8	2,456.00	<Collection: 1 items>	1.540	2,805.17	151.1
J-9	2,652.00	<Collection: 1 items>	1.540	2,825.03	74.9
J-10	2,364.00	<Collection: 1 items>	3.080	2,820.85	197.7
J-11	2,550.00	<Collection: 1 items>	15.400	2,825.38	119.1
J-12	2,518.00	<Collection: 1 items>	1.540	2,824.36	132.5
J-13	2,455.00	<Collection: 1 items>	7.700	2,824.62	159.9
J-14	2,851.00	<Collection: 1 items>	7.700	3,142.34	126.0
J-15	2,409.00	<Collection: 1 items>	3.080	2,821.91	178.6
J-16	2,688.00	<Collection: 1 items>	1.540	2,819.66	57.0
J-18	3,113.00	<Collection: 0 items>	0.000	3,200.08	37.7
J-19	2,851.00	<Collection: 0 items>	0.000	3,161.20	134.2

Scenario: Ave Day Demand (12 gpm)



FlexTable: Pipe Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Has User Defined Length?	Length (User Defined) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-39	626.32	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.960	0.17
P-20	2,631.27	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.480	0.08
P-8	1,164.45	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.240	0.04
P-38	1,816.36	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.960	0.17
P-48	1,608.65	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.240	0.04
P-47	344.71	False	0.00	1.534	1-1/2" HDPE DR11	120.0	0.240	0.04
P-43	2,613.20	False	0.00	1.917	2" HDPE DR11	120.0	1.200	0.13
P-42	2,802.19	False	0.00	1.917	2" HDPE DR11	120.0	1.200	0.13
P-9	3,092.76	False	0.00	2.825	3" HDPE DR11	120.0	0.240	0.01
P-10	757.69	True	725.00	2.825	3" HDPE DR11	120.0	5.280	0.27
P-15	2,427.46	True	2,340.44	2.825	3" HDPE DR11	120.0	2.640	0.14
P-16	2,539.60	True	2,448.56	2.825	3" HDPE DR11	120.0	1.440	0.07
P-24	2,156.88	False	0.00	2.825	3" HDPE DR11	120.0	1.440	0.07
P-37	18.85	True	20.48	2.825	3" HDPE DR11	120.0	8.640	0.44
P-36	2,030.24	True	2,205.52	2.825	3" HDPE DR11	120.0	8.645	0.44
P-44	5,556.29	False	0.00	2.825	3" HDPE DR11	120.0	1.200	0.06
P-45	1,572.20	False	0.00	2.825	3" HDPE DR11	120.0	1.200	0.06
P-46	2,259.19	True	1,918.83	3.633	4" HDPE DR11	120.0	12.012	0.37
P-49	1,056.82	True	1,147.44	3.633	4" HDPE DR11	120.0	10.329	0.32
P-50	330.64	True	359.57	3.633	4" HDPE DR11	120.0	10.325	0.32
P-41	1,095.87	True	930.77	3.633	4" HDPE DR11	120.0	12.009	0.37
P-34	3,565.66	True	3,262.01	4.339	5" HDPE DR11	120.0	10.809	0.23
P-35	289.67	True	12.39	4.339	5" HDPE DR11	120.0	10.809	0.23

FlexTable: Junction Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

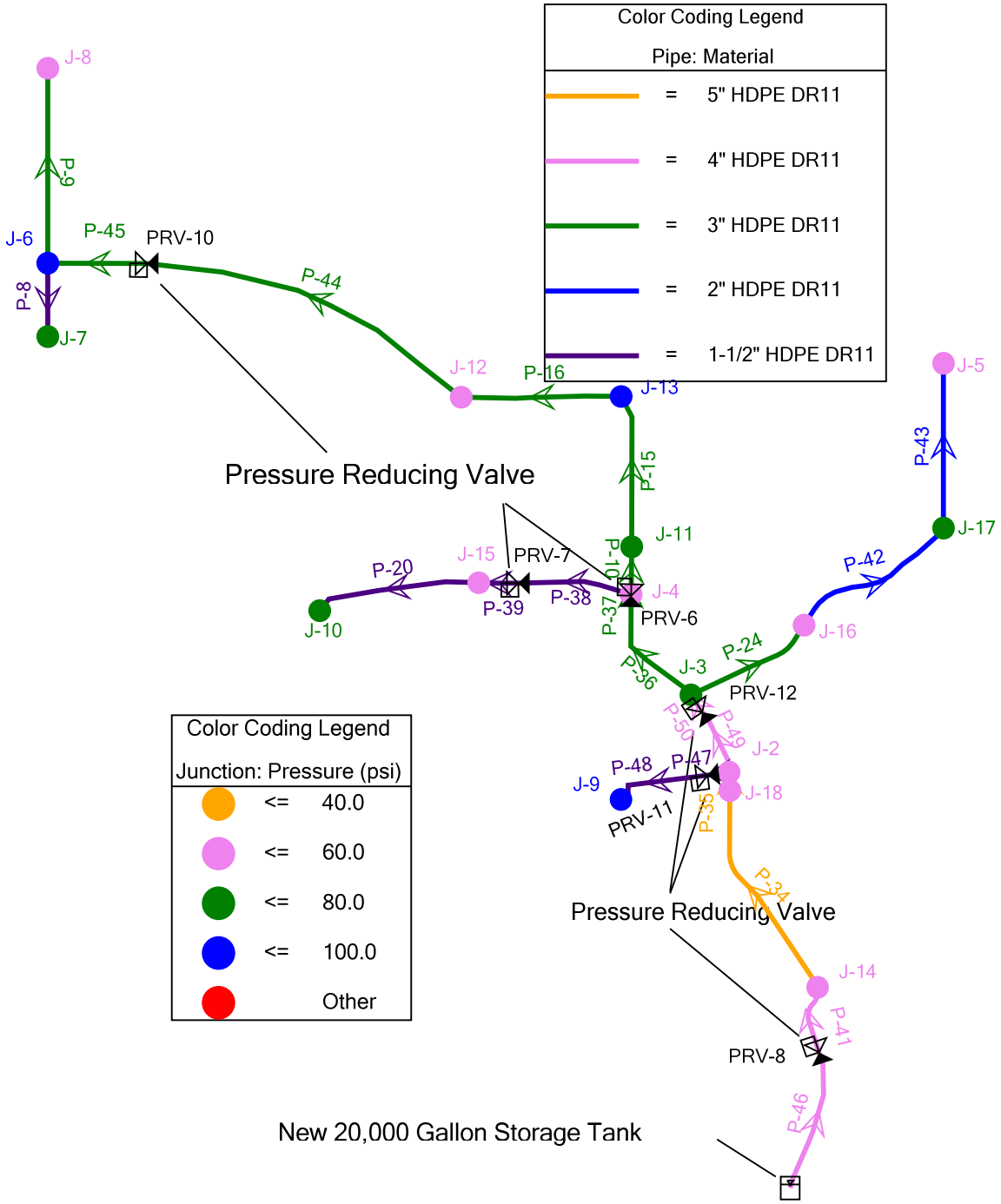
Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	2,820.00	<Collection: 1 items>	0.240	2,981.92	70.1
J-3	2,647.00	<Collection: 1 items>	0.240	2,803.97	67.9
J-4	2,570.00	<Collection: 1 items>	2.400	2,685.60	50.0
J-5	2,612.00	<Collection: 1 items>	1.200	2,803.46	82.8
J-6	2,395.00	<Collection: 1 items>	0.720	2,582.47	81.1
J-7	2,396.00	<Collection: 1 items>	0.240	2,582.45	80.7
J-8	2,456.00	<Collection: 1 items>	0.240	2,582.46	54.7
J-9	2,652.00	<Collection: 1 items>	0.240	2,857.78	89.0
J-10	2,364.00	<Collection: 1 items>	0.480	2,530.38	72.0
J-11	2,514.00	<Collection: 2 items>	2.640	2,685.45	74.2
J-12	2,518.00	<Collection: 1 items>	0.240	2,685.27	72.4
J-13	2,455.00	<Collection: 1 items>	1.200	2,685.32	99.6
J-14	2,858.00	<Collection: 1 items>	1.200	2,982.23	53.7
J-15	2,409.00	<Collection: 1 items>	0.480	2,530.50	52.6
J-16	2,688.00	<Collection: 1 items>	0.240	2,803.93	50.2
J-17	2,583.00	<Collection: 0 items>	0.000	2,803.69	95.5
J-18	2,820.00	<Collection: 0 items>	0.000	2,981.92	70.1

FlexTable: PRV Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Diameter (Valve) (in)	Hydraulic Grade Setting (Initial) (ft)	Pressure Setting (Initial) (psi)	Flow (gpm)	Headloss (ft)	Pressure (From) (psi)	Pressure (To) (psi)
PRV-6	2,570.00	3.000	2,685.52	50.0	8.645	117.24	100.7	50.0
PRV-7	2,415.00	1.500	2,530.52	50.0	0.960	154.68	116.9	50.0
PRV-8	2,890.00	4.000	2,982.42	40.0	12.012	153.29	106.3	40.0
PRV-10	2,490.00	3.000	2,582.42	40.0	1.200	102.71	84.5	40.0
PRV-11	2,800.00	1.500	2,857.76	25.0	0.240	124.11	78.7	25.0
PRV-12	2,700.00	4.000	2,803.97	45.0	10.329	177.63	121.9	45.0

Scenario: Max Inst. Demand (150 gpm)



FlexTable: Pipe Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Has User Defined Length?	Length (User Defined) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-39	626.32	False	0.00	1.534	1-1/2" HDPE DR11	120.0	12.000	2.08
P-20	2,631.27	False	0.00	1.534	1-1/2" HDPE DR11	120.0	6.000	1.04
P-8	1,164.45	False	0.00	1.534	1-1/2" HDPE DR11	120.0	3.000	0.52
P-38	1,816.36	False	0.00	1.534	1-1/2" HDPE DR11	120.0	12.000	2.08
P-48	1,608.65	False	0.00	1.534	1-1/2" HDPE DR11	120.0	3.000	0.52
P-47	344.71	False	0.00	1.534	1-1/2" HDPE DR11	120.0	3.000	0.52
P-43	2,613.20	False	0.00	1.917	2" HDPE DR11	120.0	15.000	1.67
P-42	2,802.19	False	0.00	1.917	2" HDPE DR11	120.0	15.000	1.67
P-9	3,092.76	False	0.00	2.825	3" HDPE DR11	120.0	3.000	0.15
P-10	757.69	True	725.00	2.825	3" HDPE DR11	120.0	66.000	3.38
P-15	2,427.46	True	2,340.44	2.825	3" HDPE DR11	120.0	33.000	1.69
P-16	2,539.60	True	2,448.56	2.825	3" HDPE DR11	120.0	18.000	0.92
P-24	2,156.88	False	0.00	2.825	3" HDPE DR11	120.0	18.000	0.92
P-37	18.85	True	20.48	2.825	3" HDPE DR11	120.0	108.000	5.53
P-36	2,030.24	True	2,205.52	2.825	3" HDPE DR11	120.0	108.000	5.53
P-44	5,556.29	False	0.00	2.825	3" HDPE DR11	120.0	15.000	0.77
P-45	1,572.20	False	0.00	2.825	3" HDPE DR11	120.0	15.000	0.77
P-46	2,259.19	True	1,918.83	3.633	4" HDPE DR11	120.0	150.005	4.64
P-49	1,056.82	True	1,147.44	3.633	4" HDPE DR11	120.0	129.000	3.99
P-50	330.64	True	359.57	3.633	4" HDPE DR11	120.0	129.000	3.99
P-41	1,095.87	True	930.77	3.633	4" HDPE DR11	120.0	150.000	4.64
P-34	3,565.66	True	3,262.01	4.339	5" HDPE DR11	120.0	135.000	2.93
P-35	289.67	True	12.39	4.339	5" HDPE DR11	120.0	135.000	2.93

FlexTable: Junction Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	2,820.00	<Collection: 1 items>	3.000	2,921.54	43.9
J-3	2,647.00	<Collection: 1 items>	3.000	2,796.02	64.5
J-4	2,570.00	<Collection: 1 items>	30.000	2,674.26	45.1
J-5	2,612.00	<Collection: 1 items>	15.000	2,741.16	55.9
J-6	2,395.00	<Collection: 1 items>	9.000	2,580.26	80.2
J-7	2,396.00	<Collection: 1 items>	3.000	2,578.63	79.0
J-8	2,456.00	<Collection: 1 items>	3.000	2,580.04	53.7
J-9	2,652.00	<Collection: 1 items>	3.000	2,855.54	88.1
J-10	2,364.00	<Collection: 1 items>	6.000	2,505.81	61.4
J-11	2,514.00	<Collection: 2 items>	33.000	2,658.33	62.4
J-12	2,518.00	<Collection: 1 items>	3.000	2,639.24	52.5
J-13	2,455.00	<Collection: 1 items>	15.000	2,644.09	81.8
J-14	2,858.00	<Collection: 1 items>	15.000	2,955.01	42.0
J-15	2,409.00	<Collection: 1 items>	6.000	2,519.15	47.7
J-16	2,688.00	<Collection: 1 items>	3.000	2,791.75	44.9
J-17	2,583.00	<Collection: 0 items>	0.000	2,765.57	79.0
J-18	2,820.00	<Collection: 0 items>	0.000	2,921.66	44.0

FlexTable: PRV Table (L11-017 Clearwater worst case.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Diameter (Valve) (in)	Hydraulic Grade Setting (Initial) (ft)	Pressure Setting (Initial) (psi)	Flow (gpm)	Headloss (ft)	Pressure (From) (psi)	Pressure (To) (psi)
PRV-6	2,570.00	3.000	2,685.52	50.0	108.000	0.00	45.6	45.6
PRV-7	2,415.00	1.500	2,530.52	50.0	12.000	110.42	97.8	50.0
PRV-8	2,890.00	4.000	2,982.42	40.0	150.005	97.18	82.1	40.0
PRV-10	2,490.00	3.000	2,582.42	40.0	15.000	48.90	61.2	40.0
PRV-11	2,800.00	1.500	2,857.76	25.0	3.000	63.25	52.4	25.0
PRV-12	2,700.00	4.000	2,803.97	45.0	129.000	91.88	84.8	45.0

Appendix E – Cost Estimates

Clearwater Water District						
Alternative 2 - Dual Distribution System with Smaller Membrane Filtration System						
Preliminary Cost Estimate						
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**	**Salvage Value**	
Mobilization for Distribution (5%)	1	LS	$21,100	$21,100		
HDPE Water Main, 1-1/2"	8,190	LF	$3.00	$24,570		$6,143
HDPE Water Main, 2"	5,415	LF	$3.25	$17,599		$4,400
HDPE Water Main, 3"	20,120	LF	$6.00	$120,720		$30,180
C 900 PVC Water Main, 4"	4,360	LF	$12.00	$52,320		$13,080
C 900 PVC Water Main, 6"	3,275	LF	$15.00	$49,125		$12,281
Fittings	1,000	Lbs.	$6.00	$6,000		$1,500
HDPE Service Lines, 1-1/2"	2,000	LF	$3.00	$6,000		$1,500
Water Service Connection to Main	48	Ea	$250	$12,000		$0
Curb Stop & Box	48	Ea	$425	$20,400		$5,100
Meters w/ Meter Pits	48	Ea	$1,125	$54,000		$13,500
Gate Valve & Box, 1-1/2"	2	Ea	$350	$700		$175
Gate Valve & Box, 2"	2	Ea	$400	$800		$200
Gate Valve & Box, 3"	6	Ea	$450	$2,700		$675
Gate Valve & Box, 4"	4	Ea	$500	$2,000		$500
Gate Valve & Box, 6"	4	Ea	$600	$2,400		$600
Air Relief Valves	6	Ea	$250	$1,500		$375
Filling Station Hydrants	10	Ea	$850	$8,500		$2,125
Pressure Reducing Valve	6	Ea	$5,000	$30,000		$7,500
Utility Crossings	1	LS	$5,000	$5,000		$0
Surface Restoration	1	LS	$5,000	$5,000		$1,250
	Subtotal Distribution System Costs			**$442,000**	**Subtotal**	**$101,100**
Mobilization for Tank (5%)	1	LS	$2,300	$2,300		
New Storage Tank	1	LS	$30,000	$30,000		$7,500
Tank Foundation	1	LS	$3,000	$3,000		$750
Control & Level Wiring to Tank Site	1	LS	$5,000	$5,000		$1,250
Transmission Main	100	LF	$15.00	$1,500		$375
Fittings	500	Lbs.	$6.00	$3,000		$750
Valve & Plumbing	1	Ea	$1,500	$1,500		$375
Connection to Existing Main	1	Ea	$1,200	$1,200		$300
Surface Restoration	1	LS	$1,000	$1,000		$250
	Subtotal Tank Costs			**$48,500**	**Subtotal**	**$11,550**
Mobilization Treatment System(5%)	1	LS	$9,200	$9,200		
Membrane System	2	Ea	$60,000	$120,000		$30,000
Electric/Building Modifications	1	LS	$40,000	$40,000		$10,000
Backup Power Generator	1	LS	$6,000	$6,000		$1,500
Sanitary Survey Deficiencies	1	LS	$2,500	$2,500		$625
Piping Modifications	1	LS	$15,000	$15,000		$3,750
	Subtotal Treatment System Costs			**$193,000**	**Subtotal**	**$45,875**
			Contingency (15%)	$102,525		
			Total Construction Estimate	**$786,000**	**Total Salvage Value Costs**	**$159,000**
			Design Engineering (10%)	$78,600		
			Construction Services (7%)	$55,020		
			Admin Services (5%)	$39,300		
			Grant Writing & Admin Services (10%)	$78,600		
			Legal Services	$10,000		
			Property Acquisition	$15,000		
			Pilot Study	$20,000		
			Total (rounded to nearest 1000)	**$1,083,000**		

Clearwater Water District						
Alternative 3 – Utilize Existing Distribution System with Two New Ground Water Wells						
Preliminary Cost Estimate						
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**	**Salvage Value**	
Costs from Well Report*						
Construction	1	LS	$137,000	$137,000		$28,000
Engineering & Legal	1	LS	$70,000	$70,000		
			Subtotal Well Costs*	**$207,000**	**Subtotal**	**$28,000**
Additional Items						
Sanitary Survey Deficiencies	1	LS	$10,000	$10,000		$2,500
Backup Power Generator	1	LS	$3,000	$3,000		$750
Meters w/ Meter Pits	48	Ea	$1,125	$54,000		$13,500
Additional Mobilization (5%)				$3,350		
			Subtotal Additional Items	**$70,350**	**Subtotal**	**$16,750**
			Total (rounded to nearest 1000)	**$277,000**	**Total Salvage Value Costs**	**$45,000**

* Costs for wells were taken from Wyatt & Associates 2010 Ground Water Assessment.

Clearwater Water District						
Alternative 5 – Combination Surface Water & Ground Water w/ Dual Distribution System						
Preliminary Cost Estimate						
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**	**Salvage Value**	
Mobilization for Distribution (5%)	1	LS	$21,100	$21,100		
HDPE Water Main, 1-1/2"	8,190	LF	$3.00	$24,570		$6,143
HDPE Water Main, 2"	5,415	LF	$3.25	$17,599		$4,400
HDPE Water Main, 3"	20,120	LF	$6.00	$120,720		$30,180
C 900 PVC Water Main, 4"	4,360	LF	$12.00	$52,320		$13,080
C 900 PVC Water Main, 6"	3,275	LF	$15.00	$49,125		$12,281
Fittings	1,000	Lbs.	$6.00	$6,000		$1,500
HDPE Service Lines, 1-1/2"	2,000	LF	$3.00	$6,000		$1,500
Water Service Connection to Main	48	Ea	$250	$12,000		$0
Curb Stop & Box	48	Ea	$425	$20,400		$5,100
Meters w/ Meter Pits	48	Ea	$1,125	$54,000		$13,500
Gate Valve & Box, 1-1/2"	2	Ea	$350	$700		$175
Gate Valve & Box, 2"	2	Ea	$400	$800		$200
Gate Valve & Box, 3"	6	Ea	$450	$2,700		$675
Gate Valve & Box, 4"	4	Ea	$500	$2,000		$500
Gate Valve & Box, 6"	4	Ea	$600	$2,400		$600
Air Relief Valves	6	Ea	$250	$1,500		$375
Filling Station Hydrants	10	Ea	$850	$8,500		$2,125
Pressure Reducing Valve	6	Ea	$5,000	$30,000		$7,500
Utility Crossings	1	LS	$5,000	$5,000		$0
Surface Restoration	1	LS	$5,000	$5,000		$1,250
	Subtotal Distribution System Costs			**$442,000**	**Subtotal**	**$101,100**
Mobilization for Tank (5%)	1	LS	$2,300	$2,300		
New Storage Tank	1	LS	$30,000	$30,000		$7,500
Tank Foundation	1	LS	$3,000	$3,000		$750
Control & Level Wiring to Tank Site	1	LS	$5,000	$5,000		$1,250
Transmission Main	100	LF	$15.00	$1,500		$375
Fittings	500	Lbs.	$6.00	$3,000		$750
Valve & Plumbing	1	Ea	$1,500	$1,500		$375
Surface Restoration	1	LS	$1,000	$1,000		$250
	Subtotal Tank Costs			**$47,300**	**Subtotal**	**$11,250**
Mobilization for Wells (5%)	1	LS	$4,500	$4,500		
Drill Two Wells (500'each)	2	Ea	$20,000	$40,000		$10,000
Install 55 gpm Pump	2	Ea	$12,500	$25,000		$6,250
Electrical & Installation	2	Ea	$3,000	$6,000		$1,500
Backup Power Generator	1	LS	$3,000	$3,000		$750
Connect to System	2	Ea	$2,500	$5,000		
Small Building	1	Ea	$10,000	$10,000		$2,500
Add Chlorination to Well	2	Ea	$2,500	$5,000		
Initial Water Testing	2	Ea	$6,500	$13,000		
	Subtotal Well Costs			**$111,500**	**Subtotal**	**$21,000**
	Total (Distribution, Tank, & Well)			**$600,800**		
	Contingency (15%)			$90,120		
	Total Construction Estimate			**$690,920**	**Total Salvage Value Costs**	**$133,000**
Design Engineering (10%)				$69,092		
Construction Services (7%)				$48,364		
Admin Services (5%)				$34,546		
Grant Writing & Admin Services (10%)				$69,092		
Legal Services				$10,000		
Property Acquisition				$15,000		
Total (rounded to nearest 1000)				**$937,000**		

* Costs for wells were taken from Wyatt & Associates 2010 Ground Water Assessment and modified slightly to account for shallower drilling depths for this alternative.

Clearwater Water District				
Operation & Maintenance Costs				
Alternate 2 - Dual Distribution System w/ Smaller Membrane System				
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Administrative Costs		LS		$4,300
Operation Costs		LS		$18,500
Line Costs/Repairs		LS		$5,000
Personnel Costs	150	Hr	$30	$4,500
Prof. Services		LS		$500
Additional Electric	120,000	Kw-hr	$0.10	$12,000
Electric Demand Charges		LS		$4,000
Annual Membrane Cost		LS		$9,000
Chemicals (includes chlorination pellets)		LS		$22,850
Pre Filter Cartridges	2	Each	$360	$720
Water Testing		LS		$3,500
Total Annual Operating & Maintenance Costs				$84,870
Interest Rate =	0.04			
Present Worth for 40 Years @ 4.0%				$1,680,000

Alternate 3 - Existing Distribution System w/ Two Ground Water Wells				
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Administrative Costs		LS		$4,300
Operation Costs		LS		$7,500
Line Costs/Repairs		LS		$5,000
Personnel Costs	75	Hr	$30	$2,250
Prof. Services		LS		$500
Electric	20,000	Kw-hr	$0.10	$2,000
Water Testing		LS		$1,200
Total Annual Operating & Maintenance Costs				$22,750
Interest Rate =	0.04			
Present Worth for 40 Years @ 4.0%				$450,000

Alternate 5 - Combination Surface Water & Ground Water w/ Dual Distribution System				
Description	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Administrative Costs		LS		$4,300
Operation Costs		LS		$10,000
Line Costs/Repairs		LS		$5,000
Personnel Costs	75	Hr	$30	$2,250
Prof. Services		LS		$500
Additional Electric	20,000	Kw-hr	$0.10	$2,000
Water Testing		LS		$1,200
Total Annual Operating & Maintenance Costs				$25,250
Interest Rate =	0.04			
Present Worth for 40 Years @ 4.0%				$500,000

Appendix F – Public Involvement Documentation

DRAFT PREFERRED ALTERNATIVE
PUBLIC MEETING

NOTICE IS HEREBY GIVEN: Members of the Clearwater Water District and interested community members are invited to attend a public meeting for the presentation and discussion of the draft Preferred Alternative for the Clearwater Water District - Water System Study Addendum on Saturday, January 21, 2012 at 1:00 p.m. at the Clearwater Grange Hall.

This draft has been developed by TD&H Engineering, at the request of the Clearwater Water District Board, for the purpose of evaluating and providing recommended improvements to the District's existing water distribution and treatment system. This draft will be available for viewing at the public meeting.

The public comment period is January 4, 2012 to February 4, 2012. Written comments may be submitted by: comment cards available at the public meeting; USPS at P.O. Box 314, Stites, ID 83552; or email at clearwaterwaterdist@gmail.com.

Special accommodations or alternative formats for non-English speaking persons and persons with disabilities will be available, upon request, by contacting the Water District at (208) 926-4278 or TD&H Engineering at (208)746-0938 by email at least five (5) days prior to the scheduled meeting.
Dated: this 27th day of December 2011
/s/ LYLE SMITH
Chairman, Board of Directors
Clearwater Water District

By: Heather Calkins
TD&H Engineering

Clearwater Water District
Water System Improvements
Public Meeting for Presentation and Discussion

Overview

The Clearwater Water District owns and operates a water treatment and supply service for the surrounding community; providing water for domestic use, irrigation, and livestock watering. As of 2005, the Idaho Department of Environmental Quality (IDEQ) has found the Clearwater Water District to be in violation of the Idaho Rules for Drinking Water due to excessive levels of turbidity and disinfection by-products (DBP's). There is currently a "Stipulated Judgement and Order" against the District requiring that they comply with water quality standards.

The Clearwater Water District Board has been proactive in remedying this situation. TD&H Engineering has evaluated the existing treatment plant and distribution system and is preparing an amendment to the District's 2005 Water System Study. The purpose of the amendment is to provide recommendations for system improvements that will bring the District into compliance. Several improvement alternatives were developed and evaluated. A draft Water System Study Amendment was then prepared with a recommended alternative. A public meeting will be held on January 21st, 2012 to present the draft amendment and recommended alternative for public review and comment. With public feedback, TD&H will finalize the amendment for submittal to IDEQ.

Public Meeting Notice

You are invited to attend a public meeting to review and comment on the recommended alternative for water system improvements.

Saturday, January 21, 2012
1:00pm to 3:00pm
Clearwater Grange Hall
Clearwater, ID

Initial Screening of Alternatives

While exploring improvement options that would bring the District's water system into compliance, TD&H has considered alternatives that utilize the existing surface water source, Wall Creek, for water supply as well as alternatives that have a ground water source through the drilling of new wells. The initial alternatives considered were:

Alternative 1: Construct a new membrane filtration system for treatment of the current surface water source and continue to utilize the existing distribution system for both domestic and irrigation/livestock water supply.

Alternative 2: Construct a new membrane filtration system for treatment of the current surface water source for domestic water only. This membrane filter would be smaller than that required with Alternative #1. Construct a new, small diameter distribution system to provide domestic water only. Continue to use the existing surface water source and existing distribution system for irrigation/livestock water.

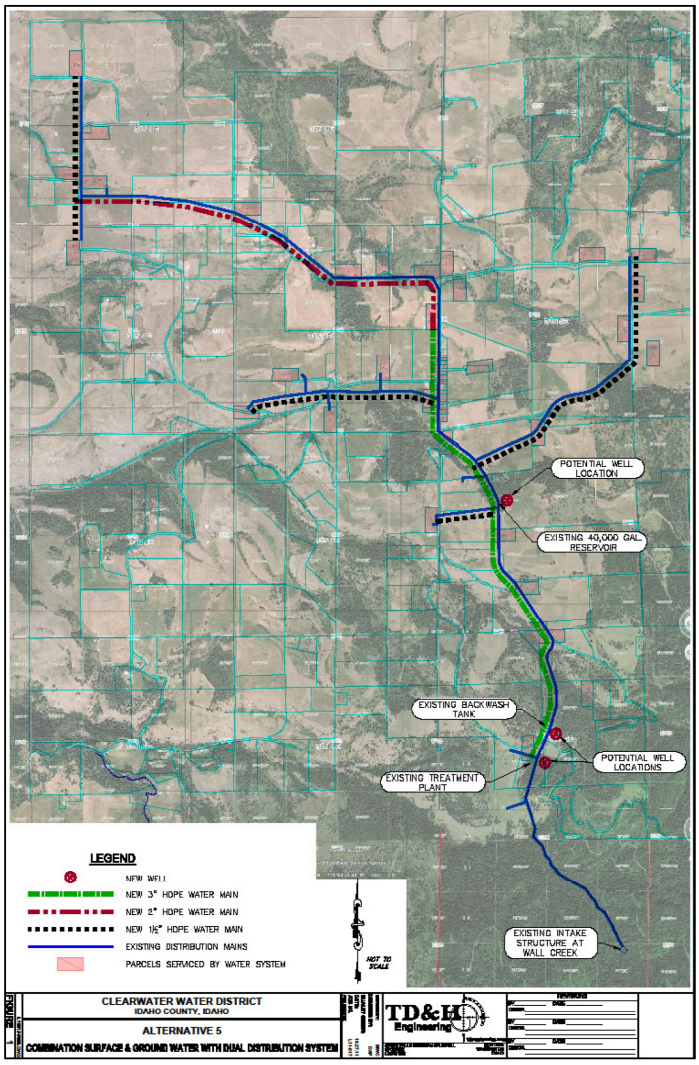
Alternative 3: Drill new wells to provide a ground water source for public water supply. The existing surface water source will no longer be used. Utilize the existing distribution system for both domestic and irrigation/livestock water.

Alternative 4: Drill new wells to provide a ground water source for public water supply. The existing surface water source will no longer be used. Construct a new, small diameter distribution system to provide domestic water only. The existing distribution system would be used to supply irrigation/livestock water only.

Alternative 5: Drill new wells to provide a ground water source for domestic only water supply. Wells would not require as high a production rate as the wells in Alternatives 4 and 5. Construct a new, small diameter distribution system to supply domestic water only. Continue to utilize the existing surface water source and distribution system for irrigation/livestock water only.

Recommended Alternative

Alternative 5 is the *recommended* alternative contingent on the availability of funding for this level of capital expenses. The advantages and disadvantages of this alternative are listed below.



Advantages

- A new distribution system for domestic supply.
- Leakage concerns addressed and compliance with DEQ's unaccounted water could be met.
- Utilizing high quality groundwater supply would likely eliminate the need for treatment.
- Operational complexity would be minimized.
- Regulatory complexity and compliance issues would be minimized.
- Quantity of groundwater supply would be minimized thus increasing odds that available supply would be sufficient to meet the District's needs.
- The District should be able to maintain their existing surface water right.
- Leakage and breaks on existing piping network would be less critical since it would serve only non-domestic demands
- Quantity of groundwater supply would be minimized thus increasing odds that available supply would be sufficient to meet the District's needs.

Disadvantages

- Capital cost is significantly higher than Alternative 3.
- Some risk that the groundwater quantity or quality may not be as expected. Some costs will need to be incurred in order to verify both quantity and quality.
- Water rights would need to be secured for new groundwater system.
- More piping infrastructure to maintain (domestic and non-domestic).

Public Meeting for Comments

Members of the Clearwater Water District and interested community members are invited to attend a public meeting for the presentation and discussion of the draft Water System Study Amendment and recommended alternative on **Saturday, January 21, 2012 at 1:00pm at the Clearwater Grange Hall**.

The public comment period is January 4, 2012 to February 4, 2012. Written comments may be submitted on comment cards available at the public meeting, or submitted via USPS or email.

Mailing Address: Clearwater Water District
P.O. Box 314
Stites, ID 83552

Email Address: clearwaterwaterdist@gmail.com

Special accommodations or alternative formats for non-English speaking persons and persons with disabilities will be available, upon request, by contacting the Water District at (208)926-4278 or by email at least five (5) days prior to the scheduled meeting.

Clearwater Water District - Water Study Addendum

Public Meeting

January 21, 2012

Heather Calkins TDH

Name	Address
Dick Wyatt	WYATT & ASSOC
Susanne Smith	Clearwater
JOHN K. WOOD	CLEARWATER
Maggie & Richard Schaack	
Dennis Bishop	
Bill & Gloria Jacks	
David Straw	Clear-water-
Bill Lane	
Bill McAfee	Hangman Rd
Mary Keller	
Tom Keller	637 Pleasant Valley Rd.
Bill Horn	163 Clearwater Mn St.
DON & MYRNA DeHaas	
MAGGIE EACRET	
Don McLean	139 McLean Ln.
John Hardin	
Leslie Lynn	
Johnny Wil	
Chuck McCulley	

Clearwater Water District - Water Study Addendum

Public Meeting

January 21, 2012

Name	Address
Bernadette Straw	
C	
Carole [illegible]	
DAN SAMPSON (SP?)	
Orville N. Martin	
Vivian Young	
Jim Young	
[illegible]	

Water System Study

Clearwater Water District, Idaho

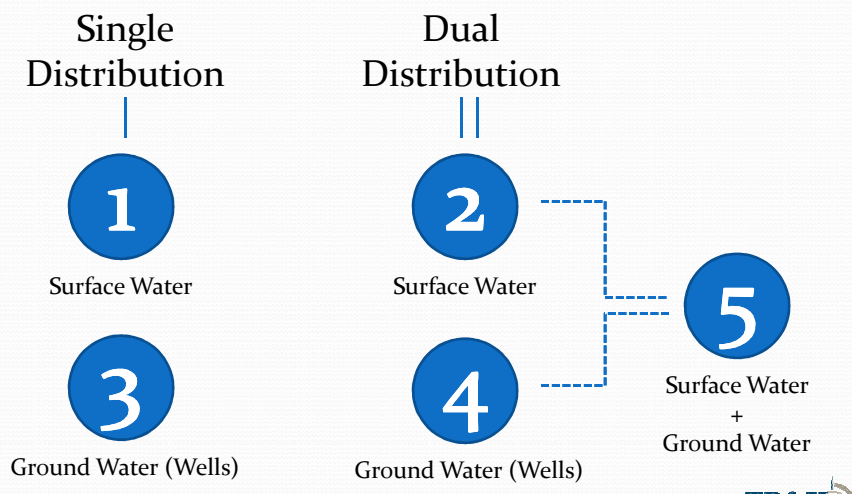
January 21, 2012

TD&H Engineering

Why Do Anything, Anyway?

- Seasonal Failure to Meet Turbidity Requirements
- Disinfection Byproducts Exceed Maximum Allowable Levels
- Documented Excessive Leakage Levels
- Aging System = Constant Maintenance

Overview of Alternatives



Distribution System: Single vs. Dual

Single

+ Already there (less initial cost)
+ Only one meter required

- Domestic and irrigation in same pipe (more water to treat)
- Same price for domestic and irrigation water

Dual

+ Less treated water (if treatment required) = less long term cost
+ More reliability for domestic water

- Twice as many meter readings (meters on domestic and irrigation)
- Higher up-front cost

Water Supply Options

Surface Water

+ Already there (less initial cost)
+ Known commodity (you know how much water is available)

- Additional treatment is required (high cost)
- VERY stringent DEQ regulations

Ground Water

+ Good quality water requires no treatment
+ Less testing costs
+ Fewer regulations

- Actual production is unknown
- Requires additional property

Evaluation of Alternatives

1

Single Distribution + Surface Water

- Requires additional treatment (larger membrane filter)
- Water meters required at each property

Evaluation of Alternatives

2

Dual Distribution + Surface Water

- Requires additional treatment (smaller membrane filter)
- Water meters required at each property for both domestic and irrigation supplies

Evaluation of Alternatives

3

Single Distribution + Ground Water

- No treatment required (no surface water)
- Requires two new wells
- Water meters required at each property

Evaluation of Alternatives

4

Dual Distribution + Ground Water

- No treatment required (no surface water)
- Requires two new wells
- Water meters required at each property for both domestic and irrigation supplies

Evaluation of Alternatives

5

Combined Supply

- No additional treatment required
- Requires two new wells
- Water meters required at each property for both domestic and irrigation supplies

Evaluation of Alternatives

Engineer's Recommendation

1 Single Distribution + Surface Water

2 Dual Distribution + Surface Water

3 Single Distribution + Ground Water

4 Dual Distribution + Ground Water

5 Combined Supply

TD&H Engineering

Funding Options

- Existing District Funds
- Sale of Revenue Bonds
- Sale of General Obligation Bonds
- Create a Utility Local Improvement District (LID)
- USDA Rural Development (RD) Grants or Loans
- State of Idaho Dept. of Environmental Quality (DEQ) Grants or Loans
- Water Resources Board (WRB)
- Community Development Block Grant (CDBG)

The District has a pre-approved loan of $116,000 through RD

TD&H Engineering

Project Costs

Task	Estimated Costs
Construction	$529,000
Engineering & Inspection	$132,000
Grant & Loan Administration	$60,000
Bonds & Legal	$10,000
Land Purchase	$15,000
Subtotal	$746,000
Contingency	$72,000
Total Project Costs	**$818,000**

Project Funding

Funding Source	Amount
Rural Development Loan (2.25% for 40 years)	$205,000
Rural Development Grant	$313,000
Idaho Community Block Grant	$300,000
Total Funding	$818,000

User Rates

	Annual Debt	Monthly Debt	Monthly Per User Cost
Bond Repayment (40 year loan)	$7,763.00	$646.92	$13.48
10% Debt Service	$776.30	$64.69	$1.35
1st Year DEQ Water Testing	$1,275.00	$106.25	$2.21
Existing System O&M	$20,000.00	$1,666.67	$34.72
New System O&M	$20,000.00	$1,666.67	$34.72
Totals	**$49,287.40**	**$4,107.28**	**$86.48**

Questions?

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

- ☒ Domestic use (drinking water, household use)
- ☐ Irrigation/Livestock
- ☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☒ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

- ☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration
- ☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration
- ☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells
- ☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

_____

_____

_____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use) ~~Lawn~~ Maintenance

☒ ~~Irrigation/Livestock~~ Lawn & Garden

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

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Are you in agreement with this recommendation? ☒ Yes ~~☒~~ No

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Additional Comments: _____

_____

_____

_____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: We missed the meeting so not exactly sure if #5 is truly the best. The increase of just under $200 annually is quite steep.

Lynn & MaryAnn Blees

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

John Gunter
113 Gunter Rd
Clearwater, ID
83552

Are you currently connected to the Clearwater Water District system? ☒Yes ☐No

If yes, is this your only water source? ☒Yes ☐No

If you are connected to the District's system, please check all water uses that apply to you:

☒Domestic use (drinking water, household use)

☒Irrigation/Livestock

☐None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐Yes ☐No

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☐Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: Lyle,
Don't Forget, I have lots of
Water
John

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Tom & Mary Keller
637 Pleasant Valley Rd
Stites, ID
83552

Are you currently connected to the Clearwater Water District system? ☒Yes ☐No

If yes, is this your only water source? ☐Yes ☒No

If you are connected to the District's system, please check all water uses that apply to you:

☒Domestic use (drinking water, household use)

☒Irrigation/Livestock

☐None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐Yes ☐No

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☐Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: See attached comments.

Clearwater Water District
P.O.Box 314
Stites, ID
83552

Dear Board Members,

We are generally in favor of alternative five because it appears to solve the problems facing the Clearwater Water District with regard to the local municipal water system.

Our preference would have been to leave the system as it is except for replacement of the existing distribution lines. However, we recognize that is not possible given the federal and state governments insistence that all municipal water systems comply with current water quality standards.

Our biggest concern is whether or not the Clearwater Water District can afford $49,287 per year to service their annual debt if they implement alternative five.

Even if all the current water patrons agreed to pay $86.48 per month and were diligent about making their monthly payment, it seems questionable as to whether or not $49,287 would come in annually. The Water District cannot afford to lose even one of their current water patrons if they expect to receive the required annual revenue. It is obvious that some of the current water patrons want nothing to do with the Clearwater Water District and would quickly opt to have their water hookup disconnected if they could. Whether or not there are other people willing to connect to the system in sufficient number to offset those wanting to disconnect, is unknown.

Before the Clearwater Water District can move ahead with implementation of the alternative five, it will be absolutely necessary to be certain there will be at least $50,000 of income available each year in order to pay for the costs associated with implementing alternative five. We believe the answer to that question will be extremely difficult to determine.

We will continue to participate as Clearwater Water District members, but we are not willing to encumber ourselves financially beyond a reasonable monthly fee for water usage, or our land in order for the Water District to obtain a Rural Development loan. It is our understanding the Water District is not asking for anything from its members other than continued participation as water patrons.

Sincerely,

Tom & Mary Keller
637 Pleasant Valley Rd
Stites, ID 83552

Do #223

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☐ Domestic use (drinking water, household use)

at this time – ☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

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Are you in agreement with this recommendation? ☒ Yes ☐ No

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☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: How many wells could be put side by side down main street & everyone get adequate water? Where could they put all these wells without danger from sewer contamination? Do all the lots have room for a well along with the sewer lines (Septic)

PO BOX 549
GRANGEVILLE, ID 83530
(208) 983-2356 Office
(208) 983-2358 Fax
barbara@svdrilling.com

ESTIMATE

DATE: January 24, 2012

NAME: Merna DeHaas
208-983-0155
m2rabbit@mtida.net

LOCATION: Clearwater, Next to Lyle Brotnov

QUANTITY	UNIT	DESCRIPTION	PRICE EACH	TOTAL
300	FT	8" Drilling	$ 18.00	$ 5,400.00
60	FT	8" Steel Casing	$ 26.00	$ 1,560.00
280	FT	4½" PVC Liner	$ 4.75	$ 1,330.00
1	EA	8" Drive Shoe	$ 250.00	$ 250.00
1	EA	8" Well Cap	$ 130.00	$ 130.00
1	EA	Permit	$ 75.00	$ 75.00
30	BAG	Bentonite	$ 10.00	$ 300.00
1	HR	Surface Seal	$ 350.00	$ 350.00
Well Subtotal				$ 9,395.00
Pump Estimate (This is just to put water to the top of the well.)				$ 2,625.00
TOTAL				**$ 12,020.00**

This estimate is for completing the job as described above. It is based on our evaluation and does not include material price increases or additional labor and materials which may be required should unforeseen problems or adverse weather conditions arise after the work has started. All prices are good for 45 days.

$100 per mo for 10 years (without interest)
Doesn't include pressure tank.
Interest charges depend on credit rating & debt to income. The credit Union will only give a personal loan for 72 months. Right now the rate is 11½%. $12000 loan at these rates would cost $263.92 per mo. for 5 years. Our last

pump lasted less than 10 years.
(NOTE) If you have a line of credit on your home you could possibly use that for financing & you would probably be looking at close to 5% interest & could stretch your payments to 10 yrs. giving you a monthly payment of $127.00 meaning you'll pay out about $3220 in interest for a total of $15,240. Compare to credit union fees of $6982 for a total of $19,000. (If you get water at 300 ft!)

John Hardin

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☐ Yes ☒ No

If you are connected to the District's system, please check all water uses that apply to you:

- ☒ Domestic use (drinking water, household use)
- ☒ Irrigation/Livestock
- ☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☒ No

If you are not interested in receiving water from the District, please explain why not: _____

Have my own well

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☒ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

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Additional Comments: _____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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Additional Comments: _____

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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Additional Comments: _____

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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Additional Comments: _____

_____

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10 of

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

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If you are connected to the District's system, please check all water uses that apply to you:

- ☒ Domestic use (drinking water, household use)
- ☐ Irrigation/Livestock
- ☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No Depends on price

If you are not interested in receiving water from the District, please explain why not: _____

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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Additional Comments: _____

_____

_____

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? [X] Yes [ ] No

If yes, is this your only water source? [X] Yes [ ] No

If you are connected to the District's system, please check all water uses that apply to you:

- [ ] Domestic use (drinking water, household use)
- [X] Irrigation/Livestock
- [ ] None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? [ ] Yes [ ] No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

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Are you in agreement with this recommendation? [X] Yes [ ] No

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Additional Comments: _____

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ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

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☒ Irrigation/~~Livestock~~

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☒ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: FOR THE GOOD OF THE COMMUNITY THE WATER SYSTEM MUST BE UPGRADED TO MEET THE DEQ'S REQUIREMENTS & TO MEET THE FIRE DEPT'S REQUIREMENTS RATING FOR CHEAPER INSURANCE.

Joel & Janet Hardin
225 Mill Rd
Clearwater ID
83552

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☒ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

_____

_____

_____

TRACKING STEP BY STEP... JOEL HARDIN PROFESSIONAL TRACKING SERVICES

225 Mill Road, Clearwater, Idaho 83552-5116 telephone 208-926-4390 Email: Joel@jhardin-inc.com

January 23, 2012

TO: TD&H Engineering
Clearwater Water District
P.O. Box 314
Stites, ID 83552

FR: Joel & Janet Hardin
225 Mill Rd.
Clearwater, ID 83552-5116

SUBJECT: Public Meeting Notice – Clearwater Water District – Comments

TD&H,

Janet and I agree with the TD&H recommendations of "Alternative 5" – dual, domestic and separate irrigation/stock water distribution to water district hook-ups.

Prior to any bonding issues discussion and public hearing:

We would like to see presented to the water district membership a notarized written statement signed by signatories of all parties of the legal action filed with and under jurisdiction of the District Court, which presently encumbers the water district. That, under the following conditions, 1) construction completion of Alternative #5 and; 2) satisfactory operation and initial satisfactory domestic water quality and quantity testing; the two conditions satisfy and fulfill all conditions and issues initiated and promulgated by any and all governmental agencies and all conditions and issues arising from all governmental agency actions or public service legal issues or complaints, filed with and under the jurisdiction of the District Court order which presently encumbers the Clearwater Water District.

Further, that all parties to any and all legal actions in regard to the Clearwater Water District agree that with the above conditions having been met and satisfied there are no further encumbrances or conditions by which any party, or federal or state agency has interest in, with, or concerning in any matter with the Clearwater Water District.

Further that there in, after and in regard to the foregoing legal encumbrances having been fully satisfied the Clearwater Water District is free to return to pre-legal encumbrance business in so long as the water district operates within the State of Idaho and County of Idaho guidelines for such independent water associations and districts.

QUESTION: Who pays for the individual homeowner hook-up costs? Who pays for the costs of running the new lines and installing the new domestic water system from the main line to and connected for use in the private home?

Thank you for the clear and full explanation of the five different alternative proposals.

Joel & Janet Hardin
225 Mill Rd
Clearwater ID
83552

ClearwaterWater District
Water System Improvements

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Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative. unsure on this one

Are you in agreement with this recommendation? ☐ Yes ☒ No w/ reservations

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☒ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: We need cost estimates on the other 4 alternatives to make our decision. We chose #1 for lack of more information, however we could change our minds depending on cost and other factors.

January 31, 2012

In response to your question of whether I'm in agreement with Alternative 5...it's not a yes or no answer. According to the estimates given this increases the annual payment about $200 a year. How reliable is this estimate? $200 a year is a large increase, but my fear is that it could be even more.

A couple of my bigger concerns is the fact that I own a share that is equal to anyone else's share and I pay the same annual rate as any other user, but it's my understanding that I don't have a vote because this isn't my primary residence. There's a problem with this picture. The second concern is the fact that users are in essence being held captive by the water district. A user who wants to separate from the district should have a right to do so. Even if the district decides to assess that user his portion of the unpaid "current", they should be allowed to leave the district and pursue alternatives. I say "current" debt because at this point that would probably be doable for users. It wouldn't be after the district goes into debt for another system whichever Alternative is chosen.

I have some doubts of being able to attract many new users for the reasons above. I realize that the district is being mandated to do make changes and improvements. That is beyond of the control of the district, however, the district set up the conditions that allow one to vote or not and to leave the district or not.

I will be looking forward to new information as it becomes available.

Mary Barker
T. H. Tholl account
Jericho Rd

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Jessi Miller
590 Country Rd 385
Valley View, TX
76272

Are you currently connected to the Clearwater Water District system? ☑ Yes ☐ No

If yes, is this your only water source? ☑ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☐ Domestic use (drinking water, household use)

☐ Irrigation/Livestock

Absent owner ☑ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☑ No

If you are not interested in receiving water from the District, please explain why not: To Expensive, dislike chlorine in water

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☑ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: Let property owners choose to be disconected from the water District water & have a Well for water use with the permission by the water District – No Fines of Any Amount.

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☐ No Still not Sure

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: There is still lot of ifs in this and more questions to be answered.

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☒ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

_____

_____

_____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☑ Yes ☐ No

If yes, is this your only water source? ☑ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☑ Domestic use (drinking water, household use)

☑ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____
Reverse

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☑ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

January 23, 2012

To Whom It May Concern:

This question of the Clearwater Water District is a difficult one to answer. As much as I hate to say this, I feel that the District has lived out its usefulness and needs to be dissolved.

I base this on the fact that in 1983 the establishment of the District was not properly executed. Over the years as I have attend the meetings, more and more information has been gleaned to the Patron; concerning major management issues not completed and or executed. These glaring errors have ramifications to us as property owners (i.e. the property descriptions were not legally surveyed, the fact that we were never filed with the State of Idaho as a taxing district, and it was never pointed out that we NO LONGER own this system . . . the State of Idaho owns it . . . once we voted "YES" to formulate a District, etc. etc.) The laundry list of "bungled jobs" just keeps getting longer! Why continue to "prop up" an organization that has no foundation.

The discord between the Board, the Patrons and the community has not changed in the last 30 years! This had left a mark in the community that can never be erased! Besides, the District Patron base had changed from families; . . . . to senior- senior citizens & absentee ownership. I sincerely question the District's ability to increase its user base given the "old- general feeling" about the Clearwater Water District. This together does not add up to a cohesive future for the District and its plans to upgrade.

The system was never originally intended as a portable water source and I feel that if the ranchers want to "take back their system" they should be allowed to do so under their own organization. As for potable water; I feel that the community of Clearwater should band together and seek grants to drill one or two community wells to provide water to the Clearwater Town site.

As for the rest of us, that do not all ready own a well, my research has led me to believe that there is grant money available through the Farm Service Agency to establish water on agricultural property.

Please understand, I have nothing but respect and admiration for the present Board. You have chosen to take on heartache and stress of monumental proportion! For the years of keeping the water flowing, THANK YOU. I in no way lay the blame, for this crumbling mess, at your door. You have gone above and beyond what should be asked of from a group of volunteers! That is why I feel it is time to bring closure to the Clearwater Water District saga.

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☒ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☒ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: Use existing SURFACE WATER with 25,000 GAL STORAGE TANK - GRAVITY FLOW WATER, TO MAINTAIN PRESENT WATER RIGHTS, AND SECURE OF FUTURE USDA SPECIAL USE OF WALL CREEK

✓

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☐ Yes ☒ No

If you are connected to the District's system, please check all water uses that apply to you:

- ☒ Domestic use (drinking water, household use)
- ☒ Irrigation/Livestock
- ☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: We have a well already. The cost is getting too high for us to pay. If the monthly cost increases, we won't be able to afford it.

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

- ☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration
- ☒ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration
- ☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells
- ☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: See above.

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☒ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☒ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☒ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: The feasibility of drilling wells, in my opinion, is too much of a financial risk considering the age of our customers. We need to use as much of our present resources as possible to avoid the future potential of levy of taxation

Thank You!

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒ Yes ☐ No

If yes, is this your only water source? ☒ Yes ☐ No

If you are connected to the District's system, please check all water uses that apply to you:

☒ Domestic use (drinking water, household use)

☒ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☐ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☒ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

_____

_____

_____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Are you currently connected to the Clearwater Water District system? ☒Yes ☐No

If yes, is this your only water source? ☒Yes ☐No

If you are connected to the District's system, please check all water uses that apply to you:

☒Domestic use (drinking water, household use)

☒Irrigation/Livestock

☐None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐Yes ☐No

If you are not interested in receiving water from the District, please explain why not: _____

_____

_____

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐Yes ☒No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

☐Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☒Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: _____

_____

_____

_____

ClearwaterWater District
Water System Improvements

Public Meeting
January 21, 2012

Martin
235 Jericho Rd
Kooskia, ID
83539

Are you currently connected to the Clearwater Water District system? ☑ Yes ☐ No

If yes, is this your only water source? ☐ Yes ☑ No

If you are connected to the District's system, please check all water uses that apply to you:

☑ Domestic use (drinking water, household use)

☑ Irrigation/Livestock

☐ None – I do not use the service

If you are not currently connected to the District's system, are you interested in connecting in the future? ☐ Yes ☐ No

If you are not interested in receiving water from the District, please explain why not: Not interested, would like To get off District To much expense, I do not need District, we use our well's quite abit.

The District's engineer has selected Alternative 5 – Combination Surface Water and Ground Water with Dual Distribution System – as the recommended alternative.

Are you in agreement with this recommendation? ☐ Yes ☑ No

If no, which Alternative are you in favor of?

(Note: "Do Nothing" is not a viable option since the Water District is out of compliance with State drinking water regulations)

Neither

☐ Alternative 1 – Existing Distribution System w/ Large Scale Membrane Filtration

☐ Alternative 2 – Dual Distribution System w/ Smaller Membrane Filtration

☐ Alternative 3 – Existing Distribution System w/ Two Deep (High Production) Wells

☐ Alternative 4 – Dual Distribution System w/ Two New Lower Production Wells

Additional Comments: We will never be able To keep up with EPA - DEQ requirements, which are always changing To accomodate keeping their office's.

CLEARWATER WATER DISTRICT

P.O. BOX 314

STITES, IDAHO 83552

BOARD OF DIRECTORS –SPECIAL MEETING

February 07, 2012

Meeting was called to order by Chairman Lyle Smith.

Board Members present were Vinal Hardin, Leslie Lynn, and John Wood.

The Board of Directors held a Special Meeting to review the public comments and to make a recommendation as to which Alternative they supported.

Lyle Smith, Chairman, made the motion to support Alternative #5.

The Board voted 3- Yes, 0- No;

Motion Carried.

Let the Record Reflect: The Board of Directors hereby approve and support Alternative #5 – Ground Water System for Potable water with Surface System utilized as Irrigation.

Secretary	Chairman	2-6-12 Date

Cc: Heather- TD&H Engineering

Dick – Wyatt & Associates