EXHIBIT 11
DATE Jan 16, 07
11

Ravalli County FY 2007 MFI: 47600

HOUSEHOLD SIZE	1 P	2 P	3 P	4 P	5 P	6 P	7 P	8 P
EXTREMELY LOW INCOME	10250	11700	13200	14650	15800	17000	18150	19350
LOW INCOME	17100	19550	22000	24450	26400	28350	30300	32250
MODERATE INCOME	27350	31300	35200	39100	42250	45350	48500	51600

Income Study Results – Town of Stevensville:

A. There is 1 person in my household and my total gross annual household income is:

31	above $27,350.00	
27	below $27,350.00	
82	below $17,100.00	
TOTAL		**140**
Subtotal LMI		**109**

B. There are 2 people in my household and our total gross annual household income is:

92	above $31,300.00	
36	below $31,300.00	
19	below $19,550.00	
TOTAL		**147**
Subtotal LMI		**45**

C. There are 3 people in my household and our total gross annual household income is:

18	above $35,200.00	
9	below $35,200.00	
11	below $22,000.00	
TOTAL		**38**
Subtotal LMI		**20**

D. There are 4 people in my household and our total gross annual household income is:

18	above $39,100.00	
7	below $39,100.00	
6	below $24,450.00	
TOTAL		**31**
Subtotal LMI		**13**

E. There are 5 people in my household and our total gross annual household income is:

3	above $42,250.00	
6	below $42,250.00	
6	below $26,400.00	
TOTAL		**15**
Subtotal LMI		**12**

F. There are 6 people in my household and our total gross annual household income is:

1	above $45,350.00	
1	below $45,350.00	
2	below $28,350.00	
TOTAL		**4**
Subtotal LMI		**3**

G. There are 7 people in my household and our total gross annual household income is:

0	above $48,500.00	
1	below $48,500.00	
0	below $30,300.00	
TOTAL		**1**
Subtotal LMI		**1**

H. There are 8 people in my household and our total gross annual household income is:

1	above $51,600.00	
0	below $51,600.00	
1	below $32,250.00	
TOTAL		**2**
Subtotal LMI		**1**

Subtotal LMI Percent	**50%**
TOTAL surveys mailed out: (100% of occupied units and households)	**834**
TOTAL surveys received:	393
TOTAL surveys received which were not applicable (not signed or completed):	15
TOTAL surveys valid received:	**378**
TOTAL LMI Households	**201**
TOTAL LMI Percentage	**57%**
TOTAL Households	**834**
TOTAL LMI Households Based on the Income Survey (834 x 57%)	**475**

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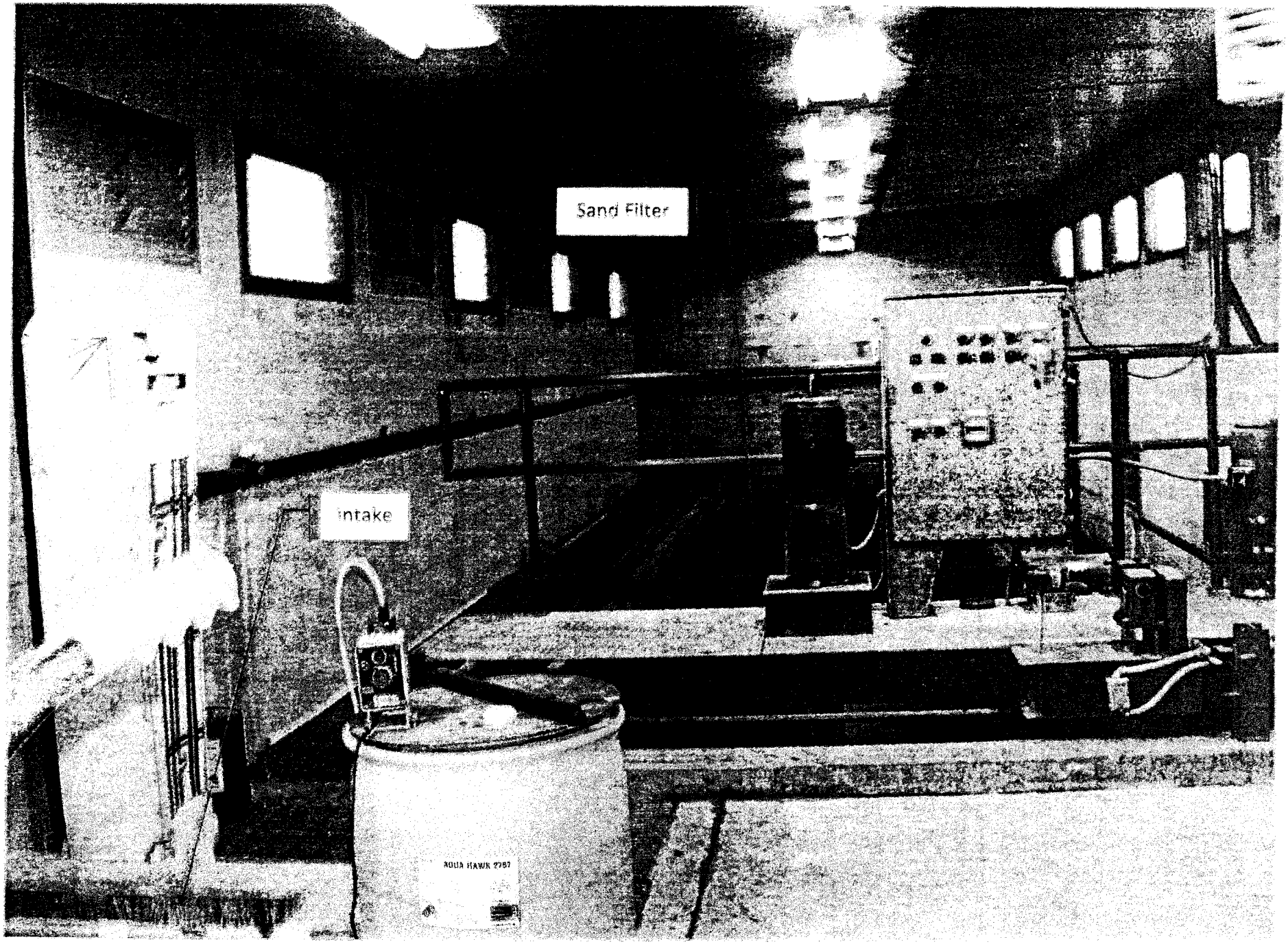
Water intake with live fish.



Stevensville Water Treatment Facility.

EXHIBIT 11
DATE Jan 16, 09
HB 11

FUNDING REQUEST FOR THE TOWN OF STEVENSVILLE WATER REHABILITATION PROJECT

Historical Information:

The town's water supply was originally constructed in 1909 with a wooden pipe bringing water into town directly from Mill and North Swamp Creeks. In the 1930's a subterranean infiltration gallery was constructed to collect shallow groundwater in lieu of direct surface water. Then in 1977 a rapid sand filter was constructed for further filtration of the collected water. In addition, three groundwater wells were developed for summertime use dating from 1958, 1968, and 1976. There have been no significant or substantial improvements to the water system since 1977.

Problem:

The continually aging and antiquated water system along with drastic changes in the Federal Drinking Water Standards and significant population growth have all combined to reveal the critical need for additional improvements and upgrades to the town's water system. A Water and Sewer Facilities Plan, adopted by the Town in July 1996, outlined needed improvements to the water and wastewater systems. Upgrades of the wastewater treatment plant were funded and accomplished in the year 2000, but no improvements to the water system have been funded. In June 2004, the Town of Stevensville commissioned Professional Consultants, Inc., of Missoula and Hamilton, to inventory and study the town's water supply, treatment and distribution system and prepare a Preliminary Engineer's Report (PER) in compliance with the Uniform Application for Montana Public Facility Projects. The PER was adopted in June, 2006 and updated September, 2007. Below is a summary of key deficiencies noted in the PER:

- Un-metered users…difficult to ascertain true "unaccounted" for water, a typical un-metered user has little incentive to conserve, metered users allow town to collect revenue on all delivered water.
- Water Leaks…water losses are estimated at over 350,000 gallons per day (or 243 gallons per minute) and equate to ~40% of the annual production, water usage per connection is nearly double the regional average, this lost water equates to an approximate 40% loss in revenue.
- Source Water…is marginal adequate given current system demands, currently the largest source (infiltration gallery) is the most susceptible to shutdowns and contamination and needs to be replaced with a more reliable and protected water supply, the three (3) remaining water supply wells do not comply with current state regulations and pose significant deficiencies.
- Public Health & Safety…leaks in the distribution network elevate the risks to system wide contamination, the existing rapid sand filter and infiltration gallery do not meet current and/or future EPA treatment requirements, the largest source (infiltration gallery) is the most susceptible to shutdowns and contamination, the three (3) remaining water supply wells do not comply with current state regulations and pose significant health risks (see attached sanitary survey), the current system falls short of the Montana Department of Environmental Quality standards related to water supply & storage.
- Insufficient Storage Volume…the existing 430,000 gallon storage tank does not meet either the ISO storage requirements or the projected 20 year growth demands.
- Fire Flows…the 1996 ISO study requested a goal of 3000 gpm at the school, 3500 gpm downtown and 1000 gpm in residential areas, the existing water system is only capable of producing ~ ½ of the requested flows.

Solution:

The PER evaluated the existing water system and considered numerous alternatives to remedy the numerous system deficiencies mentioned above. In developing the optimal solution a three (3) phased plan of action was suggested as the preferred alternative. The town has begun work on several Phase I activities with monies from their operating budget. Additionally, a portion of the activities indentified in Phase I, have been completed/identified by a recently annexed subdivision into the town (i.e developing a test well, identifying a viable well field, and a site for the construction of the water storage reservoir). While a portion of Phase I activities remain the bulk of the project costs lie ahead in Phase II and Phase III. Below is a summary of the remaining work to be completed as outlined in the PER (items of work remaining have been correlated to the respective Phase as identified in the PER):

- Install new water meters on all un-metered connections and add remote read out capabilities to existing meters for accounting purposes (Phase II)
- Install new adequately sized water main(s) to properly abandon outdated wooden main and leaking water mains thereby reducing water loss, increasing public health and safety and improving fire flow conditions (Phase II & Phase III)
- Abandon existing infiltration gallery, rapid sand filter, and non-complaint wells in favor of developing a consolidated well field on an already identified site (Phase III)
- Develop a new 1 MG gallon reservoir to provide adequate storage for ISO requirements and 20 year projected growth (Phase III)

Why fund this project??

The town understands funding for these types of projects is very limited and is extremely competitive in nature. However, we feel this project is unique in nature for several key reasons and therefore should be considered for funding. Below is a summary of the key reasons funding should be considered for this project:

- We understand there were concerns expressed by TSEP and RRGL related to the PER and funding applications, regardless this does not take away from the day-to-day problems and public health and safety threat the existing system (without improvements) poses to the citizens of Stevensville both now and in the future. Corrections are underway to clarify the shortcomings of the PER and the funding applications.

- 33% of the town's constituents are considered to be below the federal poverty guidelines based on a 2008 salary survey conducted.

- 57% of the town's constituents are considered to be "low to moderate" income based on a 2008 salary survey conducted.

- The town's current combined water/sewer rate exceeds the target rate of $53.57/month.

- Considering the recommendations from TSEP and RRGL, we are currently working with other funding agencies to obtain a grant/loan package. The denial of TSEP and RRGL only widens the funding shortfall, thus further increasing the water/sewer rates to the constituents, which they simply cannot afford.

- There is an eminent need for the Town of Stevensville to receive funding assistance.

- Water losses are estimated at over 350,000 gallons per day (or 243 gallons per minute) and amount to 40% of the annual production. Based on the current rate structure, this lost water equates to a revenue loss in excess of $70k/year (this excludes the cost to collect, pump, treat and distribute the lost water, thus further widening the financial loss).

- The existing infiltration gallery and rapid sand filter provide the largest water source, yet remains the most susceptible to shutdown due to excessive turbidity. Additionally, the existing infiltration gallery poses a significant risk of contamination resulting from surface water susceptibility, upgradient agricultural practices, neighboring septic systems, bacteria and virus exposure. The current infiltration gallery, rapid sand filter and wells do not meet current EPA or state requirements, pending changes in regulations will only widen the compliance shortfall. The infiltration gallery and rapid sand filter should be replaced with new properly designed, constructed and tested groundwater wells for a more consistent and protected source.

- Installation of new adequately sized water main(s) will properly abandon the outdated wooden main and significantly reduce leaking water mains, increasing public health and safety and improving substandard fire flow conditions.

- Ravalli County has planned to re-construct Middle Burnt Fork Road since 2004. They were convinced to "wait" so that the Town of Stevensville could abandon the old wooden main and replace the extensively leaking (estimated at 144,000 gallons per day or 100 gpm) 8" main that lies under Middle Burnt Fork Road, prior to the county completing their road re-construction project. As a result Ravalli County has patiently waited on the Town of Stevensville to get their water project underway. As the road has continually deteriorated and after increasing pressure from local citizens Ravalli County understandably stated (December 2008), they are going forward with the re-construction of Middle Burnt Fork Road in 2009 regardless of the Town of Stevensville and their water project. Provided the Town of Stevensville can get the water main replaced in this segment of roadway, prior to the counties re-construction project, the town by one estimate could save $150-200k in re-habilitation costs to Middle Burnt Fork Road. Talks between Ravalli County and the Town of Stevensville are scheduled to continue on this matter in January 2009.

- Developing a new 1 MG gallon reservoir will provide adequate storage for ISO requirements and 20 year projected growth. The existing water system experienced temporary water shortages in times as recent as 2003. By not completing the water system upgrades, and based on the population projections, future water shortages will likely become more frequent and will become longer in duration.

- It becomes very difficult to promote community development and betterment projects in communities which lack sound infrastructure.

Conclusion:

As shown above it is clear the Town of Stevensville is in need of significant improvements to their aging water system. The system is currently serving approximately 2,000 residents. Funding of this project at this time will allow coordination with Ravalli County for the re-construction planned for Middle Burnt Fork Road in 2009, saving hundreds of thousands of taxpayer dollars. I thank you for your time and consideration in this matter.

Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

109 Cooperative Way • Suite 105 • Kalispell, MT 59901-2389 • (406) 755-8985 • FAX (406) 755-8977

EXHIBIT 11
DATE Jan 16, 09
HB 11

July 24, 2008

Stevensville, Town of
Mayor Bill Meisner
PO Box 30
Stevensville, MT 59870

Re: Sanitary Survey Inspection of Stevensville public water system (PWSID: #MT0000335).

Dear Mayor Meisner,

I would like to thank George Thomas for assisting me during the sanitary survey inspection of the Stevensville water system. As a community water supply system, your facility is required to have a sanitary survey inspection every three years. These regular inspections offer us an opportunity to look for sanitary deficiencies that have the potential to cause contamination in the water system, as well as pointing out operation and maintenance concerns. Below are a few comments relating to the sanitary survey conducted on 6/25/2008.

SOURCE(s)

IN002 (Intake North Swamp Creek and Mill Creek): This source intake collection system has been in place for a considerable period of time and is highly susceptible to runoff and heavy rains. Construction of the intake and caisson would have to be improved if they were required to meet current standards.

Well 1 (WL003 or North Well): This source is significantly deeper (460') than the other Stevensville wells and appears to be drawing from a confined aquifer (intake 362' to 370'). The 50 hp vertical turbine pump assembly has been replaced by a 50 hp submersible pump assembly with VFD controls near the beginning of 2007. It is capable of producing approximately 400 gpm.

- Well 1 produces a significant amount of sand which is pumped directly into distribution.
- I question the need for variable frequency drive (VFD) controls for well 1 since the well is controlled by the storage tank water level. (Water hammer could have been more economically addressed by installing an electrical soft start setup.)

Well 2 (WL004): This source is located on South Ave – Mission St. and is 56' deep with the intake located at 36' to 56' below ground level. Static water level is 30' in this unconfined aquifer. Well 2 has a 20 hp submersible pump assembly that can produce approximately 220 gpm.

- Well 2 is located in a vault with no record of grouting.
- Well 2 does not have a meter to help determine production.
- Well 2 vault is vented through a vent pipe that is lower than the vault flood rim.
- Well 2 controls are located inside the vault and are lower than the flood rim.

- Well 2 is subjected to occasional high ground water. (High ground water is pumped to a nearby ditch via a sump pump.)
- Well 2 vault does not have a permanent ladder affixed to the wall.
- The access hatch to Well 2 does not have a raised collar or gasket hatch.
- Minimal security at Well 2, which is unfenced in a resident's yard.
- The Well 2 log (1968) shows a 3 hour test pump at 300 gpm and the pumping water level was drawn into the perforated intake section. Routine static water level and pumping water level should be routinely monitored to assure the PWL isn't being drawn into the perforated section.
- Manufacturer specifications require submersible pumps to be above the casing intake to accommodate cooling. A flow inducer sleeve should be installed over the submersible pump assembly if it's set below 36'.

Well 3 (WL005): This source is located near the cemetery in a residential area. It is 75' deep with two sections of casing perforations (40' to 50' and 55' to 75'). Static water level is 29' and currently has a 20 hp submersible pump assembly that is capable of producing 220 gpm.

- The well log (1976) shows a test pump at 70 gpm for 1 hour with a 1' drawdown. The current pump is capable of 220 gpm. Our DEQ PWS file in Kalispell did not show an additional pump test was performed to verify Well 3 has the capacity to safely produce 150 gallons more than the well log.
- Well 3 does not have a meter to help determine production.
- The split style well cap is not recommended for outdoor use because it's prone to leaking over a period of time. I recommend Stevensville purchase a quality well cap that more adequately protects the source from contaminants. Example enclosed.
- The control valve vault located next to Well 3 does not have a shoe box style hatch with gasket or ladder permanently affixed to the wall for access.
- The wellhead, control valve vault and electrical control panel are open to trespass and vandalism. Anyone walking past the electrical control panel could easily shut the main breaker off.
- Manufacturer specifications require submersible pump to be above the casing intake to accommodate cooling. A flow inducer sleeve should be installed over the submersible pump assembly if it's set below 40'. Again, static water level and pumping water level should be routinely monitored to assure the PWL isn't being drawn into the perforated section.

TREATMENT

Treatment Plant 1 (TP001): This is a single cell sand filter that adds alum, gas chlorine and orthophosphate. It is capable of producing approximately 800 gpm in optimal conditions. The filter bed has never been replaced and still has the original media (sand and pea gravel) that was installed in 1979. Backwashing is automatically triggered by floats and the treatment plant is off-line until complete. A small portable generator is available to operate chemical injection in the case of emergency. See attached schematic for chemical injection locations.

- Raw water enters the plant and flows through the complete treatment process (including chemical injection) and the finished product turbidity is measured prior to entering Stevensville's storage facility. An automatic bypass valve wastes the finished water prior to storage if it exceeds 0.30 NTU. Operators currently shut the treatment plant

down until raw water levels reach a more treatable level when the bypass is activated. This form of operation will have problems when held to LT1/LT2 standards.

- The gas chlorination room has an outlet fan that does not operate correctly. The chlorine fumes have completely eaten up the bottom of the door.
- The gas chlorination room does not have a panic bar on the door.
- A scale should be in place under the gas cylinders that are currently in use to verify chlorine use and reserve.
- Chlorine residual is measured immediately after the storage facility from a vault that is subject to high ground water. A small sump pump prevents the vault from flooding. There is an additional pump located in the vault that delivers water to the control room for monitoring chlorine residual. This pump has a history of losing prime which results in inaccurate residual readings and pump failure.

Treatment Plant 2 (TP002): This treatment plant is located at well 1 (WL003) and injects orthophosphate as a corrosion inhibitor prior to distribution.

- Perhaps the installation of a properly sized sand separator may be warranted since well 1 produces a substantial amount of sand.
- Montana DEQ PWS standards require any water treatment (such as orthophosphate injection) must be followed by disinfection. You may call Rachel Clark, P.E. in Helena to discuss this requirement (444-6722).

DISTRIBUTION: Distribution is primarily ductile iron and PVC.

- There are leaks in distribution but the extent isn't known because only about half the connections are metered.
- There are a few sections of Stevensville that have dead end lines and require routine flushing. There is also a few sections of undersized distribution. I suggest future projects address both the few areas that have these issues and plans accordingly for growth.

STORAGE: 500,000 gallon concrete storage tank with a pre-stressed concrete top. This facility helps achieve CT requirements for the surface water plant and is located immediately after TP001.

- The elevation of the treatment plant filter bed is lower than the storage facility overflow so it has not been needed since original construction. However, the overflow is still in place and the outlet location and condition (screened, flapper valve, etc.) are not known. The outlet location and condition needs to be determined to assure it does not provide access to a large range of contaminants (insects, rodents, etc.).
- The only situation where the storage facility overflow could be needed is if the wells were being used and the float switch failed. Even in this situation the overflow would not be needed unless the TP001 isolation valve was turned off. Otherwise, the water would flow back into the treatment building before it reached the storage tank overflow elevation.
- The storage facility roof is in need of new sealant.
- The area surrounding this partially buried concrete storage tank has confirmed high ground water levels as observed in the nearby chlorine monitoring vault. Regular cleaning and inspection of the concrete storage facility is important because

susceptibility of the storage tank to high ground water and whatever contaminants it contains. A crack in your concrete storage facility could just as easily let water flow in as out.

PUMPS, PUMP FACILITIES and CONTROLS:

- The submersible pump assemblies in wells 2 and 3 have been replaced 5 or 6 times since George began working for Stevensville in 1993. One of these times was a result of a lightning strike. However, the other replacements may be a direct result of installation outside manufacturer specifications (and DEQ standards) by placing the submersible pump assembly in or below the casing perforations without a flow inducing sleeve. George was not sure what depths the pumps were set at, but the SWL, PWL and perforation records suggest this is very possible. Increased failure rate occurs because water doesn't flow past the submersible motor to promote cooling as designed by manufacturer.
- Control vaults in areas of high ground water that subjects the facility to flooding are not allowed in Montana DEQ PWS standards. Stevensville currently has multiple vaults set in high ground water areas that have sump pumps installed to remove the water as needed. This does not comply with current standards.
- Chlorine residual levels that are monitored immediately after the storage facility are dependent on the operation of the a small booster pump that has had issues with air lock and failure. This booster is also located in one of the vaults with high ground water that is discharged by a sump pump. Perhaps a different setup may prove more reliable to monitor entry point chlorine residual.

MONITORING, REPORTING and DATA VERIFICATION:

- Wells 1, 2 and 3 do not disinfect despite being directly connected to the surface water treatment plant. Any determination that allowed this operation in the past will be moot in the future when considering LT1, LT2 and the upcoming GWR. Please consider this scenario: The three wells operate in conjunction with the storage facility water level and can potentially deliver water to the storage facility. In turn, the surface water treatment plant achieves disinfection contact time in the 500,000 gallon storage facility. So in the situation where surface water is not entering the storage facility (example: during bypass, backwashing, maintenance, etc.) the storage tank receives unchlorinated ground water from the wells. This dilutes the storage facility chlorine concentration and alters CT calculations.
- Systems that chlorinate fulltime are required to maintain a minimum chlorine residual of **0.2 mg/L throughout distribution.** I am certain this is not possible when the ground water wells are operating. Each day the chorine residual drops below the minimum level is a violation and may be subject to fines.

MAINTENANCE, MANAGEMENT, SAFETY and OPERATION:

- I strongly recommend key Stevensville staff carefully read LT1, LT2 and the GWR to make sure you're in compliance now and in the future.
- The gas chlorine room is an extreme safety concern and correction should be prioritized to get the exhaust fan fixed and the panic bar installed on the door.

- A new well was recently drilled just west of the existing TP001 and ST001 and pump tests show it is capable of producing approximately 1,100 gpm. George told me the Town of Stevensville is considering creating a well field in this area and discontinue use of the surface water source, surface water treatment plant, well 2, well 3 and possibly well 1. I encourage Stevensville to complete water quality parameters on the new test well and pursue this transition if the water quality is adequate and economical to treat. Otherwise, LT1, LT2 and the Ground Water Rule will certainly affect daily operation and cost of the existing system.
- Take all required precautions when working in the systems multiple enclosed spaces and the gas chlorination room.

OPERATOR COMPLIANCE WITH STATE REQUIREMENTS:

Operator George Thomas is properly certified for the current size of Stevensville and is current on his continuing education credits needed to maintain certification.

If you have any questions about this report or public water supply regulations please give me a call at (406) 755-8985 ext 102

Sincerely,

Michael Kropp

Michael Kropp
Environmental Science Specialist
DEQ PWS Kalispell
Phone: (406) 755-8985 ext 102
Fax: (406) 755-8977

CC: Helena PWS file
Kalispell PWS file
George Thomas (operator)
Ravalli County files

Supplemental information attached: Example of good well cap
Franklin submersible maintenance booklet
Backflow prevention brochure

SANITARY SURVEY FORM - INVENTORY

2/15/05

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

DATE OF SURVEY 7/25/2008 | COUNTY Ravalli 081 | SURVEYOR NAME - Mike Kropp, DEQ PWS Kalispell

(SYSTEM REPRESENTATIVE) George Thomas | (OTHER REPRESENTATIVE) NA

SYSTEM ADDRESS - ADMINISTRATIVE CONTACT

Addressee George Thomas
Primary Address
Street PO Box 30 ____
City Stevensville State MT Zip 59870
System Phone (406)777-3341 Fax (____) ____

SYSTEM OWNER

Addressee Town of Stevensville
Owners Address
Street PO Box 30
City Stevensville State MT Zip 59870
Owner Phone (406) 777-5271 Fax (____) ____

LOCATION OF SYSTEM

Nearest City Stevensville Description or Physical Address Town of Stevensville

☐ seasonal operation dates:____to____
☒ year round operation

OPERATOR OF SYSTEM

Name George Thomas
Certified Operator? ☒ Yes ☐ No ☐ Not required
Copy of Certificate? ☒ Yes ☐ No Certification # 4568
Phone # (406) 777-5271 Cell Phone # (____) ____
Fax # (____) ____

ALTERNATE OPERATOR OF SYSTEM

Name Edward Sutherlin
Certified Operator? ☒ Yes ☐ No ☐ Not required
Copy of Certificate? ☐ Yes ☒ No Certification # 3931
Phone # (406) 777-5271 Cell Phone # (____) ____

SYSTEM STATUS

☒ A = Active ☐ P = Pending *(Add New System)*
☐ I = Inactive

SYSTEM CLASS

☒ C = Community
☐ NTNC = Non-Transient Non-Community
☐ TNC = Transient Non-Community

Total Service Connections: Residential / Non-Transient: 700
Transient: 10

Total Active Connections: Residential / Non-Transient: 700
Transient: 10

Service Connections Metered? ☒ Yes ☐ No
Percent Metered 50 %

Resident Population (Number of permanent residents utilizing PWS daily) 1,750

Non-Transient Population (Maximum number of non-transient persons utilizing PWS daily) 20

Transient Population (Maximum number of transient persons served by PWS daily) 150

OWNER TYPE

☐ 1 Federal Government
☐ 2 Private Subdivision, Investor, Trust, Cooperative, Water Association, etc.
☐ 3 State Government
☒ 4 Local Government Authority, Commission, District, Municipality, City, etc.
☐ 5 Mixed Public/Private
☐ 6 Native American

SERVICE AREA CHARACTERISTICS LIST

☐ BR Bar
☐ DC Day Care Center
☐ DI Dispenser
☐ HS Head Start
☐ HA Homeowners Assoc.
☐ HM Hotel/Motel
☐ HR Highway Rest Area
☐ IA Industrial/Agricultural
☐ IC Interstate Carrier
☐ IN Institution
☐ MF Medical Facility
☐ MH Mobile Home Park
☒ MU Municipality
☐ OA Other Area
☐ ON Other Non-Transient Area (____Average Daily Visitors TNC)
☐ OR Other Residential Area
☐ OT Other Transient Area
☐ PA Recreation Areas
☐ RA Residential Area
☐ RE Retail Employees
☐ RS Restaurant
☐ RV RV Park
☐ SC School
☐ SI Sanitary Improvement District
☐ SK Summer Camp
☐ SR Secondary Residences
☐ SS Service Station
☐ SU Subdivision
☐ WBWater Bottler
☐ WH Wholesaler (Sells Water)

Service Category Description MU - Municipality

Comments: This system will have a difficult time meeting LT1/LT2 and the upcoming GWR as it now operates. Surface water system with ground water wells in distribution that have high static, treatment , highly susceptable aquifer and are not disinfected. There is limited available choices for the installation of contacts tanks near the existing wells if the upcoming GWR requires 4 log inactivation prior to distribution. Distribution leaks exist but system does not know how severe they are because only +-50% of distribution is metered. The general cleanliness of the facilities is good, but there were virtually no improvements made since the 2005 sanitary survey.

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

Water System Facilities (WSF) numbers are WSF Type Codes plus an assigned number. (i.e. source facility numbering starts with 002 and all non-source facilities start with 001). See instruction sheet for a list of WSF Type Codes. When a source is operational it is considered *Active*, this includes systems that are seasonal. *Inactive* sources are those which are shut down but can return to active status, such as a system out of business. *Proposed* sources are those that have been identified through the Plan Review process, but are not connected to the water system.

A water source facility is a well, spring, intake, infiltration gallery or consecutive connections from which a system draws or purchases water: | Total Number of Source Facilities 4

WATER SYSTEM FACILITIES SUMMARY (WSF)

WSF ID	Facility Name	Water Type Code	Purchased	Seller PWSID	Activity Status*
DS 001	Distribution System				
IN002	intake north Swamp Creek and Mill Creek	SW	☐ Yes ☒ No		active
WL003	Well 1 North	GW	☐ Yes ☒ No		active
WL004	Well 2 South Ave Mission St.	GW	☐ Yes ☒ No		active
WL005	Well 3 South	GW	☐ Yes ☒ No		active
TP001	TP for North Swamp Creek and Mill Creek		☐ Yes ☐ No		active
TP002	TP for Well 1		☐ Yes ☐ No		active
ST001	storage facility 500,000 gal		☐ Yes ☐ No		active
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		

Description of Water System Facility flow: North Swamp Creek and Mill Creek intake (IN002) to treatment plant (TP001) to storage facility (ST001) to distribution (DS001). Well 1 (WL003) to treatment plant (TP002) to distribution (DS001) to storage facility (ST001) to distribution (DS001) to storage facility (ST001) to distribution (DS001). Well 2 (WL004) to (DS001). Well 3 (WL005) to distribution (DS001) to storage facility (ST001) to distribution

Example: Well 1 (WL002) to common header (CH001), Well 2 (WL003) to common header (CH001) to treatment plant (TP001) to pressure control assembly (PC001) to distribution system (DS001) to storage tank (ST001) to distribution system (DS001).

*(A)Active, (I)Inactive, (P)Proposed

EMERGENCY POWER

Does the system have emergency power? ☒ Yes ☐ No

If yes, what type: ______

Record of primary power failures: ______ in last year

Frequency of testing: ______

Switchover: ☐ Automatic ☐ Manual

Comments: Operator said a portable emergency generator can be connected to TP001.

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE | **STATUS OF SOURCE** ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL003 *Entry Point ID* EP503
These are State assigned identification numbers

Source Name Well 1 North
Name of Source – Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 1 North
Name of EP – Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ TP002

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 400 gpm
indicate units

Maximum Production 400+ gpm
indicate units

Date Drilled 3/1/1957
If well. . date drilled

Casing Size 10"
size of casing installed in well

Case Depth 370'
depth of casing installed in well

Well Depth 460'
depth of well expressed in feet

Grout Depth unknown
depth of grout used to seal well walls

Log SWL 30'
(static) expressed in feet below ground elevation

Log PWL air tested
(pumping) expressed in feet below ground elevation

Test Pump Rate 400 gpm for 12 hrs
expressed in gallons per min

Intake Type drilled holes/open
type of intake mechanism

Screened Interval 362' to 370'
expressed in feet below ground elevation

Well Yield tested at 400 gpm
pump tested in gallons per minute

Latitude 46°30' 42.3"

Longitude 114°05' 34.6"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☒	☐	☐	☐
Is well site protected from flooding?	☒	☐	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☒	☐	☐	☐
If no . . explain _____				
Does casing extend at least				
☐18 inches above outside ground level;	☐	☐	☐	☐
☒12 inches above finished floor inside well house; and	☒	☐	☐	☐
☒3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☒	☐	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☒	☐	☐	☐
Treated	☒	☐	☐	☐
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☒	☐	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 50 hp submersible with VFD controls
(example: 30 hp line shaft turbine)
Rated Capacity 400+ gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? 2007			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☒	☐	☐	☐
Do underground compartments have a drain?	☐	☐	☐	☒
Is facility properly protected against trespassing and vandalism?	☒	☐	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☐	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: The wellhead looks to be in good condition.

Explain Controls: _____

Comment: Well pump size was increased in 1994 to a 50 hp vertical turbine pump capable of producing arround 500 gpm. A new submersible 50 hp pump assembly was installed near the beginning of 2007 complete with VFD controls that is capable of producing slightly over 400 gpm. I have no idea why this system installed VFD controls on a system that operates with storage facility level.

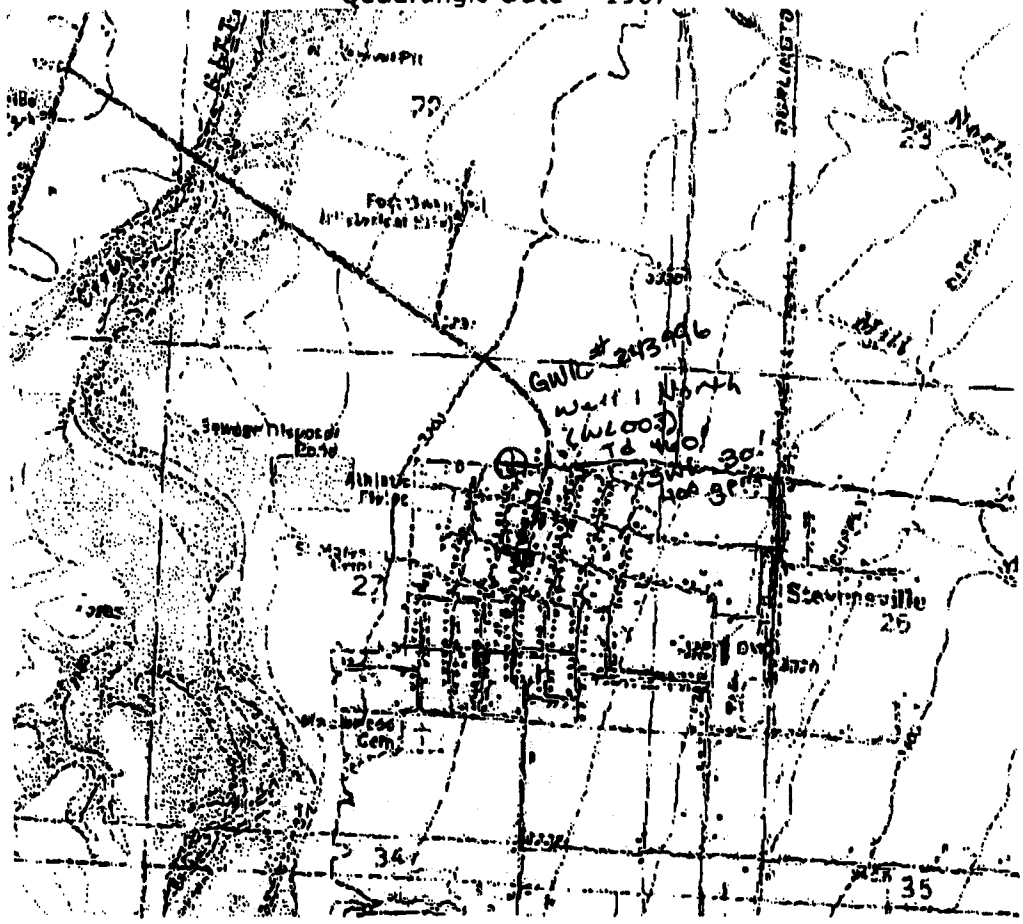
Montana Topographic Map Finder

The map is 1.86 miles wide.

Choose Image Type

Topographic Map | Refresh

Quadrangle Date = 1967



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Lat 46.51245 Long

State Plan
E 247826 N 2

UTM Zone 1
E 722918 N 51

US National G
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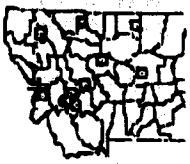
TRS T9N R20

Hydrologic Unit
Bitterroot Riv

Download 24K quadrangle:

Download 100K quadrangle:

Click the small map to n
map center



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hi-resolution color
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Map Size: Extra Large | Large | Small | Refresh

Search to

Click Here to view other map data for this area.

Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SDWES # WL003

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:07:20 PM)

NOTICE >> This well deepens GWIC Id 60163. << NOTICE

Site Name: CITY OF STEVENSVILLE
GWIC Id: 243996 well 1 north

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
09N	20W	27	SE¼ SE¼ NW¼ NE¼

County RAVALLI **Geocode**

Latitude	Longitude	Geomethod	Datum
46.512452	114.094126	TRS-SEC	NAD83

Altitude	Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN DRILL

Section 5: Well Completion Date
Date well completed: Friday, March 01, 1957

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
117	412	10

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	455	10			WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
362	370	10	16	1X3/8	DRILLED HOLES

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 460
Static Water Level: 30
Water Temperature:

Air Test *

400 gpm with drill stem set at 100 feet for 12 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

From	To	Description
117	130	CLAY AND SAND
130	131	GRAVEL AND SAND
131	140	CLAY AND SAND
140	141	GRAVEL SAND AND WATER
141	150	CLAY AND SAND
150	164	SAND SOME CLAY
164	174	SAND SMALL HEAVING GRAVEL
174	178	HARD CLAY AND GRIT
178	190	BROWN CLAY WITH GRIT
190	219	GRANITE SOME CLAY
219	231	CLAY MIXED WITH GRAVEL
231	239	GRAVEL SOME CLAY
239	275	CLAY WITH GRIT
275	284	GRANITE
284	306	CLAY WITH GRIT

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: GLENN CAMP
Company:
License No: WWC-7
Date Completed: 3/1/1957

Site Name: CITY OF STEVENSVILLE
GWIC Id: 243996
Additional Lithology Records

From	To	Description
305	314	GRANITE
314	319	CLAY
319	324	GRANITE
324	330	SAND SMALL GRAVEL
330	344	SAND
344	347	PEAT
347	350	CLAY
350	357	CLAY
357	370	SAND WITH GRAVEL
370	380	CLAY
380	389	GRAVEL AND SAND
389	412	CLAY
412	413	GRANITE
413	416	CLAY
416	417	GRANITE
417	427	CLAY
427	428	MEALY SAND
428	434	GRANITE
434	438	CLAY AND SAND
438	440	SAND
440	453	GRANITE
453	460	CLAY SAND
460	480	CLAY AND SAND

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE | **STATUS OF SOURCE** ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL004 *Entry Point ID* EP504
These are State assigned identification numbers

Source Name Well 2 South Ave Mission St.
Name of Source – Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 1 North
Name of EP – Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ WL004

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 220 gpm
indicate units

Maximum Production 220 gpm
indicate units

Date Drilled 2/13/1968
if well. . date drilled

Casing Size 8"
size of casing installed in well

Case Depth 56'
depth of casing installed in well

Well Depth 56'
depth of well expressed in feet

Grout Depth unknown
depth of grout used to seal well walls

Log SWL 30'
(static) expressed in feet below ground elevation

Log PWL unknown
(pumping) expressed in feet below ground elevation

Test Pump Rate 300 gpm for 3 hrs
expressed in gallons per min

Intake Type holes
type of intake mechanism

Screened Interval 36' to 56'
expressed in feet below ground elevation

Well Yield tested at 300 gpm
pump tested in gallons per minute

Latitude 46°30' 18"

Longitude 114°05' 46.7"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☐	☒	☐	☐
Is well site protected from flooding?	☐	☒	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☐	☒	☐	☐

If no . . explain Wellhead in vault is not protected from surrounding contaminants.

Does casing extend at least				
☒18 inches above outside ground level;	☐	☒	☐	☐
☒12 inches above finished floor inside well house; and	☐	☒	☐	☐
☒3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☒	☐	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☒	☐	☐	☐
Treated	☐	☐	☐	☒
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☐	☒	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 20 hp submersible
(example: 30 hp line shaft turbine)
Rated Capacity 220 gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? unknown			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☐	☒	☐	☐
Do underground compartments have a drain?	☐	☒	☐	☐
Is facility properly protected against trespassing and vandalism?	☐	☒	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☒	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: Wellhead is located in a vault with electrical components, wellhead and well vent outlet that are all below flood rim. The well vault is not adequately vented, poorly sealed and does not have a permanent ladder affixed to the wall.

Explain Controls: Storage facility water level triggers Well 2 operation.

Comment: Electrical controls in a vault that is dependent on a sump pump to eliminate water can not be considered adequately protected.

Montana Topographic Map Finder

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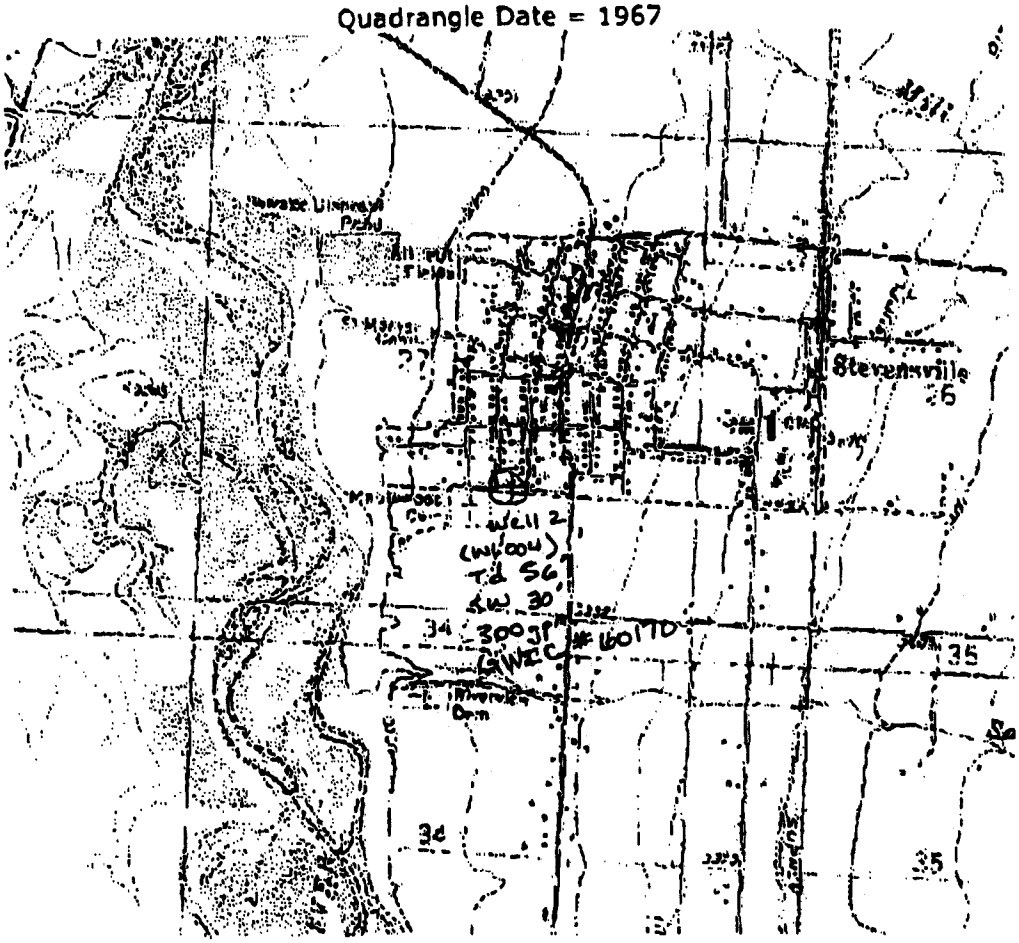
Choose Image Type

Topographic Map | Refresh

Quadrangle Date = 1967



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Hydrologic Unit
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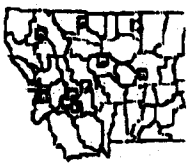
Click the small map to n
map center



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Map Size: Extra Large | Large | Small | Refresh

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Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SOWIS #WL004

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:16:45 PM)

Site Name: CITY OF STEVENSVILLE - WELL X (MK)
GWIC Id: 60170
DNRC Water Right: P007286-00

Known as: Well 2 South Ave Mission St.

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
08N	20W	27	SE¼ SE¼ NW¼ SE¼

County: RAVALLI
Geocode:

Latitude	Longitude	Geomethod	Datum
46.505	114.0948	MAP	NAD27

Altitude	Method	Datum	Date

Addition: **Block:** **Lot:**

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN

Section 5: Well Completion Date
Date well completed: Tuesday, February 13, 1968

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	56	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	56	8				32 LB STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
36	56	6			1/4 X 4 HOLES

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 56
Static Water Level: 30
Water Temperature:

Bailer Test *

300 gpm with _ feet of drawdown after 3 hours.
Time of recovery .. hours.
Recovery water level _ feet.
Pumping water level 36 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

From	To	Description
0	1	TOPSOIL
1	10	SAND GRAVEL
10	29	SAND GRAVEL LARGE GLACIAL BOULDERS TIGHT PRESSED
29	56	SAND GRAVEL LOOSE WB

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: RAVALLI DRILLING
License No: WWC-62
Date Completed: 2/13/1968

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE

STATUS OF SOURCE ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL005 (These are State assigned identification numbers) *Entry Point ID* EP505

Source Name Well 3 South (Name of Source – Example: Well 1 or South well, etc.)

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 2 South (Name of EP – Example: Entry point for North Well 1 & South Well 2)

Location of Entry Point EP @ WL005

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 220 gpm (indicate units)

Maximum Production 220 gpm (indicate units)

Date Drilled 2/6/1976 (if well. . date drilled)

Casing Size 8" (size of casing installed in well)

Case Depth 75' (depth of casing installed in well)

Well Depth 75' (depth of well expressed in feet)

Grout Depth 35' natural grout (depth of grout used to seal well walls)

Log SWL 29' (static) expressed in feet below ground elevation

Log PWL unknown (pumping) expressed in feet below ground elevation

Test Pump Rate 70 gpm for 1 hr (expressed in gallons per min)

Intake Type two sets of slots (type of intake mechanism)

Screened Interval 40' to 50' and 55' to 75' (expressed in feet below ground elevation)

Well Yield tested at 70 gpm (pump tested in gallons per minute)

Latitude 46°30' 15.3"

Longitude 114°05' 47"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☐	☒	☐	☐
Is well site protected from flooding?	☐	☒	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☐	☒	☐	☐

If no . . explain Wellhead in vault is not protected from surrounding contaminants.

Does casing extend at least				
☒ 18 inches above outside ground level;	☒	☐	☐	☐
☐ 12 inches above finished floor inside well house; and	☐	☐	☐	☐
☒ 3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☐	☒	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☐	☒	☐	☐
Treated	☐	☐	☐	☒
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☐	☒	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 20 hp submersible (example: 30 hp line shaft turbine)
Rated Capacity 220 gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? unknown			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☐	☒	☐	☐
Do underground compartments have a drain?	☐	☒	☐	☐
Is facility properly protected against trespassing and vandalism?	☐	☒	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☒	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: Wel log shows this well was tested at 70 gpm but now has a submersible pump capable of producing 220 gpm. I did not find a capacity test supporting this increased pump size. Poorly vented control valve vault without a ladder permanently afixed to the wall. The valve vault has a noteable amount of garbage in the bottom. No security at the wellhead. Split style well cap is not a good sanitary seal for outdoor use.

Explain Controls: _____

Comment: Pump controls are currently operating adequately but are located on a post next to the control vault and is not protected from vandalism.

MONTANA WELL LOG REPORT

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Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:17:10 PM)

Site Name: CITY OF STEVENSVILLE - WELL X (MW)
GWIC Id: 60172
DNRC Water Right: P009186-00
Known as: Well 3 South

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
09N	20W	27	NW¼ NE¼ SW¼ SE¼

County RAVALLI **Geocode**

Latitude	Longitude	Geomethod	Datum
46.5044	114.0948	MAP	NAD27

Altitude	Method	Datum	Date
3322			

Addition **Block** **Lot**

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CABLE

Section 5: Well Completion Date
Date well completed: Friday, February 06, 1976

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	75	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	75	8				24 LB STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
40	50	8			3/8 IN SLOTS
55	75	8		5 IN	SLOTS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	35	NATURAL	

Section 7: Well Test Data

Total Depth: 75
Static Water Level: 29
Water Temperature:

Bailer Test *

70 gpm with _ feet of drawdown after 1 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 30 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks
3 FT GRAVEL PACK

Section 9: Well Log

Geologic Source
110ALVM - ALLUVIUM (QUATERNARY)

From	To	Description
0	3	TOPSOIL
3	26	SAND GRAVEL BOULDERS BROWN
26	51	SAND & GRAVEL WB BROWN
51	60	CLAY & GRAVEL
60	75	SAND & GRAVEL WB BROWN

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.*

Name:
Company: RAVALLI DRILLING
License No: WWC-62
Date Completed: 2/6/1976

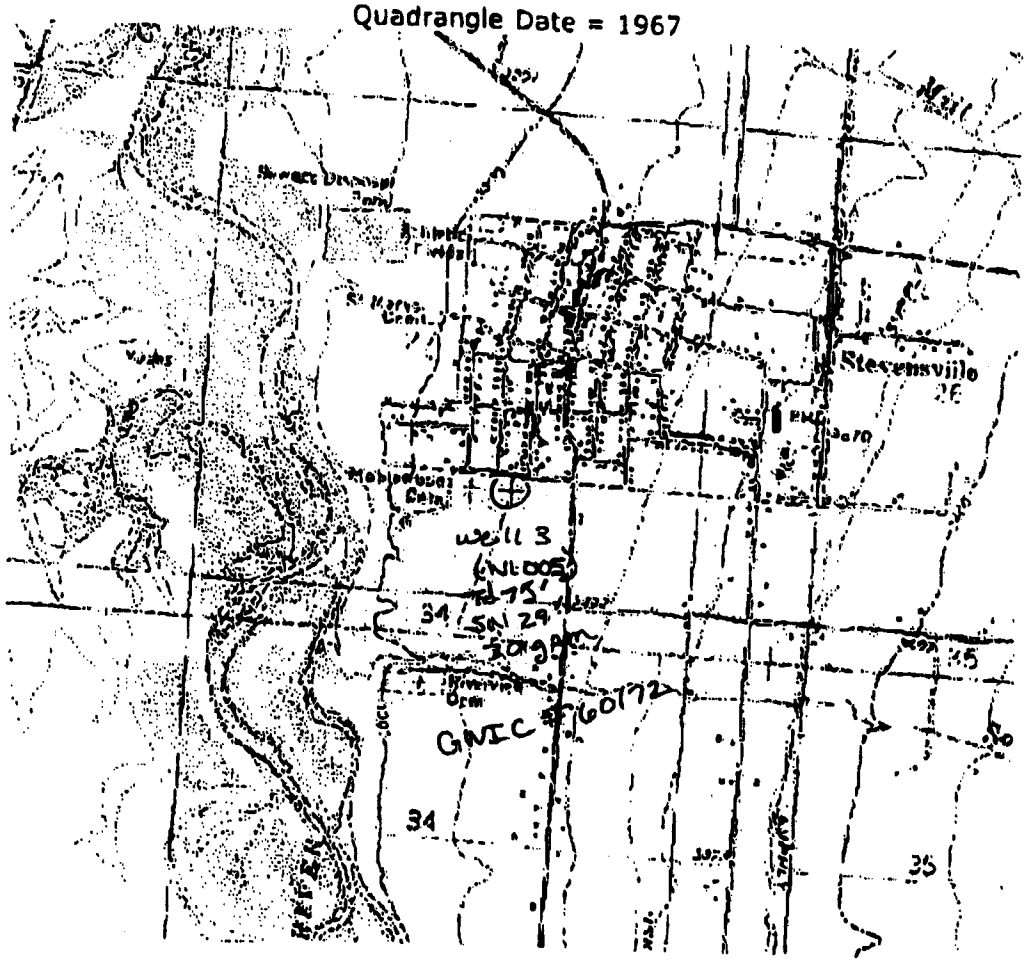
Montana Topographic Map Finder

The map is 1.86 miles wide.

Choose Image Type

Topographic Map | Refresh

Quadrangle Date = 1967



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State Plan
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UTM Zone 1
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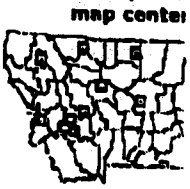
Hydrologic Unit
Bitterroot Riv

Download 24K quadrangle:

Download 100K quadrangle:

Click the small map to n map cente



Green squares show are hi-resolution color i available.

Legend | He

Map Size: Extra Large | Large | Small | Refresh

Search for

Click Here to view other map data for this area.

Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SANITARY SURVEY FORM - SURFACE WATER, SPRINGS & INFILTRATION GALLERIES

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

SOURCES — **STATUS OF SOURCE** ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID IN002 *Entry Point ID* EP502
These are State assigned identification numbers

Source Name intake North Swamp Creek and Mill Creek
Name of Source - Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address) 09N 19W sec31

Entry Point Name EP for North Swamp Creek and Mill Creek
Name of EP - Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ TP001

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed? ☒ Yes ☐ No ☐ Unk ☐ N/A

Average Production varies
indicate units

Maximum Production +-800 gpm TP001 maximum output.
indicate units

Latitude 46°29' 58.8"
Longitude 114°02' 23.4"

SURFACE SOURCES

What is the nature of watershed?

☐ Agricultural
☐ Industrial
☐ Forest
☐ Residential
☒ Other Hay field

Name North Swamp Creek and Mill Creek intake

What is the size of the owned/protected area of the watershed? 26 acres

How is watershed controlled?
☒ Ownership
☐ Ordinances
☐ Zoning
☐ Other _____

	Yes	No	Unk	N/A
Has a source water protection plan been developed?	☐	☒	☐	☐
Has management had a watershed survey performed?	☐	☒	☐	☐
Is there an emergency spill response plan?	☐	☒	☐	☐
Is the source adequate in quantity?	☒	☐	☐	☐
Is the source adequate in quality?	☒	☐	☐	☐
Is the intake protected from sources of contamination?	☐	☒	☐	☐
Are multiple intakes, located at different levels, utilized?	☐	☒	☐	☐
Is the highest quality water being drawn?	☒	☐	☐	☐
Can the raw water transmission line bypass treatment?	☐	☒	☐	☐

How often are intakes inspected? as needed

What conditions cause fluctuations in quality? Runoff and large rain events.

Comment: A series of shallow buried laterals located in a 26 acre hay field diverts water from North Swamp Creek and Mill Creek vicinity to concrete caissons and then piped to the surface water treatment plant. High ground water levels prevents much in terms of construction in this area.

SPRINGS & INFILTRATION GALLERIES

	Yes	No	Unk	N/A
Is recharge area protected?	☒	☐	☐	☐

If Yes, how? 26 acre ownership

☒ Ownership
☐ Fencing
☐ Ordinances
☐ Other _____

What is the nature of recharge zones? ☐ ☐

☐ Agricultural
☐ Industrial
☐ Forest
☐ Residential
☒ Other Hay field

Is site protected from flooding?	☐	☒	☐	☐
Is there diversion of surface drainage from site?	☐	☒	☐	☐
Is collection chamber properly constructed?	☐	☐	☒	☐
Does hatch cover overlap?	☒	☐	☐	☐
Is the overflow outlet screened?	☐	☐	☒	☐
Vented and screened?	☐	☐	☒	☐
Is supply intake adequate?	☒	☒	☐	☐
Is site properly protected (from livestock, vandalism, tampering, etc)?	☐	☒	☐	☐

What conditions cause changes to quality of the water? runoff and large rain events

Comment: This intake is more of a infiltration gallary and is highly susceptable to area water level fluctuations. The intake is generally acceptable, with the exception of during runoff and heavy rains.

SANITARY SURVEY FORM - TREATMENT

PWSID MT0000335

SYSTEM NAME Stevensville, Town of

Treatment Objective

B = Disinfection Byproduct Control
C = Corrosion Control
D = Disinfection
E = Dechlorination
F = Iron Removal
I = Inorganics Removal
M = Manganese Removal
N = *No Treatment at Source*
O = Organics Removal
P = Particulate Removal
R = Radionuclides Removal
S = Softening (Hardness Removal)
T = Taste / Odor Control
Z = Other _____

WATER TREATMENT FACILITIES

WSF ID	Treatment Plant Name	Treatment Objectives and Code
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____
TP001	TP for North Swamp Creek and Mill Creek	P240 P345 P660
_____	_____	DD401 C445 _____
_____	_____	_____ _____ _____
TP002	TP for well 1	C445 _____ _____
_____	_____	_____ _____ _____
_____	_____	_____ _____ _____

WSF ID	Location
_____	Latitude ____ ° ____ ' ____ " Longitude ____ ° ____ ' ____ "
TP001	Latitude 46°30' 03.2" Longitude 114°02' 45.6"
TP002	Latitude 46°30' 44.3" Longitude 114°05' 33"
_____	Latitude ____ ° ____ ' ____ " Longitude ____ ° ____ ' ____ "
_____	Latitude ____ ° ____ ' ____ " Longitude ____ ° ____ ' ____ "

Treatment plant description: There are potentially two points of gas chlorine injection @ TP001 (1. Between alum injection and sand filter 2. After sand filter). Chlorine level monitoring point is located after storagein a poorly vented vault that has high ground water. The vault i s approximately 180 feet from the monitoring equipment and air lock has been an issue on the monitoring pump. Chlorine injection point immediately after alum injection is rarely used. The gas chlorination room remains substandard in terms that is does not have a panic bar on the door, excessive rust, inadequate ventilation and no scale under the tanks. PLANT: Raw water basin to alum (Aqua Hawk 2757) feeder to static mixer to optional gas chlorine injection point (not currently used) single sand filter to gas chlorination to orthophosphate injection to monitoring point to automatic bypass (If turbidity exceeds 0.30 NTU) to storage to chlorine monitoring vault to distribution. There is no line in place that can bypass TP001. See attached schematic.

FOR SYSTEMS EMPLOYING FULL-TIME DISINFECTION

	Yes	No	Unk	N/A
What disinfectant is used? gas chlorine				
Is the disinfectant used NSF approved?	☒	☐	☐	☐
Is the amount of disinfectant used recorded? If Yes, amount used: _____lbs/day _____ ppm _____ other (give units)	☐	☒	☐	☐
Is the amount of disinfectant used compared to water pumped to verify concentration?	☐	☒	☐	☐
Is chemical storage adequate and safe? If No, explain _____	☒	☐	☐	☐
Is disinfectant residual being monitored daily?	☒	☐	☐	☐
Are residual reports submitted monthly?	☒	☐	☐	☐
Is the disinfection equipment being operated and maintained properly?	☒	☐	☐	☐
Is operational standby equipment provided?	☐	☒	☐	☐
If not, are critical spare parts on hand?	☒	☐	☐	☐
Has disinfection system been free from failure during the past year – no interruption?	☐	☒	☐	☐

If No, give dates of interruptions No dates given. Booster chlorine pump in the vault immediately after storage has failed in the past. This same pump tends to air lock.

Describe provisions for providing contact time between disinfection point and the first point of use: The 500,000 gallon storage facility is located immediately after chlorine injection and approximately miles of line to get to Stevensville.

IF USING GAS CHLORINATION

	Yes	No	Unk	N/A
Is a manifold provided to allow feeding gas from more than one cylinder?	☒	☐	☐	☐
Is there automatic switchover from cylinder to cylinder?	☒	☐	☐	☐
Are scales provided for weighing of containers?	☐	☒	☐	☐
Are chlorine storage and use areas isolated from other work areas?	☒	☐	☐	☐
Are stored cylinders capped and labeled?	☒	☐	☐	☐
Is room vented to the outdoors with suction located no more than 6 inches above the floor level?	☐	☒	☐	☐
Is vent inlet near the ceiling?	☐	☒	☐	☐
Is room containing chlorination treatment labeled sufficiently (DANGER signs, etc.)?	☐	☒	☐	☐
Is a view port provided into the room storing chlorine?	☒	☐	☐	☐
Is a means of leak detection provided? Type? ammonia	☒	☐	☐	☐
Is a self-contained breathing apparatus available for use during repair of leaks? Where? Main TP control room	☒	☐	☐	☐
Are personnel trained to use apparatus?	☒	☐	☐	☐
Are all doors hinged outward and equipped with panic bars?	☐	☒	☐	☐
Are all gas cylinders restrained near the top and about half way down by chaining to wall or by other means?	☒	☐	☐	☐

Comment: Outlet vent was near the floor but did not open properly and is currently inadequate. Chlorine gas has eaten the bottom of the metal door. No panic bar on the door. Not scale under the chlorine tanks currently in use. Chlorine room inlet vent is low and in the door. The surface water source is required to treat water and meet CT for disinfection while existing wells do not currently disinfect. DEQ rules also require disinfection after treatment and Well 1 treats with orthophosphate without disinfection.

SANITARY SURVEY FORM - SURFACE WATER TREATMENT PLANTS
(Direct and Conventional and other)

PWSID **MT0000335**

SYSTEM NAME **Stevensville, Town of**
Latitude 46°30' 03.2" Longitude 114°02' 45.6"

Type: ☐Direct ☐In-Line ☒Conventional ☐CAC ☐Other (describe) _____

Peak instantaneous flow experienced: plant capacity is approximately 800gpm

	Chemicals Added	Points of Application	Purpose	Feed Rate (range)
1)	AquaHawk 2757 (alum)	TP001 EP	coagulation	_____
2)	orthophosphate	TP001 outlet	inhibitor	_____
3)	gas chlorine	TP001 outlet	disinfection	_____
4)	_____	_____	_____	_____
5)	_____	_____	_____	_____

How are process control decisions made? Tubidity and chlorine residual levels. Anticipation of high turbidities correlate with spring runoff, heavy rains and other large events and the plant is not used during these periods.

Describe the following unit processes:

Rapid Mix: AquaHawk 2757 (alum) has a rapid mixer immediately after injection.

Flocculation:

Theoretical hydraulic detention time:_____Min

Tapered? ☐ Yes ☐ No

Description: _____

Sedimentation:

Surface overflow rate: unknown gpm/ft^2

Description: Sedimentation basin at TP001 inlet. Excess water to waste.

Filters:

Type: ☒Rapid Sand ☐Dual Media ☐Multi-media ☐Other (describe) _____

Depth of Media: 7" sand over 5" pea gravel

Surface wash? ☒ Yes ☐ No If Yes, type: travelling bridge backwash

Air scour? ☐ Yes ☐ No

Disinfection

Log inactivation credit granted: unknown log

Inactivation required: _____log

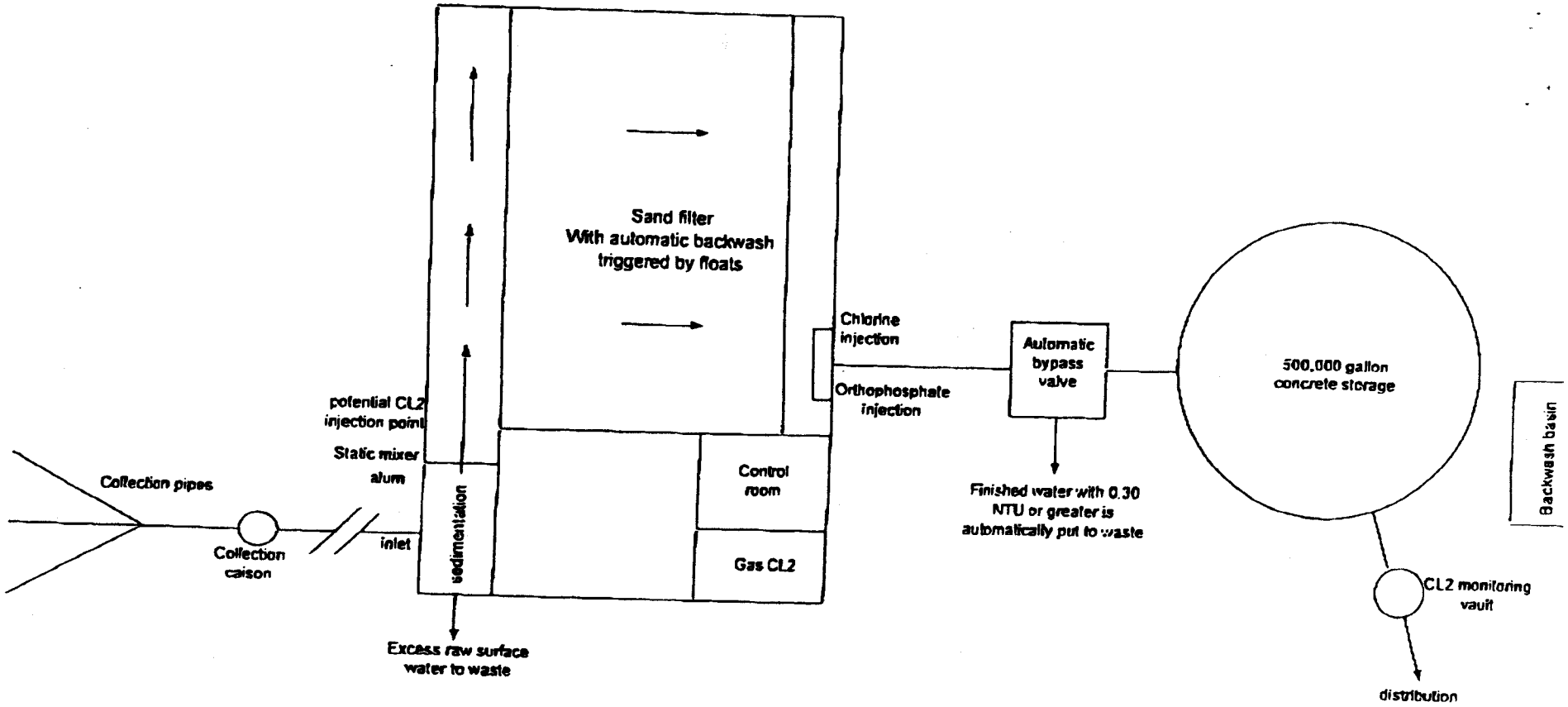
Total reduction: _____log

Is CT adequate under all conditions of flow, temperature and pH? ☐ Yes ☐ No ☒ Unk

Explain: Conditions vary and if the turbidity runs too high the plant is not used.

Comments on process control and finished water quality: There is a 2,200 gallon sedimentation basin at the inlet to TP001 to catch sand, silt, etc.. Surplus water runs over a concrete wall and to a nearby creek drainage. The pipe outlet to the creek was not found and the presence of a screen or flapper cover was not determined.

If a CPE is needed, please comment:_____


Sand filter
With automatic backwash
triggered by floats
potential CL2
injection point
Static mixer
alum
Collection pipes
Collection
caison
inlet
sedimentation
Control
room
Gas CL2
Excess raw surface
water to waste
Chlorine
injection
Orthophosphate
injection
Automatic
bypass
valve
Finished water with 0.30
NTU or greater is
automatically put to waste
500,000 gallon
concrete storage
Backwash basin
CL2 monitoring
vault
distribution

SANITARY SURVEY FORM - STORAGE

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

COMPLETE ONE SECTION FOR EACH STORAGE FACILITY

Total storage provided? 500,000 gallons | How much treated storage is provided 500,000 gallons | Storage provides 1.5 days days of water reserve

STORAGE FACILITY

WSF ID ST001

Location: Description +- 3 miles east of Stevensville
Latitude: 46°30' 02.9" Longitude: 114°02' 44.9"

Storage Volume? 500,000 gallons
Year constructed: unknown
Condition: ☐Good ☒Fair ☐Poor

	Yes	No	Unk	N/A
Does surface runoff and underground drainage drain away?	☐	☐	☒	☐
Is the site protected against flooding?	☐	☒	☐	☐
Is the site protected against trespass/vandalism?	☒	☐	☐	☐
Ladders caged and locked?	☐	☐	☐	☒
Are overflow lines, air vents, drainage lines or clean out pipes turned downward or covered, screened and terminated a minimum of 3 diameters above the ground or storage tank surface?	☐	☐	☒	☐
Overflow pad?	☐	☐	☒	☐
Is access hatch sealed properly and locked?	☐	☐	☐	☐
Are surface coatings in contact with water ANSI / NSF approved?	☐	☐	☐	☐
Is tank protected against icing and corrosion?	☒	☐	☐	☐
Can tank be isolated from system?	☐	☐	☐	☐
Is all treated water storage covered?	☒	☐	☐	☐
Are tanks disinfected after repairs are made?	☒	☐	☐	☐
What is cleaning frequency for tanks? Last cleaned in 2004				
Is tank inspected every 5 years by a structural engineer for structural integrity?	☐	☒	☐	☐

____ Date of last inspection ____ By whom

Comments: Pre-stressed concrete panels were installed on ST001 in 1978. Not sure what the sealant material is or if it's NSF approved. The roof sealant is in need of replacement or repair. There are large cracks and missing chunks in the roof sealant. The concrete tank is partially buried and is likely sitting in high ground water based on the GW level in the nearby vault. Operator isn't sure where the overflow outlet is located. The overflow would probably never be used because it appears the storage tanks flood rim is higher than the treatment plant filter bed. This eliminates overflowing the storage to remove material from the top of the water surface.

STORAGE FACILITY

WSF ID ____

Location: Description ____
Latitude: ____° ____' ____" Longitude: ____° ____' ____"

Storage Volume? _____gallons
Year constructed: _____
Condition: ☐Good ☐Fair ☐Poor

	Yes	No	Unk	N/A
Does surface runoff and underground drainage drain away?	☐	☐	☐	☐
Is the site protected against flooding?	☐	☐	☐	☐
Is the site protected against trespass/vandalism?	☐	☐	☐	☐
Ladders caged and locked?	☐	☐	☐	☐
Are overflow lines, air vents, drainage lines or clean out pipes turned downward or covered, screened and terminated a minimum of 3 diameters above the ground or storage tank surface?	☐	☐	☐	☐
Overflow pad?	☐	☐	☐	☐
Is access hatch sealed properly and locked?	☐	☐	☐	☐
Are surface coatings in contact with water ANSI / NSF approved?	☐	☐	☐	☐
Is tank protected against icing and corrosion?	☐	☐	☐	☐
Can tank be isolated from system?	☐	☐	☐	☐
Is all treated water storage covered?	☐	☐	☐	☐
Are tanks disinfected after repairs are made?	☐	☐	☐	☐
What is cleaning frequency for tanks? ____				
Is tank inspected every 5 years by a structural engineer for structural integrity?	☐	☐	☐	☐

____ Date of last inspection ____ By whom

Comments: ____

SANITARY SURVEY FORM - MISCELLANEOUS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

DISTRIBUTION SYSTEM EVALUATION

Distribution description DS001- Ductile Iron and PVC

	Yes	No	Unk	N/A
System drawings available?	☒	☐	☐	☐
Accurate As-Built drawing(s) on-site?	☒	☐	☐	☐
Lines adequately sized?	☐	☐	☒	☐
Adequate pressure maintained?	☒	☐	☐	☐
Mains protected from freezing?	☒	☐	☐	☐
Distribution system free of leaks?	☐	☒	☐	☐
Asbestos concrete pipe used?	☐	☒	☐	☐
Fire hydrants?	☒	☐	☐	☐
Dead end lines minimized by looping mains?	☐	☐	☐	☐
Flushing program?	☒	☐	☐	☐
Pressure reducing stations? Number ____	☐	☒	☐	☐
Booster stations? Number ____	☐	☒	☐	☐
Are individual booster pumps on any service lines? (see DEQ-1 8.9.2)	☐	☒	☐	☐
Were cross connections observed?	☐	☐		

Comments: Potential cross connections include well 1 to irrigation with only an inline double check valve, bypass outlet, storage tank overflow outlet, excess raw water outlet.

SAFETY

	Yes	No	Unk	N/A
Were confined spaces observed?	☒	☐	☐	☐

Describe any confined spaces observed Well 2 vault, well 3 control vault, chlorine monitoring vault near the storage facility, storage faciltiy and substandard chlorine treatment room.

Confined space safety adequate?	☐	☒	☐	☐
Fall risks adequately mitigated?	☐	☒	☐	☐

Note all safety deficiencies (consider items such as ladders, tank supports, guards on rotating electrical equipment, lightning protection for pumps, etc.) No permanent ladder in well 2 vault or well 3 control vault. Sump pumps in vaults to remove high ground water. The TP001 gas chlorine room does not meet standards and poses enclosed space concerns.

MONITORING AND RECORDKEEPING EVALUATION

	Yes	No	Unk	N/A
Does the system have a current Monitoring Schedule?	☒	☐	☐	☐
Bacti monitoring records maintained? (5 years)	☒	☐	☐	☐
Bacti Sample Site Plan submitted?	☒	☐	☐	☐
Familiar with repeat sampling?	☒	☐	☐	☐
Chemical monitoring records maintained? (10 years)	☒	☐	☐	☐
System specific records / plans maintained? (DBP, PB/CU, treatments, waivers, violations, etc.)	☒	☐	☐	☐
Familiar with Public Notice requirements?	☒	☐	☐	☐
Did Surveyor take a bacteriological sample?	☐	☒		

If Yes, date of Sample: ____ Time of Sample: ____

Comments: Record keeping appears adequate at this time. LT1/LT2 and GWR will have major issues for the system and management to address that could prove to costly.

MANAGEMENT

	Yes	No	Unk	N/A
Are there sufficient personnel?	☒	☐	☐	☐
Are operators properly certified?	☒	☐	☐	☐
Are personnel adequately trained?	☒	☐	☐	☐
Is there a current O&M manual on-site?	☒	☐	☐	☐
Is an emergency plan on-site and workable?	☒	☐	☐	☐
Has system addressed concerns from previous sanitary survey(s) or technical visit(s)?	☐	☒	☐	☐
Budget exists?	☒	☐	☐	☐
Does system maintain an emergency fund?	☐	☒	☐	☐
Does system contribute to facility replacement fund?	☒	☐	☐	☐
Are abandoned wells present?	☒	☐	☐	☐
Do abandoned wells appear to be properly abandoned? (see ARM 36.21.670)	☐	☒	☐	☐

Comments: Very few items from previous sanitary survey have been addressed.

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

The State, or an authorized agent, must conduct sanitary surveys for all public water supply systems in Montana. DEQ believes that periodic sanitary surveys, along with appropriate corrective actions, are indispensable for assuring the long-term quality and safety of drinking water. When properly conducted, sanitary surveys can provide important information on a water system's design and operations and can identify minor and significant deficiencies for correction before they become major problems.

Minor deficiencies do not pose serious health threats. However, corrective action of minor deficiencies can be critical in the long-term operation and safety of a public water system. Minor deficiencies are generally described as suggested or recommended corrections in the letter to system owner(s).

Significant deficiencies can be defined as a defective water supply component(s) having or likely to have an adverse influence on public health. Significant deficiencies require immediate corrective action in efforts to protect consumers.

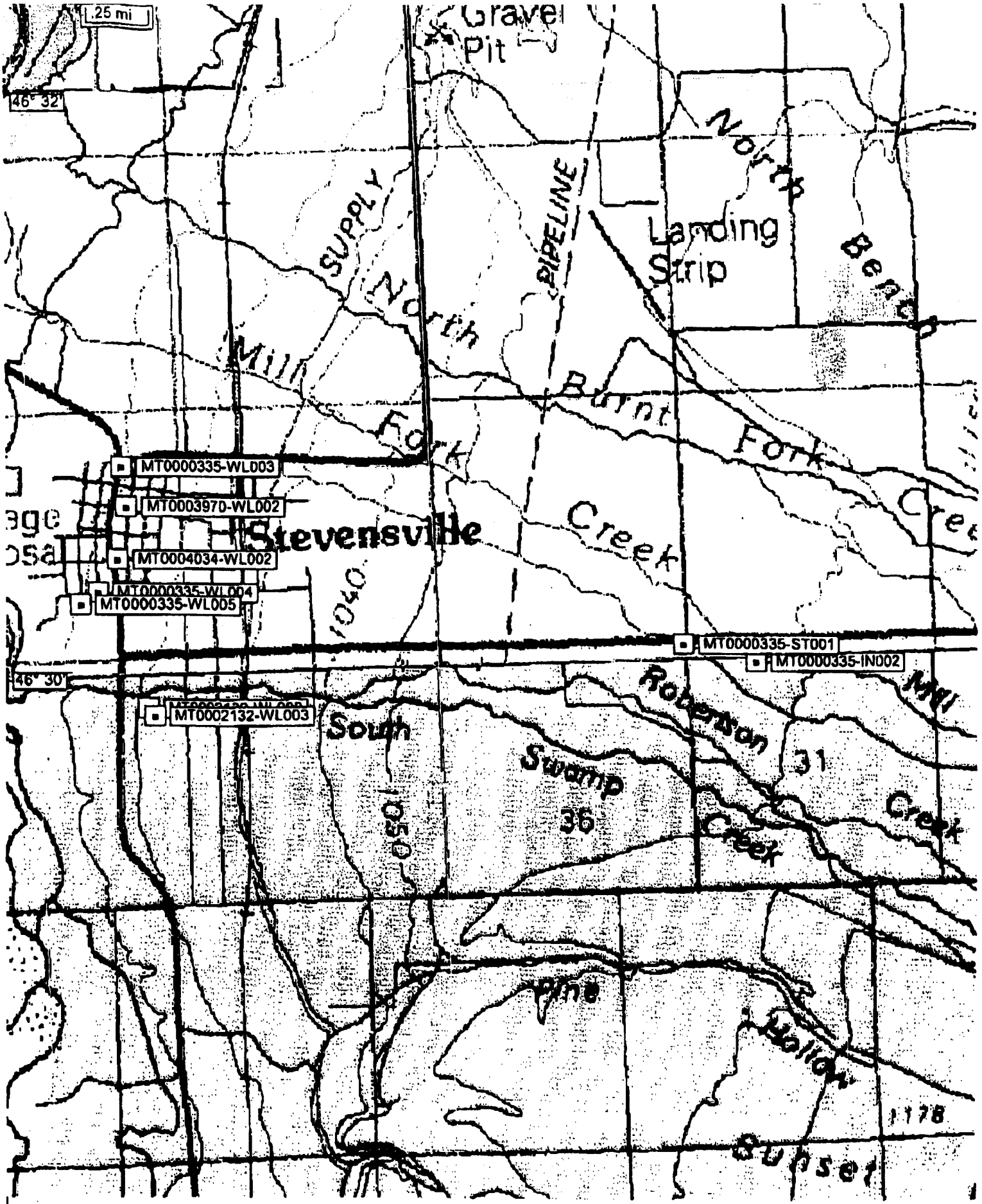
EPA and ASDWA guidance identifies eight broad components that should be covered in a sanitary survey. Using these eight broad components as a guide, minor and significant deficiencies should be described in the letter to system owner(s).

1) Source
2) Treatment
3) Distribution system
4) Finished water storage
5) Pumps, pump facilities, and controls
6) Monitoring and reporting, and data verification
7) System management and operation
8) Operator compliance with State requirements

With consideration that significant deficiencies may influence regulatory decisions and monitoring requirements, please list all significant deficiencies observed and corrective action(s) taken below.

Comments: ____

*** Required full time disinfection of what is considered a surface water source means all sources must disinfect to maintain adequate residual in distribution. The three ground water wells currently do not disinfect. LT1, LT2 and the upcoming GWR reaffirm the need for treatment. The GWR (Dec. 2009) may eventually require 4 log removal of viruses prior to the entry point of each of the ground water well if they are determined to be highly susceptable. (Please consider: Well 2 is located in a vault, has intake holes that begin at 36' and a total depth of 56'. Well 3 has intake holes beginning at 40' and a total depth of 75'. Both these sources are in unconfined aquifers composed primarily of gravel, boulders and sand. Well 1 is significantly deeper, but injects orthophosphate without subsequent disinfection.)**


.25 mi
Gravel Pit
46° 32'
North Bench
Landing Strip
SUPPLY
PIPELINE
North Mill Fork Burnt Fork Creek
MT0000335-WL003
MT0003970-WL002
Stevensville
MT0004034-WL002
MT0000335-WL004
MT0000335-WL005
1040
MT0000335-ST001
MT0000335-IN002
46° 30'
MT0002132-WL003
South Swamp Creek
1050
Robertson 31 Creek
36
Pine
Hollow
1178
Sunset

Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

109 Cooperative Way • Suite 105 • Kalispell, MT 59901-2389 • (406) 755-8985 • FAX (406) 755-8977

EXHIBIT 11
DATE Jan 16, 09
HB HB 11

July 24, 2008

Stevensville, Town of
Mayor Bill Meisner
PO Box 30
Stevensville, MT 59870

Re: Sanitary Survey Inspection of Stevensville public water system (PWSID: #MT0000335).

Dear Mayor Meisner,

I would like to thank George Thomas for assisting me during the sanitary survey inspection of the Stevensville water system. As a community water supply system, your facility is required to have a sanitary survey inspection every three years. These regular inspections offer us an opportunity to look for sanitary deficiencies that have the potential to cause contamination in the water system, as well as pointing out operation and maintenance concerns. Below are a few comments relating to the sanitary survey conducted on 6/25/2008.

SOURCE(s)

IN002 (Intake North Swamp Creek and Mill Creek): This source intake collection system has been in place for a considerable period of time and is highly susceptible to runoff and heavy rains. Construction of the intake and caisson would have to be improved if they were required to meet current standards.

Well 1 (WL003 or North Well): This source is significantly deeper (460') than the other Stevensville wells and appears to be drawing from a confined aquifer (intake 362' to 370'). The 50 hp vertical turbine pump assembly has been replaced by a 50 hp submersible pump assembly with VFD controls near the beginning of 2007. It is capable of producing approximately 400 gpm.

- Well 1 produces a significant amount of sand which is pumped directly into distribution.
- I question the need for variable frequency drive (VFD) controls for well 1 since the well is controlled by the storage tank water level. (Water hammer could have been more economically addressed by installing an electrical soft start setup.)

Well 2 (WL004): This source is located on South Ave – Mission St. and is 56' deep with the intake located at 36' to 56' below ground level. Static water level is 30' in this unconfined aquifer. Well 2 has a 20 hp submersible pump assembly that can produce approximately 220 gpm.

- Well 2 is located in a vault with no record of grouting.
- Well 2 does not have a meter to help determine production.
- Well 2 vault is vented through a vent pipe that is lower than the vault flood rim.
- Well 2 controls are located inside the vault and are lower than the flood rim.

- Well 2 is subjected to occasional high ground water. (High ground water is pumped to a nearby ditch via a sump pump.)
- Well 2 vault does not have a permanent ladder affixed to the wall.
- The access hatch to Well 2 does not have a raised collar or gasket hatch.
- Minimal security at Well 2, which is unfenced in a resident's yard.
- The Well 2 log (1968) shows a 3 hour test pump at 300 gpm and the pumping water level was drawn into the perforated intake section. Routine static water level and pumping water level should be routinely monitored to assure the PWL isn't being drawn into the perforated section.
- Manufacturer specifications require submersible pumps to be above the casing intake to accommodate cooling. A flow inducer sleeve should be installed over the submersible pump assembly if it's set below 36'.

Well 3 (WL005): This source is located near the cemetery in a residential area. It is 75' deep with two sections of casing perforations (40' to 50' and 55' to 75'). Static water level is 29' and currently has a 20 hp submersible pump assembly that is capable of producing 220 gpm.

- The well log (1976) shows a test pump at 70 gpm for 1 hour with a 1' drawdown. The current pump is capable of 220 gpm. Our DEQ PWS file in Kalispell did not show an additional pump test was performed to verify Well 3 has the capacity to safely produce 150 gallons more than the well log.
- Well 3 does not have a meter to help determine production.
- The split style well cap is not recommended for outdoor use because it's prone to leaking over a period of time. I recommend Stevensville purchase a quality well cap that more adequately protects the source from contaminants. Example enclosed.
- The control valve vault located next to Well 3 does not have a shoe box style hatch with gasket or ladder permanently affixed to the wall for access.
- The wellhead, control valve vault and electrical control panel are open to trespass and vandalism. Anyone walking past the electrical control panel could easily shut the main breaker off.
- Manufacturer specifications require submersible pump to be above the casing intake to accommodate cooling. A flow inducer sleeve should be installed over the submersible pump assembly if it's set below 40'. Again, static water level and pumping water level should be routinely monitored to assure the PWL isn't being drawn into the perforated section.

TREATMENT

Treatment Plant 1 (TP001): This is a single cell sand filter that adds alum, gas chlorine and orthophosphate. It is capable of producing approximately 800 gpm in optimal conditions. The filter bed has never been replaced and still has the original media (sand and pea gravel) that was installed in 1979. Backwashing is automatically triggered by floats and the treatment plant is off-line until complete. A small portable generator is available to operate chemical injection in the case of emergency. See attached schematic for chemical injection locations.

- Raw water enters the plant and flows through the complete treatment process (including chemical injection) and the finished product turbidity is measured prior to entering Stevensville's storage facility. An automatic bypass valve wastes the finished water prior to storage if it exceeds 0.30 NTU. Operators currently shut the treatment plant

down until raw water levels reach a more treatable level when the bypass is activated. This form of operation will have problems when held to LT1/LT2 standards.

- The gas chlorination room has an outlet fan that does not operate correctly. The chlorine fumes have completely eaten up the bottom of the door.
- The gas chlorination room does not have a panic bar on the door.
- A scale should be in place under the gas cylinders that are currently in use to verify chlorine use and reserve.
- Chlorine residual is measured immediately after the storage facility from a vault that is subject to high ground water. A small sump pump prevents the vault from flooding. There is an additional pump located in the vault that delivers water to the control room for monitoring chlorine residual. This pump has a history of losing prime which results in inaccurate residual readings and pump failure.

Treatment Plant 2 (TP002): This treatment plant is located at well 1 (WL003) and injects orthophosphate as a corrosion inhibitor prior to distribution.

- Perhaps the installation of a properly sized sand separator may be warranted since well 1 produces a substantial amount of sand.
- Montana DEQ PWS standards require any water treatment (such as orthophosphate injection) must be followed by disinfection. You may call Rachel Clark, P.E. in Helena to discuss this requirement (444-6722).

DISTRIBUTION: Distribution is primarily ductile iron and PVC.

- There are leaks in distribution but the extent isn't known because only about half the connections are metered.
- There are a few sections of Stevensville that have dead end lines and require routine flushing. There is also a few sections of undersized distribution. I suggest future projects address both the few areas that have these issues and plans accordingly for growth.

STORAGE: 500,000 gallon concrete storage tank with a pre-stressed concrete top. This facility helps achieve CT requirements for the surface water plant and is located immediately after TP001.

- The elevation of the treatment plant filter bed is lower than the storage facility overflow so it has not been needed since original construction. However, the overflow is still in place and the outlet location and condition (screened, flapper valve, etc.) are not known. The outlet location and condition needs to be determined to assure it does not provide access to a large range of contaminants (insects, rodents, etc.).
- The only situation where the storage facility overflow could be needed is if the wells were being used and the float switch failed. Even in this situation the overflow would not be needed unless the TP001 isolation valve was turned off. Otherwise, the water would flow back into the treatment building before it reached the storage tank overflow elevation.
- The storage facility roof is in need of new sealant.
- The area surrounding this partially buried concrete storage tank has confirmed high ground water levels as observed in the nearby chlorine monitoring vault. Regular cleaning and inspection of the concrete storage facility is important because

susceptibility of the storage tank to high ground water and whatever contaminants it contains. A crack in your concrete storage facility could just as easily let water flow in as out.

PUMPS, PUMP FACILITIES and CONTROLS:

- The submersible pump assemblies in wells 2 and 3 have been replaced 5 or 6 times since George began working for Stevensville in 1993. One of these times was a result of a lightning strike. However, the other replacements may be a direct result of installation outside manufacturer specifications (and DEQ standards) by placing the submersible pump assembly in or below the casing perforations without a flow inducing sleeve. George was not sure what depths the pumps were set at, but the SWL, PWL and perforation records suggest this is very possible. Increased failure rate occurs because water doesn't flow past the submersible motor to promote cooling as designed by manufacturer.
- Control vaults in areas of high ground water that subjects the facility to flooding are not allowed in Montana DEQ PWS standards. Stevensville currently has multiple vaults set in high ground water areas that have sump pumps installed to remove the water as needed. This does not comply with current standards.
- Chlorine residual levels that are monitored immediately after the storage facility are dependent on the operation of the a small booster pump that has had issues with air lock and failure. This booster is also located in one of the vaults with high ground water that is discharged by a sump pump. Perhaps a different setup may prove more reliable to monitor entry point chlorine residual.

MONITORING, REPORTING and DATA VERIFICATION:

- Wells 1, 2 and 3 do not disinfect despite being directly connected to the surface water treatment plant. Any determination that allowed this operation in the past will be moot in the future when considering LT1, LT2 and the upcoming GWR. Please consider this scenario: The three wells operate in conjunction with the storage facility water level and can potentially deliver water to the storage facility. In turn, the surface water treatment plant achieves disinfection contact time in the 500,000 gallon storage facility. So in the situation where surface water is not entering the storage facility (example: during bypass, backwashing, maintenance, etc.) the storage tank receives unchlorinated ground water from the wells. This dilutes the storage facility chlorine concentration and alters CT calculations.
- Systems that chlorinate fulltime are required to maintain a minimum chlorine residual of **0.2 mg/L throughout distribution.** I am certain this is not possible when the ground water wells are operating. Each day the chorine residual drops below the minimum level is a violation and may be subject to fines.

MAINTENANCE, MANAGEMENT, SAFETY and OPERATION:

- I strongly recommend key Stevensville staff carefully read LT1, LT2 and the GWR to make sure you're in compliance now and in the future.
- The gas chlorine room is an extreme safety concern and correction should be prioritized to get the exhaust fan fixed and the panic bar installed on the door.

- A new well was recently drilled just west of the existing TP001 and ST001 and pump tests show it is capable of producing approximately 1,100 gpm. George told me the Town of Stevensville is considering creating a well field in this area and discontinue use of the surface water source, surface water treatment plant, well 2, well 3 and possibly well 1. I encourage Stevensville to complete water quality parameters on the new test well and pursue this transition if the water quality is adequate and economical to treat. Otherwise, LT1, LT2 and the Ground Water Rule will certainly affect daily operation and cost of the existing system.
- Take all required precautions when working in the systems multiple enclosed spaces and the gas chlorination room.

OPERATOR COMPLIANCE WITH STATE REQUIREMENTS:

Operator George Thomas is properly certified for the current size of Stevensville and is current on his continuing education credits needed to maintain certification.

If you have any questions about this report or public water supply regulations please give me a call at (406) 755-8985 ext 102

Sincerely,

Michael Kropp

Michael Kropp
Environmental Science Specialist
DEQ PWS Kalispell
Phone: (406) 755-8985 ext 102
Fax: (406) 755-8977

CC: Helena PWS file
Kalispell PWS file
George Thomas (operator)
Ravalli County files

Supplemental information attached: Example of good well cap
Franklin submersible maintenance booklet
Backflow prevention brochure

SANITARY SURVEY FORM - INVENTORY

2/15/05

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

DATE OF SURVEY 7/25/2008 | COUNTY Ravalli 081 | SURVEYOR NAME – Mike Kropp, DEQ PWS Kalispell

(SYSTEM REPRESENTATIVE) George Thomas | (OTHER REPRESENTATIVE) NA

SYSTEM ADDRESS – ADMINISTRATIVE CONTACT

Addressee George Thomas
Primary Address
Street PO Box 30 ____
City Stevensville State MT Zip 59870
System Phone (406)777-3341 Fax (____) ____

SYSTEM OWNER

Addressee Town of Stevensville
Owners Address
Street PO Box 30
City Stevensville State MT Zip 59870
Owner Phone (406) 777-5271 Fax (____) ____

LOCATION OF SYSTEM

Nearest City Stevensville Description or Physical Address Town of Stevensville

☐ seasonal operation dates:____to____
☒ year round operation

OPERATOR OF SYSTEM

Name George Thomas
Certified Operator? ☒ Yes ☐ No ☐ Not required
Copy of Certificate? ☒ Yes ☐ No Certification # 4568
Phone # (406) 777-5271 Cell Phone # (____) ____
Fax # (____) ____

ALTERNATE OPERATOR OF SYSTEM

Name Edward Sutherlin
Certified Operator? ☒ Yes ☐ No ☐ Not required
Copy of Certificate? ☐ Yes ☒ No Certification # 3931
Phone # (406) 777-5271 Cell Phone # (____) ____

SYSTEM STATUS

☒ A = Active ☐ P = Pending *(Add New System)*
☐ I = Inactive

SYSTEM CLASS

☒ C = Community
☐ NTNC = Non-Transient Non-Community
☐ TNC = Transient Non-Community

Total Service Connections: Residential / Non-Transient: 700
Transient:10

Total Active Connections: Residential / Non-Transient: 700
Transient: 10

Service Connections Metered? ☒ Yes ☐ No
Percent Metered 50 %

Resident Population 1,750
(Number of permanent residents utilizing PWS daily)

Non-Transient Population 20
(Maximum number of non-transient persons utilizing PWS daily)

Transient Population 150
(Maximum number of transient persons served by PWS daily)

OWNER TYPE

☐ 1 Federal Government
☐ 2 Private Subdivision, Investor, Trust, Cooperative, Water Association, etc.
☐ 3 State Government
☒ 4 Local Government Authority, Commission, District, Municipality, City, etc.
☐ 5 Mixed Public/Private
☐ 6 Native American

SERVICE AREA CHARACTERISTICS LIST

☐ BR Bar
☐ DC Day Care Center
☐ DI Dispenser
☐ HS Head Start
☐ HA Homeowners Assoc.
☐ HM Hotel/Motel
☐ HR Highway Rest Area
☐ IA Industrial/Agricultural
☐ IC Interstate Carrier
☐ IN Institution
☐ MF Medical Facility
☐ MH Mobile Home Park
☒ MU Municipality
☐ OA Other Area
☐ ON Other Non-Transient Area (____Average Daily Visitors TNC)
☐ OR Other Residential Area
☐ OT Other Transient Area
☐ PA Recreation Areas
☐ RA Residential Area
☐ RE Retail Employees
☐ RS Restaurant
☐ RV RV Park
☐ SC School
☐ SI Sanitary Improvement District
☐ SK Summer Camp
☐ SR Secondary Residences
☐ SS Service Station
☐ SU Subdivision
☐ WBWater Bottler
☐ WH Wholesaler (Sells Water)

Service Category Description MU - Municipality

Comments: This system will have a difficult time meeting LT1/LT2 and the upcoming GWR as it now operates. Surface water system with ground water wells in distribution that have high static, treatment , highly susceptable aquifer and are not disinfected. There is limited available choices for the installation of contacts tanks near the existing wells if the upcoming GWR requires 4 log inactivation prior to distribution. Distribution leaks exist but system does not know how severe they are because only +-50% of distribution is metered. The general cleanliness of the facilities is good, but there were virtually no improvements made since the 2005 sanitary survey.

SANITARY SURVEY FORM – WATER SYSTEM FACILITIES

PWSID **MT0000335**	SYSTEM NAME **Stevensville, Town of**

Water System Facilities (WSF) numbers are WSF Type Codes plus an assigned number. (i.e. source facility numbering starts with 002 and all non-source facilities start with 001). See instruction sheet for a list of WSF Type Codes. When a source is operational it is considered *A*ctive, this includes systems that are seasonal. *I*nactive sources are those which are shut down but can return to active status, such as a system out of business. *P*roposed sources are those that have been identified through the Plan Review process, but are not connected to the water system.

*A **water source facility** is a well, spring, intake, infiltration gallery or consecutive connections from which a system draws or purchases water:*	Total Number of Source Facilities 4

WATER SYSTEM FACILITIES SUMMARY (WSF)

WSF ID	Facility Name	Water Type Code	Purchased	Seller PWSID	Activity Status*
DS 001	Distribution System				
IN002	intake north Swamp Creek and Mill Creek	SW	☐ Yes ☒ No		active
WL003	Well 1 North	GW	☐ Yes ☒ No		active
WL004	Well 2 South Ave Mission St.	GW	☐ Yes ☒ No		active
WL005	Well 3 South	GW	☐ Yes ☒ No		active
TP001	TP for North Swamp Creek and Mill Creek		☐ Yes ☐ No		active
TP002	TP for Well 1		☐ Yes ☐ No		active
ST001	storage facility 500,000 gal		☐ Yes ☐ No		active
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		
			☐ Yes ☐ No		

Description of Water System Facility flow: North Swamp Creek and Mill Creek intake (IN002) to treatment plant (TP001) to storage facility (ST001) to distribution (DS001). Well 1 (WL003) to treatment plant (TP002) to distribution (DS001) to storage facility (ST001) to distribution (DS001). Well 2 (WL004) to distribution (DS001) to storage facility (ST001) to distribution (DS001). Well 3 (WL005) to distribution (DS001) to storage facility (ST001) to distribution (DS001).

Example: Well 1 (WL002) to common header (CH001), Well 2 (WL003) to common header (CH001) to treatment plant (TP001) to pressure control assembly (PC001) to distribution system (DS001) to storage tank (ST001) to distribution system (DS001).

*(A)Active, (I)Inactive, (P)Proposed

EMERGENCY POWER

Does the system have emergency power? ☒ Yes ☐ No

If yes, what type: _____

Record of primary power failures: ______ in last year

Frequency of testing: _____

Switchover: ☐ Automatic ☐ Manual

Comments: Operator said a portable emergency generator can be connected to TP001.

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE | **STATUS OF SOURCE** ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL003 *Entry Point ID* EP503
These are State assigned identification numbers

Source Name Well 1 North
Name of Source – Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 1 North
Name of EP – Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ TP002

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 400 gpm
indicate units

Maximum Production 400+ gpm
indicate units

Date Drilled 3/1/1957
if well.. date drilled

Casing Size 10"
size of casing installed in well

Case Depth 370'
depth of casing installed in well

Well Depth 460'
depth of well expressed in feet

Grout Depth unknown
depth of grout used to seal well walls

Log SWL 30'
(static) expressed in feet below ground elevation

Log PWL air tested
(pumping) expressed in feet below ground elevation

Test Pump Rate 400 gpm for 12 hrs
expressed in gallons per min

Intake Type drilled holes/open
type of intake mechanism

Screened Interval 362' to 370'
expressed in feet below ground elevation

Well Yield tested at 400 gpm
pump tested in gallons per minute

Latitude 46°30' 42.3"

Longitude 114°05' 34.6"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☒	☐	☐	☐
Is well site protected from flooding?	☒	☐	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☒	☐	☐	☐
If no . . explain _____				
Does casing extend at least				
☐18 inches above outside ground level;	☐	☐	☐	☐
☒12 inches above finished floor inside well house; and	☒	☐	☐	☐
☒3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☒	☐	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☒	☐	☐	☐
Treated	☒	☐	☐	☐
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☒	☐	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 50 hp submersible with VFD controls
(example: 30 hp line shaft turbine)
Rated Capacity 400+ gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? 2007			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☒	☐	☐	☐
Do underground compartments have a drain?	☐	☐	☐	☒
Is facility properly protected against trespassing and vandalism?	☒	☐	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☐	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: The wellhead looks to be in good condition.

Explain Controls: _____

Comment: Well pump size was increased in 1994 to a 50 hp vertical turbine pump capable of producing arround 500 gpm. A new submersible 50 hp pump assembly was installed near the beginning of 2007 complete with VFD controls that is capable of producing slightly over 400 gpm. I have no idea why this system installed VFD controls on a system that operates with storage facility level.

Montana Topographic Map Finder

The map is 1.86 miles wide.

Select a Map Co
then click on the

Choose Image Type

Topographic Map | Refresh

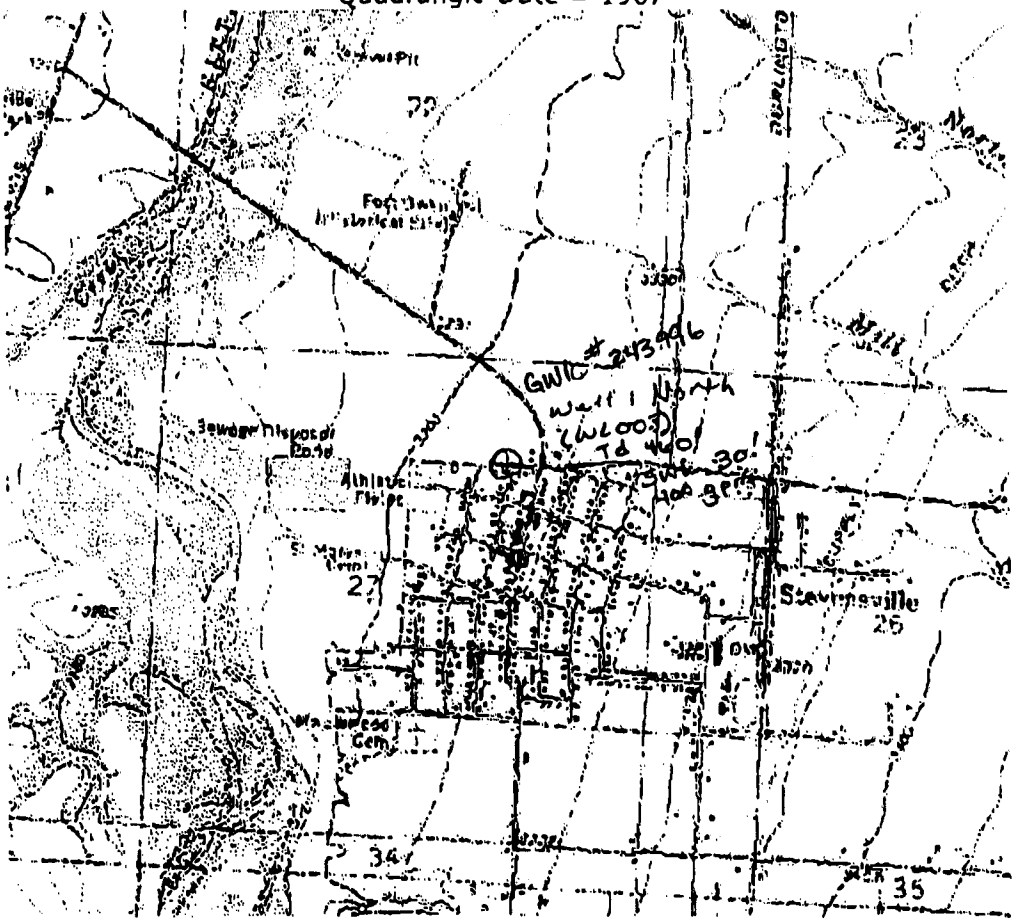
Map Contr

ZoomIn | Zoom I

ZoomOut | 3

New Center | Sta

Quadrangle Date = 1967



**Map Center Coor
at Red +**

Datum: NAD83

Decimal Degr
Lat 46.51245 Long

State Plan
E 247826 N 2

UTM Zone 1
E 722918 N 51

US National G
11T QM 22918 5

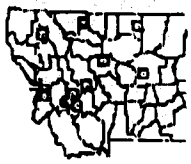
TRS T9N R20

Hydrologic Unit
Bitterroot Riv

Download 24K quadrangle:

Download 100K quadrangle:

**Click the small map to n
map center**



**Green squares show are
hi-resolution color
available.**

Legend | **He**

Map Size: Extra Large | Large | Small | Refresh

Search for

Click Here to view other map data for this area.

Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SOWES # WL003

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:07:20 PM)

NOTICE >> This well deepens GWIC Id 60163. << NOTICE

Site Name: CITY OF STEVENSVILLE
GWIC Id: 243996 well 1 north

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
09N	20W	27	SE¼ SE¼ NW¼ NE¼

County RAVALLI **Geocode**

Latitude	Longitude	Geomethod	Datum
46.512452	114.094126	TRS-SEC	NAD83

Altitude **Method** **Datum** **Date**

Addition **Block** **Lot**

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN DRILL

Section 5: Well Completion Date
Date well completed: Friday, March 01, 1957

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
117	412	10

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	455	10			WELDED	STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
362	370	10	18	1X3/8	DRILLED HOLES

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 460
Static Water Level: 30
Water Temperature:

Air Test *

400 gpm with drill stem set at 100 feet for 12 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level _ feet.

* *During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

From	To	Description
117	130	CLAY AND SAND
130	131	GRAVEL AND SAND
131	140	CLAY AND SAND
140	141	GRAVEL SAND AND WATER
141	150	CLAY AND SAND
150	164	SAND SOME CLAY
164	174	SAND SMALL HEAVING GRAVEL
174	178	HARD CLAY AND GRIT
178	190	BROWN CLAY WITH GRIT
190	219	GRANITE SOME CLAY
219	231	CLAY MIXED WITH GRAVEL
231	239	GRAVEL SOME CLAY
239	275	CLAY WITH GRIT
275	284	GRANITE
284	305	CLAY WITH GRIT

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: GLENN CAMP
Company:
License No: WWC-7
Date Completed: 3/1/1957

Site Name: CITY OF STEVENSVILLE
GWIC Id: 243996
Additional Lithology Records

From	To	Description
305	314	GRANITE
314	319	CLAY
319	324	GRANITE
324	330	SAND SMALL GRAVEL
330	344	SAND
344	347	PEAT
347	350	CLAY
350	357	CLAY
357	370	SAND WITH GRAVEL
370	380	CLAY
380	389	GRAVEL AND SAND
389	412	CLAY
412	413	GRANITE
413	416	CLAY
416	417	GRANITE
417	427	CLAY
427	428	MEALY SAND
428	434	GRANITE
434	438	CLAY AND SAND
438	440	SAND
440	453	GRANITE
453	460	CLAY SAND
460	480	CLAY AND SAND

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE | **STATUS OF SOURCE** ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL004 *Entry Point ID* EP504
These are State assigned identification numbers

Source Name Well 2 South Ave Mission St.
Name of Source – Example: Well 1 or South well, etc

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 1 North
Name of EP – Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ WL004

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 220 gpm (indicate units)

Maximum Production 220 gpm (indicate units)

Date Drilled 2/13/1968 (if well. . date drilled)

Casing Size 8" (size of casing installed in well)

Case Depth 56' (depth of casing installed in well)

Well Depth 56' (depth of well expressed in feet)

Grout Depth unknown (depth of grout used to seal well walls)

Log SWL 30' (static) expressed in feet below ground elevation

Log PWL unknown (pumping) expressed in feet below ground elevation

Test Pump Rate 300 gpm for 3 hrs (expressed in gallons per min)

Intake Type holes (type of intake mechanism)

Screened Interval 36' to 56' (expressed in feet below ground elevation)

Well Yield tested at 300 gpm (pump tested in gallons per minute)

Latitude 46°30' 18"

Longitude 114°05' 46.7"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☐	☒	☐	☐
Is well site protected from flooding?	☐	☒	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☐	☒	☐	☐
If no . . explain Wellhead in vault is not protected from surrounding contaminants.				
Does casing extend at least				
☒18 inches above outside ground level;	☐	☒	☐	☐
☒12 inches above finished floor inside well house; and	☐	☒	☐	☐
☒3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☒	☐	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☒	☐	☐	☐
Treated	☐	☐	☐	☒
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☐	☒	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 20 hp submersible
(example: 30 hp line shaft turbine)
Rated Capacity 220 gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? unknown			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☐	☒	☐	☐
Do underground compartments have a drain?	☐	☒	☐	☐
Is facility properly protected against trespassing and vandalism?	☐	☒	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☒	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: Wellhead is located in a vault with electrical components, wellhead and well vent outlet that are all below flood rim. The well vault is not adequately vented, poorly sealed and does not have a permanent ladder affixed to the wall.

Explain Controls: Storage facility water level triggers Well 2 operation.

Comment: Electrical controls in a vault that is dependent on a sump pump to eliminate water can not be considered adequately protected.

Montana Topographic Map Finder

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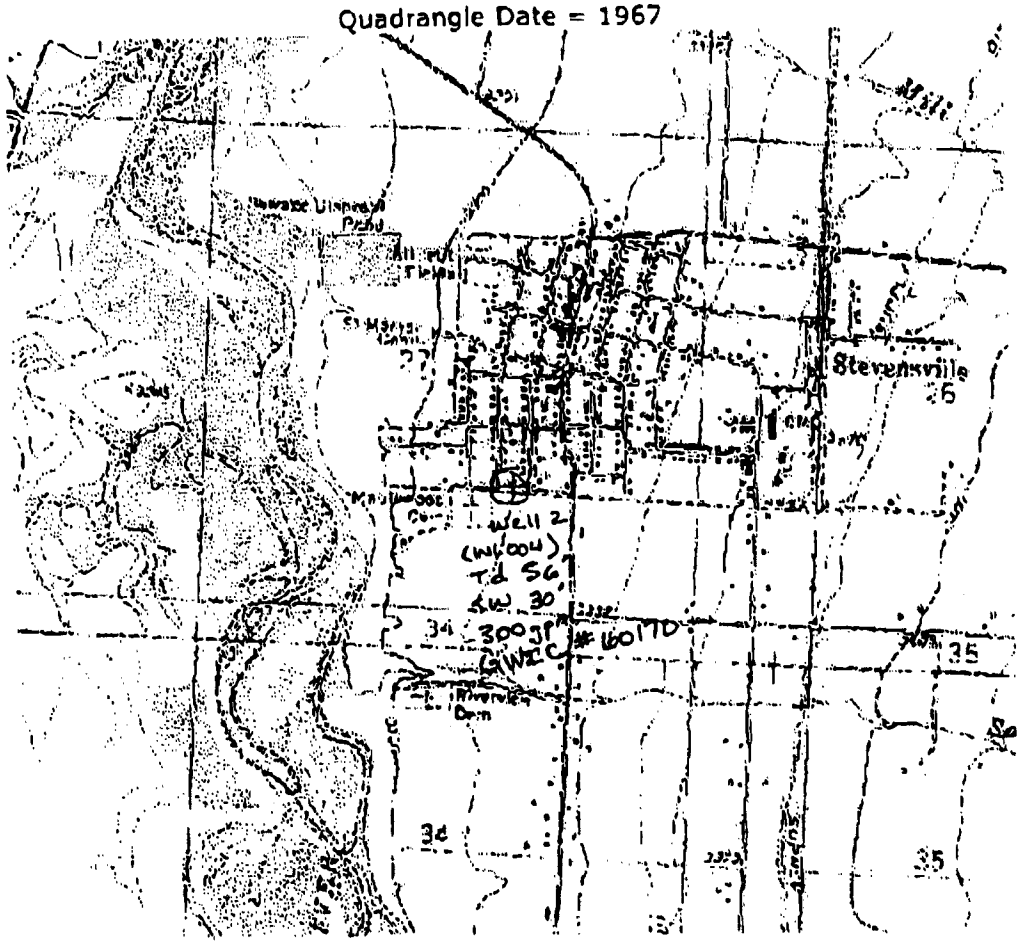

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State Plan
E 247726 N 2

UTM Zone 1
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TRS T9N R20

Hydrologic Unit
Bitterroot Riv

Download 24K quadrangle:

Download 100K quadrangle:

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Click Here to view other map data for this area.

Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SDWIS #WL004

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:16:45 PM)

Site Name: CITY OF STEVENSVILLE - WELL X (Mk)
GWIC Id: 60170
DNRC Water Right: P007286-00

Known as: Well 2 South Ave Mission St.

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
09N	20W	27	SE¼ SE¼ NW¼ SE¼

County: RAVALLI
Geocode:

Latitude	Longitude	Geomethod	Datum
46.505	114.0948	MAP	NAD27

Altitude	Method	Datum	Date

Addition **Block** **Lot**

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN

Section 5: Well Completion Date
Date well completed: Tuesday, February 13, 1968

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	56	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	56	8				32 LB STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
36	56	6			1/4 X 4 HOLES

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 56
Static Water Level: 30
Water Temperature:

Bailer Test *

300 gpm with _ feet of drawdown after 3 hours.
Time of recovery .. hours.
Recovery water level _ feet.
Pumping water level 36 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

From	To	Description
0	1	TOPSOIL
1	10	SAND GRAVEL
10	29	SAND GRAVEL LARGE GLACIAL BOULDERS TIGHT PRESSED
29	56	SAND GRAVEL LOOSE WB

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: RAVALLI DRILLING
License No: WWC-62
Date Completed: 2/13/1968

SANITARY SURVEY FORM – WELLS & WELL PUMPS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

(Please copy this sheet for additional wells & pumps)

COMPLETE ONE PAGE FOR EACH SOURCE

STATUS OF SOURCE ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID WL005 (These are State assigned identification numbers) *Entry Point ID* EP505

Source Name Well 3 South (Name of Source – Example: Well 1 or South well, etc.)

Location of Water Source (TRS or street address) 09N 20W sec27

Entry Point Name EP for Well 2 South (Name of EP – Example: Entry point for North Well 1 & South Well 2)

Location of Entry Point EP @ WL005

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed ☒ Yes ☐ No

Log Available? ☒ Yes ☐ No

Average Production 220 gpm (indicate units)

Maximum Production 220 gpm (indicate units)

Date Drilled 2/6/1976 (if well. . date drilled)

Casing Size 8" (size of casing installed in well)

Case Depth 75' (depth of casing installed in well)

Well Depth 75' (depth of well expressed in feet)

Grout Depth 35' natural grout (depth of grout used to seal well walls)

Log SWL 29' (static) expressed in feet below ground elevation

Log PWL unknown (pumping) expressed in feet below ground elevation

Test Pump Rate 70 gpm for 1 hr (expressed in gallons per min)

Intake Type two sets of slots (type of intake mechanism)

Screened Interval 40' to 50' and 55' tp 75' (expressed in feet below ground elevation)

Well Yield tested at 70 gpm (pump tested in gallons per minute)

Latitude 46°30' 15.3"

Longitude 114°05' 47"

WELLS

	Yes	No	Unk	N/A
Is well metered?	☐	☒	☐	☐
Is well site protected from flooding?	☐	☒	☐	☐
Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)?	☐	☒	☐	☐

If no . . explain Wellhead in vault is not protected from surrounding contaminants.

Does casing extend at least				
☒18 inches above outside ground level;	☒	☐	☐	☐
☐12 inches above finished floor inside well house; and	☐	☐	☐	☐
☒3 feet above 100 year flood elevation? (Check for appropriate distance)	☐	☐	☒	☐
Is top of the well casing properly sealed? (sanitary seal)	☐	☒	☐	☐
Is well vented?	☒	☐	☐	☐
Is well vent properly screened and terminated in a downward position?	☒	☐	☐	☐
Does well have suitable sampling tap? Raw Water	☐	☒	☐	☐
Treated	☐	☐	☐	☒
Are check valves, blow-off valves and water meters maintained and operating properly?	☒	☐	☐	☐
Is upper termination of well protected (housed or fenced)?	☐	☒	☐	☐
Is intake located below the maximum drawdown?	☐	☐	☒	☐

PUMPS

Type 20 hp submersible (example: 30 hp line shaft turbine)
Rated Capacity 220 gpm

	Yes	No	Unk	N/A
Are pumps operable?	☒	☐	☐	☐
How frequently are pump(s) replaced? unknown			☐	☐
Are backup pumps/motors provided?	☐	☒	☐	☐
Are controls functioning properly and adequately protected?	☐	☒	☐	☐
Do underground compartments have a drain?	☐	☒	☐	☐
Is facility properly protected against trespassing and vandalism?	☐	☒	☐	☐
Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)?	☐	☒	☐	☐
Is the plumbing adequately painted to prevent excessive corrosion?	☐	☒	☐	☐
Are adequate heating, lighting, and ventilation provided?	☐	☒	☐	☐
Is a preventive maintenance program in operation?	☐	☒	☐	☐
Are recommended spare parts on hand?	☐	☒	☐	☐
Cross connection protection provided?	☐	☒	☐	☐

Comment: Wel log shows this well was tested at 70 gpm but now has a submersible pump capable of producing 220 gpm. I did not find a capacity test supporting this increased pump size. Poorly vented control valve vault without a ladder permanently afixed to the wall. The valve vault has a noteable amount of garbage in the bottom. No security at the wellhead. Split style well cap is not a good sanitary seal for outdoor use.

Explain Controls: _____

Comment: Pump controls are currently operating adequately but are located on a post next to the control vault and is not protected from vandalism.

MONTANA WELL LOG REPORT

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Other Options

Plot this site on a topographic map
View scanned document (6/9/2008 7:17:10 PM)

Site Name: CITY OF STEVENSVILLE - WELL ~~#~~ (MW-)
GWIC Id: 60172
DNRC Water Right: P009186-00
Known as: Well 3 South

Section 1: Well Owner

Owner Name
CITY OF STEVENSVILLE
Mailing Address

City	State	Zip Code
STEVENSVILLE	MT	59870

Section 2: Location

Township	Range	Section	Quarter Sections
09N	20W	27	NW¼ NE¼ SW¼ SE¼

County RAVALLI **Geocode**

Latitude	Longitude	Geomethod	Datum
46.5044	114.0948	MAP	NAD27

Altitude	Method	Datum	Date
3322			

Addition **Block** **Lot**

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CABLE

Section 5: Well Completion Date
Date well completed: Friday, February 06, 1976

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	75	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	75	8				24 LB STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
40	50	8			3/8 IN SLOTS
55	75	8		5 IN	SLOTS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	35	NATURAL	

Section 7: Well Test Data

Total Depth: 75
Static Water Level: 29
Water Temperature:

Bailer Test *

70 gpm with _ feet of drawdown after 1 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 30 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks
3 FT GRAVEL PACK

Section 9: Well Log

Geologic Source
110ALVM - ALLUVIUM (QUATERNARY)

From	To	Description
0	3	TOPSOIL
3	26	SAND GRAVEL BOULDERS BROWN
26	51	SAND & GRAVEL WB BROWN
51	60	CLAY & GRAVEL
60	75	SAND & GRAVEL WB BROWN

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: RAVALLI DRILLING
License No: WWC-62
Date Completed: 2/6/1976

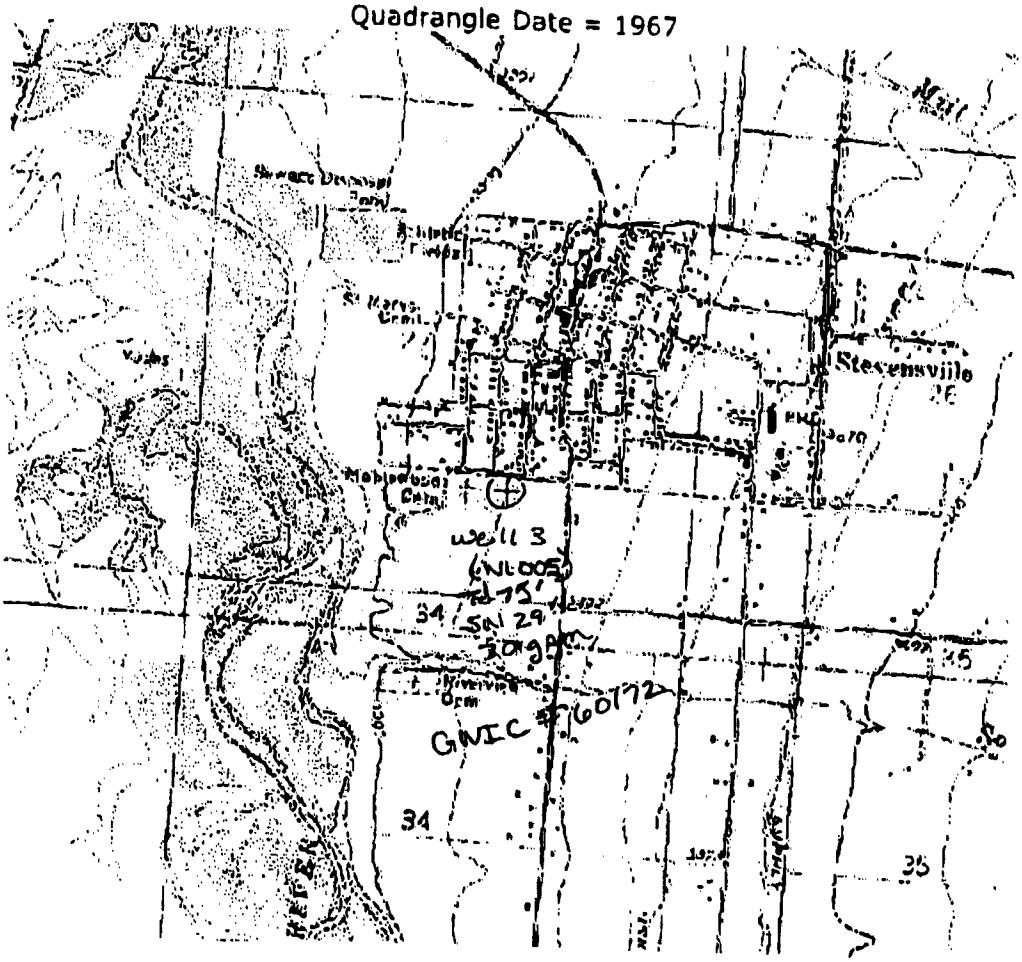
Montana Topographic Map Finder

The map is 1.86 miles wide.

Choose Image Type

Topographic Map | Refresh

Quadrangle Date = 1967



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TRS T9N R20

Hydrologic Unit
Bitterroot Riv

Download 24K quadrangle:

Download 100K quadrangle:

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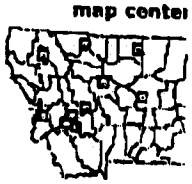

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Map Size: Extra Large | Large | Small | Refresh

Click Here to view other map data for this area.

Montana Natural Resource Information System

Technical questions about the application can be directed to: nris@m
Please let us know if you have problems with the Topofinder!!

SANITARY SURVEY FORM - SURFACE WATER, SPRINGS & INFILTRATION GALLERIES

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

SOURCES

STATUS OF SOURCE ☒ (A)ctive ☐ (I)nactive ☐ (P)roposed

WSF ID IN002 *Entry Point ID* EP502
These are State assigned identification numbers

Source Name intake North Swamp Creek and Mill Creek
Name of Source - Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address) 09N 19W sec31

Entry Point Name EP for North Swamp Creek and Mill Creek
Name of EP - Example: Entry point for North Well 1 & South Well 2

Location of Entry Point EP @ TP001

Available ☒ Perm ☐ Emerg ☐ Interim ☐ Seasonal ☐ Other
If seasonal: _____ to _____

GWUDISW PA Completed? ☒ Yes ☐ No ☐ Unk ☐ N/A

Average Production varies
indicate units

Maximum Production +-800 gpm TP001 maximum output.
indicate units

Latitude 46°29' 58.8"
Longitude 114°02' 23.4"

SURFACE SOURCES

What is the nature of watershed?

☐ Agricultural
☐ Industrial
☐ Forest
☐ Residential
☒ Other Hay field

Name North Swamp Creek and Mill Creek intake

What is the size of the owned/protected area of the watershed? 26 acres

How is watershed controlled?
☒ Ownership
☐ Ordinances
☐ Zoning
☐ Other _____

	Yes	No	Unk	N/A
Has a source water protection plan been developed?	☐	☒	☐	☐
Has management had a watershed survey performed?	☐	☒	☐	☐
Is there an emergency spill response plan?	☐	☒	☐	☐
Is the source adequate in quantity?	☒	☐	☐	☐
Is the source adequate in quality?	☒	☐	☐	☐
Is the intake protected from sources of contamination?	☐	☒	☐	☐
Are multiple intakes, located at different levels, utilized?	☐	☒	☐	☐
Is the highest quality water being drawn?	☒	☐	☐	☐
Can the raw water transmission line bypass treatment?	☐	☒	☐	☐

How often are intakes inspected? as needed

What conditions cause fluctuations in quality? Runoff and large rain events.

Comment: A series of shallow buried laterals located in a 26 acre hay field diverts water from North Swamp Creek and Mill Creek vicinity to concrete caissons and then piped to the surface water treatment plant. High ground water levels prevents much in terms of construction in this area.

SPRINGS & INFILTRATION GALLERIES

	Yes	No	Unk	N/A
Is recharge area protected?	☒	☐	☐	☐

If Yes, how? 26 acre ownership

☒ Ownership
☐ Fencing
☐ Ordinances
☐ Other _____

What is the nature of recharge zones?

☐ Agricultural
☐ Industrial
☐ Forest
☐ Residential
☒ Other Hay field

Is site protected from flooding?	☐	☒
Is there diversion of surface drainage from site?	☐	☒
Is collection chamber properly constructed?	☐	☐
Does hatch cover overlap?	☒	☐
Is the overflow outlet screened?	☐	☐
Vented and screened?	☐	☐
Is supply intake adequate?	☒	☒
Is site properly protected (from livestock, vandalism, tampering, etc)?	☐	☒

What conditions cause changes to quality of the water? runoff and large rain events

Comment: This intake is more of a infiltration gallary and is highly susceptable to area water level fluctuations. The intake is generally acceptable, with the exception of during runoff and heavy rains.

SANITARY SURVEY FORM - TREATMENT

PWSID MT0000335

SYSTEM NAME Stevensville, Town of

Treatment Objective

B = Disinfection Byproduct Control
C = Corrosion Control
D = Disinfection
E = Dechlorination
F = Iron Removal
I = Inorganics Removal
M = Manganese Removal
N = *No Treatment at Source*
O = Organics Removal
P = Particulate Removal
R = Radionuclides Removal
S = Softening (Hardness Removal)
T = Taste / Odor Control
Z = Other _____

WATER TREATMENT FACILITIES

WSF ID	Treatment Plant Name	Treatment Objectives and Code
TP001	TP for North Swamp Creek and Mill Creek	P240 P345 P660 DD401 C445
TP002	TP for well 1	C445

WSF ID	Location
	Latitude ° ' " Longitude ° ' "
TP001	Latitude 46°30' 03.2" Longitude 114°02' 45.6"
TP002	Latitude 46°30' 44.3" Longitude 114°05' 33"
	Latitude ° ' " Longitude ° ' "
	Latitude ° ' " Longitude ° ' "

Treatment plant description: There are potentially two points of gas chlorine injection @ TP001 (1. Between alum injection and sand filter 2. After sand filter). Chlorine level monitoring point is located after storagein a poorly vented vault that has high ground water. The vault i s approximately 180 feet from the monitoring equipment and air lock has been an issue on the monitoring pump. Chlorine injection point immediately after alum injection is rarely used. The gas chlorination room remains substandard in terms that is does not have a panic bar on the door, excessive rust, inadequate ventilation and no scale under the tanks. PLANT: Raw water basin to alum (Aqua Hawk 2757) feeder to static mixer to optional gas chlorine injection point (not currently used) single sand filter to distribution. There is no line in place that can bypass TP001. See attached schematic.

FOR SYSTEMS EMPLOYING FULL-TIME DISINFECTION

	Yes	No	Unk	N/A
What disinfectant is used? gas chlorine				
Is the disinfectant used NSF approved?	☒	☐	☐	☐
Is the amount of disinfectant used recorded? If Yes, amount used: _____lbs/day _____ ppm _____ other (give units)	☐	☒	☐	☐
Is the amount of disinfectant used compared to water pumped to verify concentration?	☐	☒	☐	☐
Is chemical storage adequate and safe? If No, explain _____	☒	☐	☐	☐
Is disinfectant residual being monitored daily?	☒	☐	☐	☐
Are residual reports submitted monthly?	☒	☐	☐	☐
Is the disinfection equipment being operated and maintained properly?	☒	☐	☐	☐
Is operational standby equipment provided?	☐	☒	☐	☐
If not, are critical spare parts on hand?	☒	☐	☐	☐
Has disinfection system been free from failure during the past year – no interruption?	☐	☒	☐	☐

If No, give dates of interruptions No dates given. Booster chlorine pump in the vault immediately after storage has failed in the past. This same pump tends to air lock.

Describe provisions for providing contact time between disinfection point and the first point of use: The 500,000 gallon storage facility is located immediately after chlorine injection and approximately miles of line to get to Stevensville.

IF USING GAS CHLORINATION

	Yes	No	Unk	N/A
Is a manifold provided to allow feeding gas from more than one cylinder?	☒	☐	☐	☐
Is there automatic switchover from cylinder to cylinder?	☒	☐	☐	☐
Are scales provided for weighing of containers?	☐	☒	☐	☐
Are chlorine storage and use areas isolated from other work areas?	☒	☐	☐	☐
Are stored cylinders capped and labeled?	☒	☐	☐	☐
Is room vented to the outdoors with suction located no more than 6 inches above the floor level?	☐	☒	☐	☐
Is vent inlet near the ceiling?	☐	☒	☐	☐
Is room containing chlorination treatment labeled sufficiently (DANGER signs, etc.)?	☐	☒	☐	☐
Is a view port provided into the room storing chlorine?	☒	☐	☐	☐
Is a means of leak detection provided? Type? ammonia	☒	☐	☐	☐
Is a self-contained breathing apparatus available for use during repair of leaks? Where? Main TP control room	☒	☐	☐	☐
Are personnel trained to use apparatus?	☒	☐	☐	☐
Are all doors hinged outward and equipped with panic bars?	☐	☒	☐	☐
Are all gas cylinders restrained near the top and about half way down by chaining to wall or by other means?	☒	☐	☐	☐

Comment: Outlet vent was near the floor but did not open properly and is currently inadequate. Chlorine gas has eaten the bottom of the metal door. No panic bar on the door. Not scale under the chlorine tanks currently in use. Chlorine room inlet vent is low and in the door. The surface water source is required to treat water and meet CT for disinfection while existing wells do not currently disinfect. DEQ rules also require disinfection after treatment and Well 1 treats with orthophosphate without disinfection.

SANITARY SURVEY FORM - SURFACE WATER TREATMENT PLANTS
(Direct and Conventional and other)

PWSID **MT0000335**

SYSTEM NAME **Stevensville, Town of**

Latitude 46°30' 03.2" Longitude 114°02' 45.6"

Type: ☐Direct ☐In-Line ☒Conventional ☐CAC ☐Other (describe) _____

Peak instantaneous flow experienced: plant capacity is approximately 800gpm

	Chemicals Added	Points of Application	Purpose	Feed Rate (range)
1)	AquaHawk 2757 (alum)	TP001 EP	coagulation	_____
2)	orthophosphate	TP001 outlet	inhibitor	_____
3)	gas chlorine	TP001 outlet	disinfection	_____
4)	_____	_____	_____	_____
5)	_____	_____	_____	_____

How are process control decisions made? Tubidity and chlorine residual levels. Anticipation of high turbidities correlate with spring runoff, heavy rains and other large events and the plant is not used during these periods.

Describe the following unit processes:

Rapid Mix: AquaHawk 2757 (alum) has a rapid mixer immediately after injection.

Flocculation:

Theoretical hydraulic detention time:_____Min

Tapered? ☐ Yes ☐ No

Description: _____

Sedimentation:

Surface overflow rate: unknown gpm/ft^2

Description: Sedimentation basin at TP001 inlet. Excess water to waste.

Filters:

Type: ☒Rapid Sand ☐Dual Media ☐Multi-media ☐Other (describe) _____

Depth of Media: 7" sand over 5" pea gravel

Surface wash? ☒ Yes ☐ No If Yes, type: travelling bridge backwash

Air scour? ☐ Yes ☐ No

Disinfection

Log inactivation credit granted: unknown log

Inactivation required: _____log

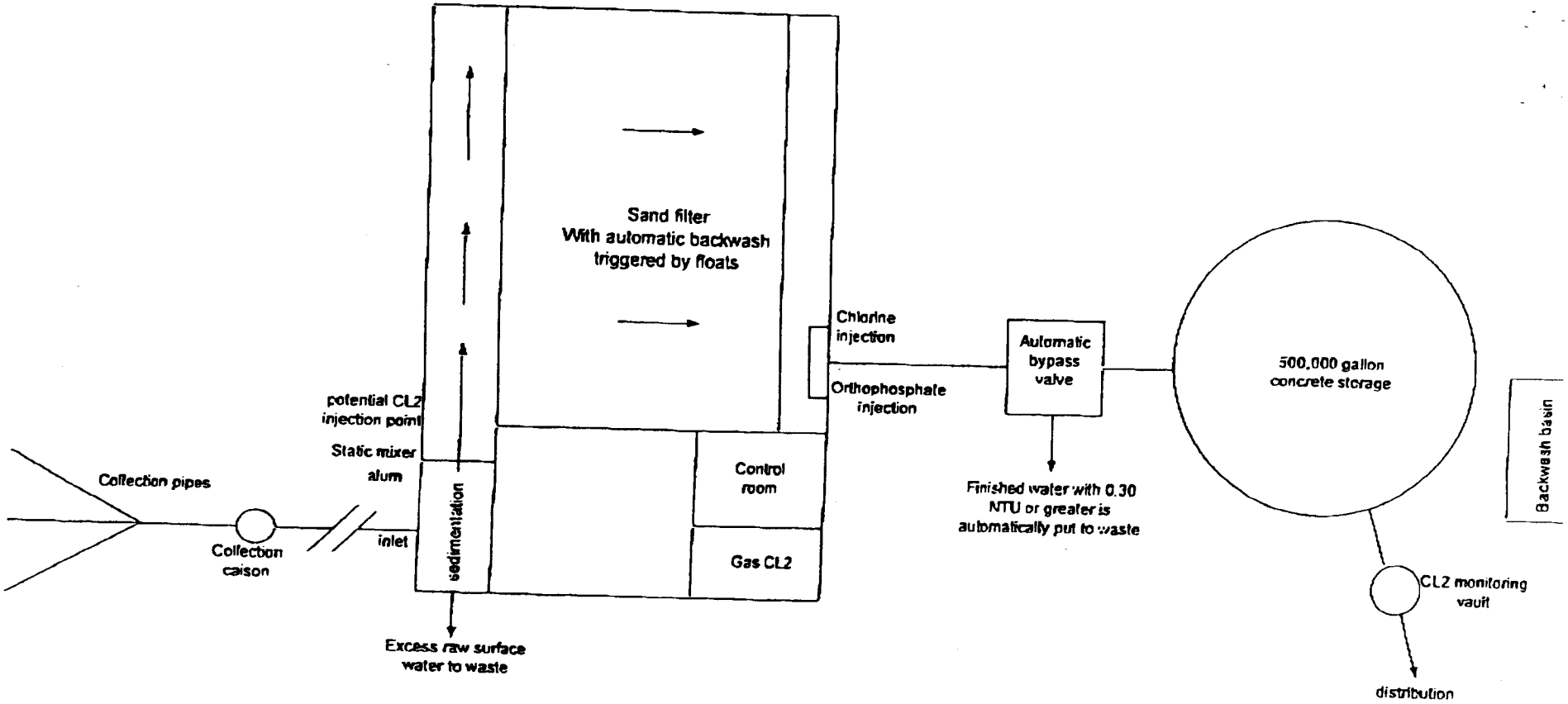
Total reduction: _____log

Is CT adequate under all conditions of flow, temperature and pH? ☐ Yes ☐ No ☒ Unk

Explain: Conditions vary and if the turbidity runs too high the plant is not used.

Comments on process control and finished water quality: There is a 2,200 gallon sedimentation basin at the inlet to TP001 to catch sand, silt, etc.. Surplus water runs over a concrete wall and to a nearby creek drainage. The pipe outlet to the creek was not found and the presence of a screen or flapper cover was not determined.

If a CPE is needed, please comment:_____


Sand filter
With automatic backwash
triggered by floats
Chlorine
injection
Orthophosphate
injection
Automatic
bypass
valve
500,000 gallon
concrete storage
Backwash basin
potential CL2
injection point
Static mixer
alum
Collection pipes
Collection
caison
inlet
sedimentation
Control
room
Gas CL2
Finished water with 0.30
NTU or greater is
automatically put to waste
CL2 monitoring
vault
Excess raw surface
water to waste
distribution

SANITARY SURVEY FORM - STORAGE

PWSID **MT0000335** | SYSTEM NAME **Stevensville, Town of**

COMPLETE ONE SECTION FOR EACH STORAGE FACILITY

Total storage provided? 500,000 gallons | How much treated storage is provided 500,000 gallons | Storage provides 1.5 days days of water reserve

STORAGE FACILITY

WSF ID ST001

Location: Description +- 3 miles east of Stevensville
Latitude: 46°30' 02.9" Longitude: 114°02' 44.9"

Storage Volume? 500,000 gallons
Year constructed: unknown
Condition: ☐Good ☒Fair ☐Poor

	Yes	No	Unk	N/A
Does surface runoff and underground drainage drain away?	☐	☐	☒	☐
Is the site protected against flooding?	☐	☒	☐	☐
Is the site protected against trespass/vandalism?	☒	☐	☐	☐
Ladders caged and locked?	☐	☐	☐	☒
Are overflow lines, air vents, drainage lines or clean out pipes turned downward or covered, screened and terminated a minimum of 3 diameters above the ground or storage tank surface?	☐	☐	☒	☐
Overflow pad?	☐	☐	☒	☐
Is access hatch sealed properly and locked?	☐	☐	☐	☐
Are surface coatings in contact with water ANSI / NSF approved?	☐	☐	☐	☐
Is tank protected against icing and corrosion?	☒	☐	☐	☐
Can tank be isolated from system?	☐	☐	☐	☐
Is all treated water storage covered?	☒	☐	☐	☐
Are tanks disinfected after repairs are made?	☒	☐	☐	☐
What is cleaning frequency for tanks? Last cleaned in 2004				
Is tank inspected every 5 years by a structural engineer for structural integrity?	☐	☒	☐	☐

____ Date of last inspection ____ By whom

Comments: Pre-stressed concrete panels were installed on ST001 in 1978. Not sure what the sealant material is or if it's NSF approved. The roof sealant is in need of replacement or repair. There are large cracks and missing chunks in the roof sealant. The concrete tank is partially buried and is likely sitting in high ground water based on the GW level in the nearby vault. Operator isn't sure where the overflow outlet is located. The overflow would probably never be used because it appears the storage tanks flood rim is higher than the treatment plant filter bed. This eliminates overflowing the storage to remove material from the top of the water surface.

STORAGE FACILITY

WSF ID ____

Location: Description ____
Latitude: ____° ____ ' ____ " Longitude: ____° ____ ' ____ "

Storage Volume? _____gallons
Year constructed: ____
Condition: ☐Good ☐Fair ☐Poor

	Yes	No	Unk	N/A
Does surface runoff and underground drainage drain away?	☐	☐	☐	☐
Is the site protected against flooding?	☐	☐	☐	☐
Is the site protected against trespass/vandalism?	☐	☐	☐	☐
Ladders caged and locked?	☐	☐	☐	☐
Are overflow lines, air vents, drainage lines or clean out pipes turned downward or covered, screened and terminated a minimum of 3 diameters above the ground or storage tank surface?	☐	☐	☐	☐
Overflow pad?	☐	☐	☐	☐
Is access hatch sealed properly and locked?	☐	☐	☐	☐
Are surface coatings in contact with water ANSI / NSF approved?	☐	☐	☐	☐
Is tank protected against icing and corrosion?	☐	☐	☐	☐
Can tank be isolated from system?	☐	☐	☐	☐
Is all treated water storage covered?	☐	☐	☐	☐
Are tanks disinfected after repairs are made?	☐	☐	☐	☐
What is cleaning frequency for tanks? ____				
Is tank inspected every 5 years by a structural engineer for structural integrity?	☐	☐	☐	☐

____ Date of last inspection ____ By whom

Comments: ____

SANITARY SURVEY FORM - MISCELLANEOUS

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

DISTRIBUTION SYSTEM EVALUATION

Distribution description DS001- Ductile Iron and PVC

	Yes	No	Unk	N/A
System drawings available?	☒	☐	☐	☐
Accurate As-Built drawing(s) on-site?	☒	☐	☐	☐
Lines adequately sized?	☐	☐	☒	☐
Adequate pressure maintained?	☒	☐	☐	☐
Mains protected from freezing?	☒	☐	☐	☐
Distribution system free of leaks?	☐	☒	☐	☐
Asbestos concrete pipe used?	☐	☒	☐	☐
Fire hydrants?	☒	☐	☐	☐
Dead end lines minimized by looping mains?	☐	☐	☐	☐
Flushing program?	☒	☐	☐	☐
Pressure reducing stations? Number ____	☐	☒	☐	☐
Booster stations? Number ____	☐	☒	☐	☐
Are individual booster pumps on any service lines? (see DEQ-1 8.9.2)	☐	☒	☐	☐
Were cross connections observed?	☐	☐		

Comments: Potential cross connections include well 1 to irrigation with only an inline double check valve, bypass outlet, storage tank overflow outlet, excess raw water outlet.

SAFETY

	Yes	No	Unk	N/A
Were confined spaces observed?	☒	☐	☐	☐

Describe any confined spaces observed Well 2 vault, well 3 control vault, chlorine monitoring vault near the storage facility, storage faciltiy and substandard chlorine treatment room.

Confined space safety adequate?	☐	☒	☐	☐
Fall risks adequately mitigated?	☐	☒	☐	☐

Note all safety deficiencies (consider items such as ladders, tank supports, guards on rotating electrical equipment, lightning protection for pumps, etc.) No permanent ladder in well 2 vault or well 3 control vault. Sump pumps in vaults to remove high ground water. The TP001 gas chlorine room does not meet standards and poses enclosed space concerns.

MONITORING AND RECORDKEEPING EVALUATION

	Yes	No	Unk	N/A
Does the system have a current Monitoring Schedule?	☒	☐	☐	☐
Bacti monitoring records maintained? (5 years)	☒	☐	☐	☐
Bacti Sample Site Plan submitted?	☒	☐	☐	☐
Familiar with repeat sampling?	☒	☐	☐	☐
Chemical monitoring records maintained? (10 years)	☒	☐	☐	☐
System specific records / plans maintained? (DBP, PB/CU, treatments, waivers, violations, etc.)	☒	☐	☐	☐
Familiar with Public Notice requirements?	☒	☐	☐	☐
Did Surveyor take a bacteriological sample?	☐	☒		

If Yes, date of Sample: ____ Time of Sample: ____

Comments: Record keeping appears adequate at this time. LT1/LT2 and GWR will have major issues for the system and management to address that could prove to costly.

MANAGEMENT

	Yes	No	Unk	N/A
Are there sufficient personnel?	☒	☐	☐	☐
Are operators properly certified?	☒	☐	☐	☐
Are personnel adequately trained?	☒	☐	☐	☐
Is there a current O&M manual on-site?	☒	☐	☐	☐
Is an emergency plan on-site and workable?	☒	☐	☐	☐
Has system addressed concerns from previous sanitary survey(s) or technical visit(s)?	☐	☒	☐	☐
Budget exists?	☒	☐	☐	☐
Does system maintain an emergency fund?	☐	☒	☐	☐
Does system contribute to facility replacement fund?	☒	☐	☐	☐
Are abandoned wells present?	☒	☐	☐	☐
Do abandoned wells appear to be properly abandoned? (see ARM 36.21.670)	☐	☒	☐	☐

Comments: Very few items from previous sanitary survey have been addressed.

PWSID MT0000335 | SYSTEM NAME Stevensville, Town of

The State, or an authorized agent, must conduct sanitary surveys for all public water supply systems in Montana. DEQ believes that periodic sanitary surveys, along with appropriate corrective actions, are indispensable for assuring the long-term quality and safety of drinking water. When properly conducted, sanitary surveys can provide important information on a water system's design and operations and can identify minor and significant deficiencies for correction before they become major problems.

Minor deficiencies do not pose serious health threats. However, corrective action of minor deficiencies can be critical in the long-term operation and safety of a public water system. Minor deficiencies are generally described as suggested or recommended corrections in the letter to system owner(s).

Significant deficiencies can be defined as a defective water supply component(s) having or likely to have an adverse influence on public health. Significant deficiencies require immediate corrective action in efforts to protect consumers.

EPA and ASDWA guidance identifies eight broad components that should be covered in a sanitary survey. Using these eight broad components as a guide, minor and significant deficiencies should be described in the letter to system owner(s).

1) Source
2) Treatment
3) Distribution system
4) Finished water storage
5) Pumps, pump facilities, and controls
6) Monitoring and reporting, and data verification
7) System management and operation
8) Operator compliance with State requirements

With consideration that significant deficiencies may influence regulatory decisions and monitoring requirements, please list all significant deficiencies observed and corrective action(s) taken below.

Comments: ____

*** Required full time disinfection of what is considered a surface water source means all sources must disinfect to maintain adequate residual in distribution. The three ground water wells currently do not disinfect. LT1, LT2 and the upcoming GWR reaffirm the need for treatment. The GWR (Dec. 2009) may eventually require 4 log removal of viruses prior to the entry point of each of the ground water well if they are determined to be highly susceptable. (Please consider: Well 2 is located in a vault, has intake holes that begin at 36' and a total depth of 56'. Well 3 has intake holes beginning at 40' and a total depth of 75'. Both these sources are in unconfined aquifers composed primarily of gravel, boulders and sand. Well 1 is significantly deeper, but injects orthophosphate without subsequent disinfection.)**

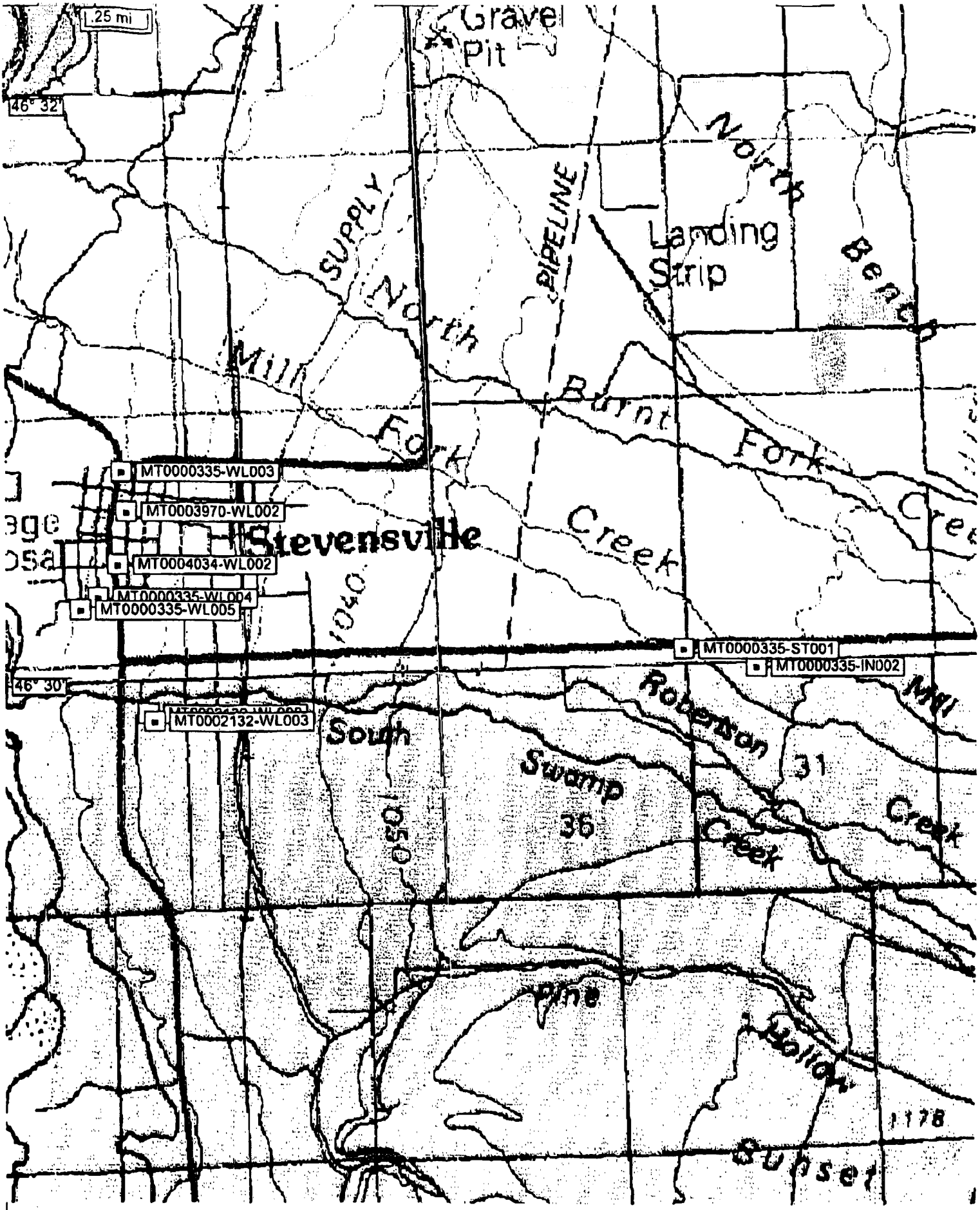
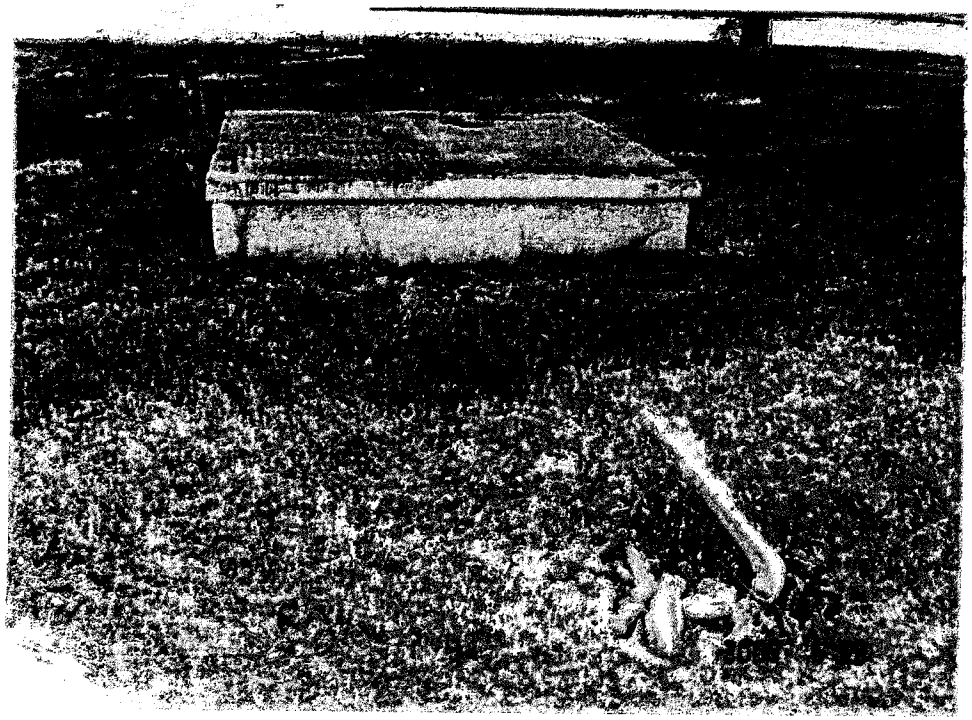

.25 mi
Gravel Pit
46° 32'
North Supply Line
Landing Strip
Mill
Burnt Fork
Creek
MT0000335-WL003
MT0003970-WL002
Stevensville
MT0004034-WL002
MT0000335-WL004
MT0000335-WL005
MT0000335-ST001
MT0000335-IN002
46° 30'
MT0002132-WL003
South
Swamp
Robertson
Creek
Pine
Bunker
Sunset

EXHIBIT 11
DATE Jan 16, 09
11

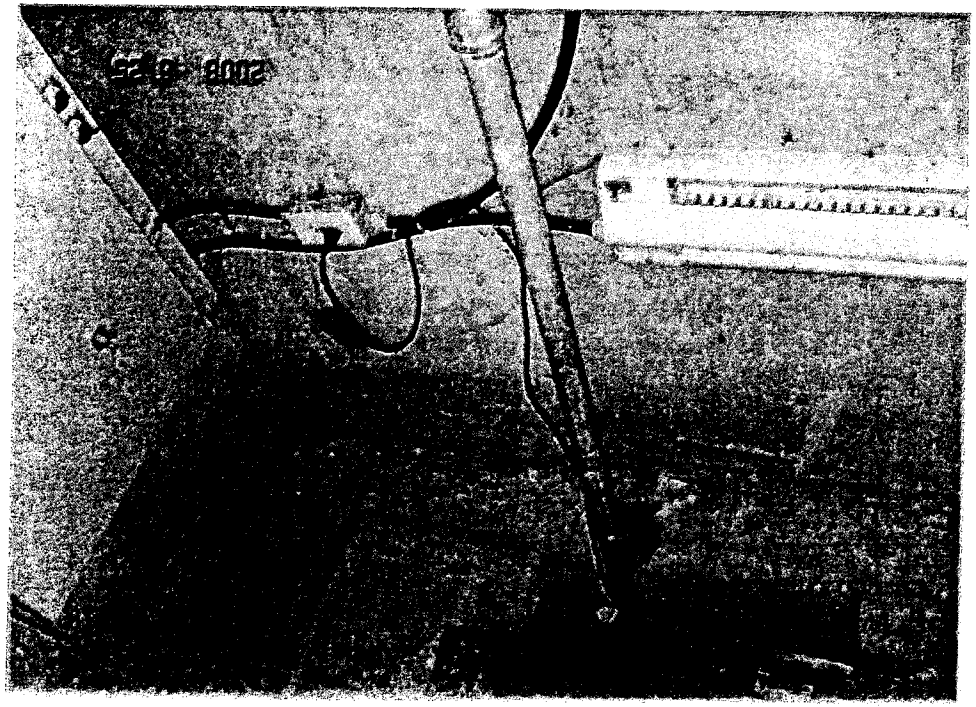
STEVENSVILLE, TOWN OF PWSID #MT0000335.

Operator: George Thomas

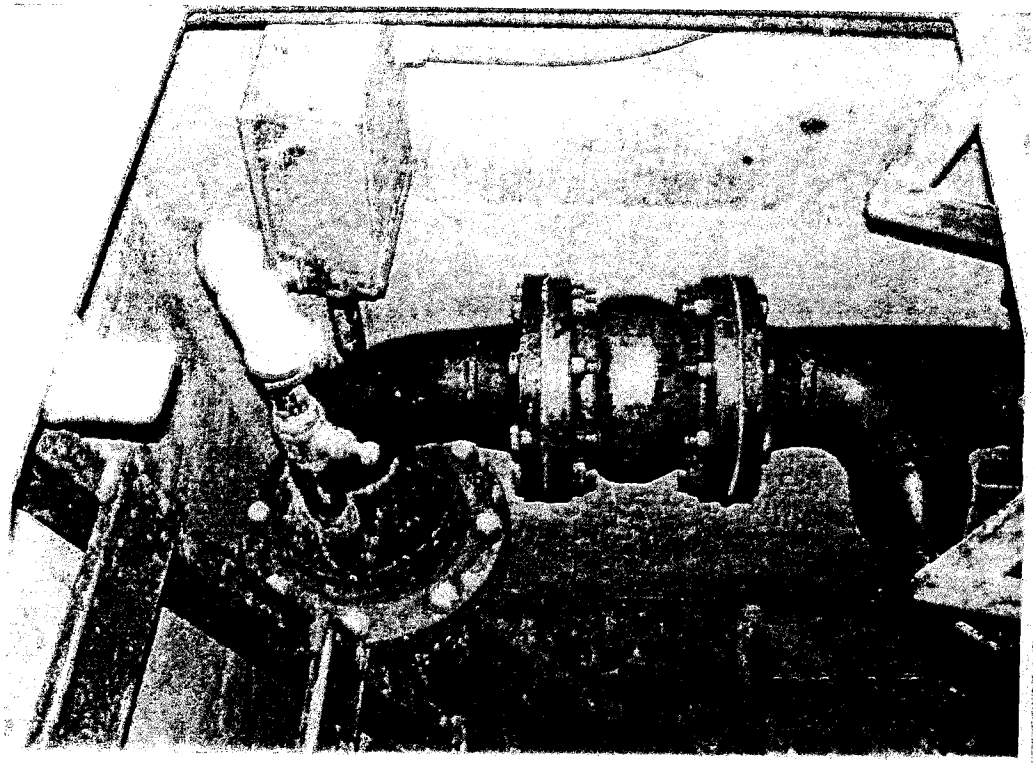
inspected 6/25/2008 by Mike Kropp, DEQ PWS

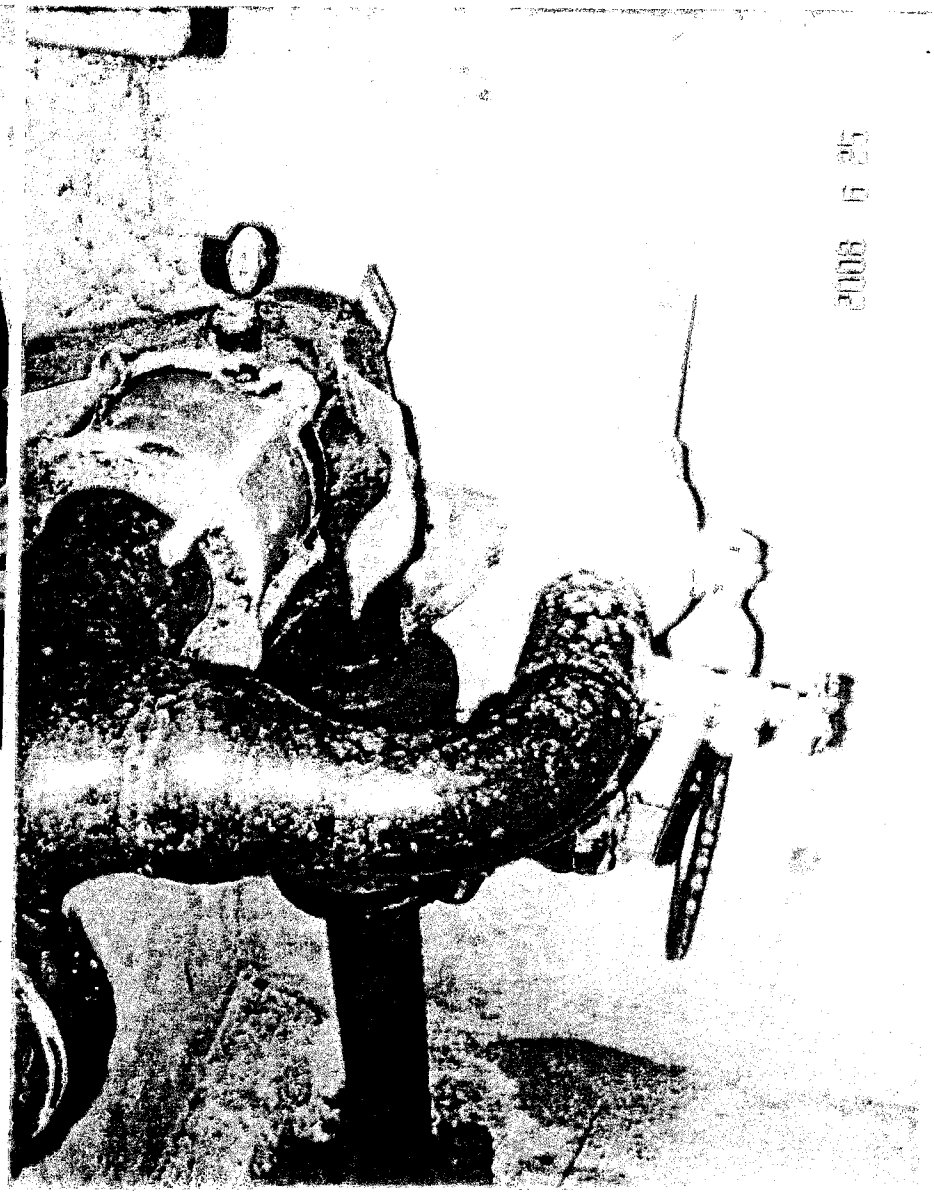


Top left: Well 2 (WL004) is located on the corner of Mission Street and South Avenue. The wellhead is in the locked vault shown in this picture.



Lower left: The control panel, heater and wall outlet are some of electrical components located in the vault. High water levels inside the vault is reduced through use of a sump pump that draws from a depression in the floor. The sump pump is plugged into a wall outlet located in the vault a few feet above the floor level. So if water rose faster than the sump pump capacity, the vault would flood and shut the breakers off to all electrical components (including the sump pump).

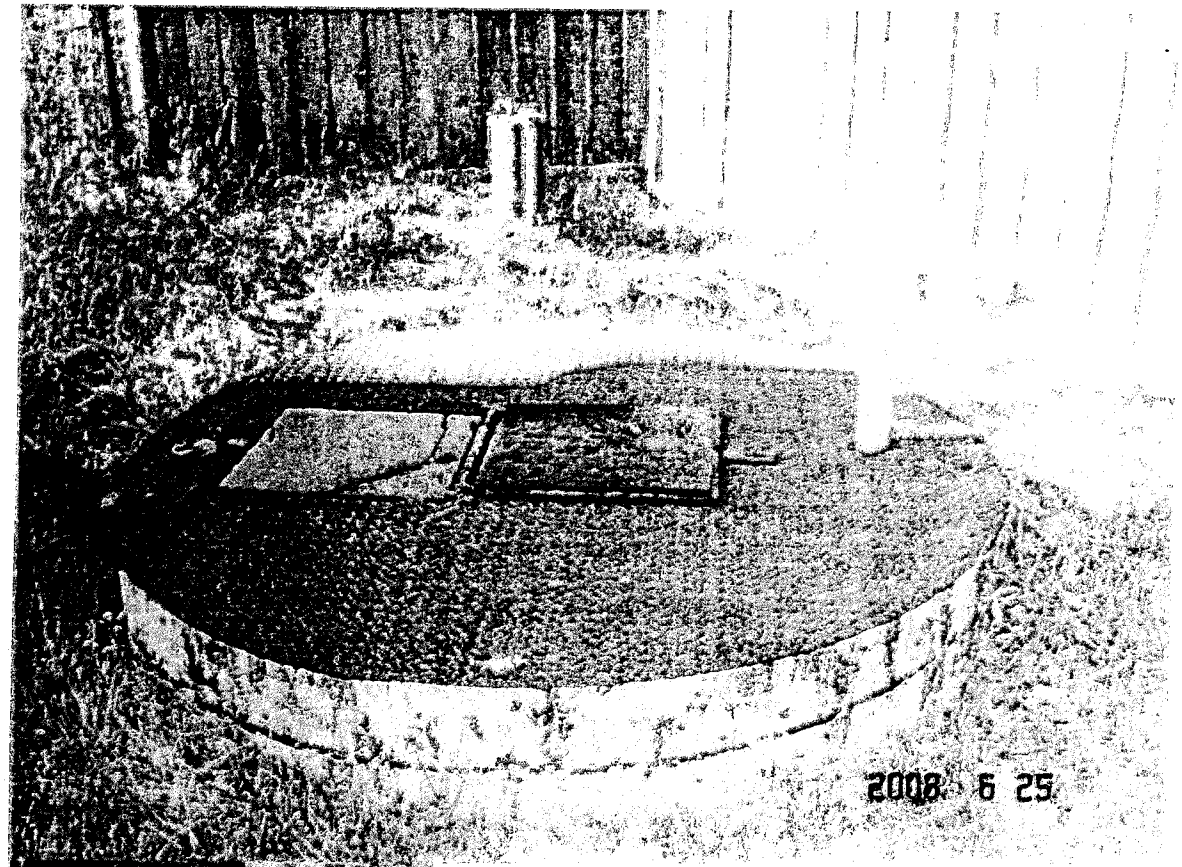


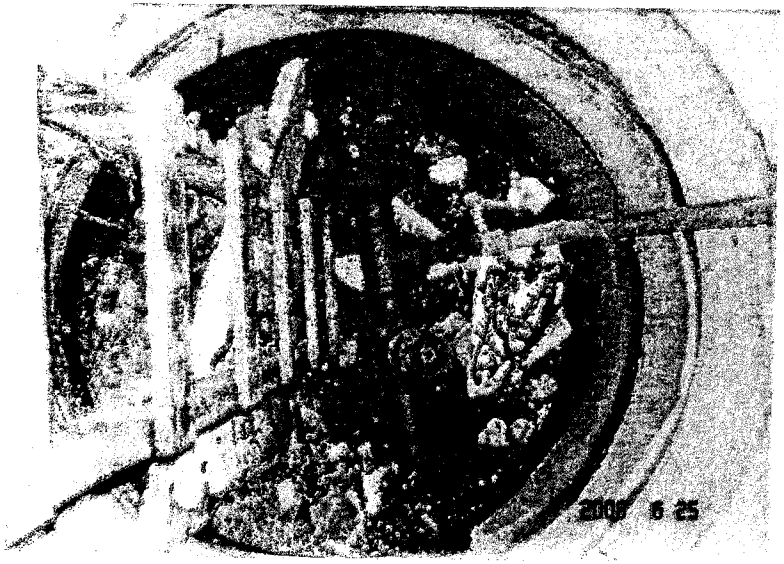


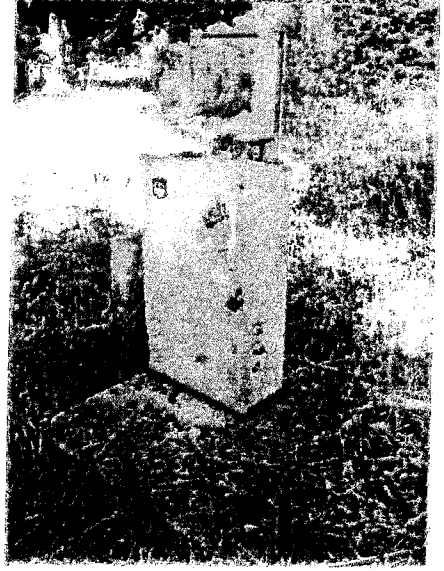
The pictures on this page show the remaining components in the well 2 (WL004) vault.

Top left: The wellhead is vented, but it terminates below the vaults flood rim along with an additional electrical box. The ladder is not permanently fixed to the side wall. The access hatch is not properly gasketed.

Top right: Well 2 (WL004) entry point to distribution can be seen running into the vault floor. A 2" blow-off pipe extends through the wall and terminates in a nearby ditch. This blow-off outlet is currently capped.





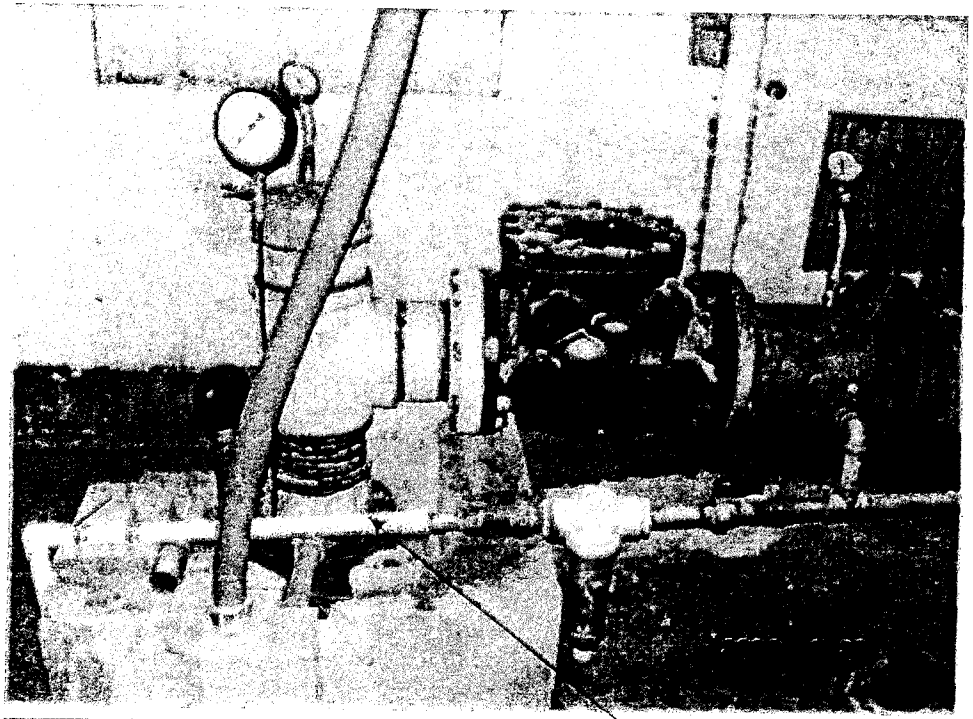


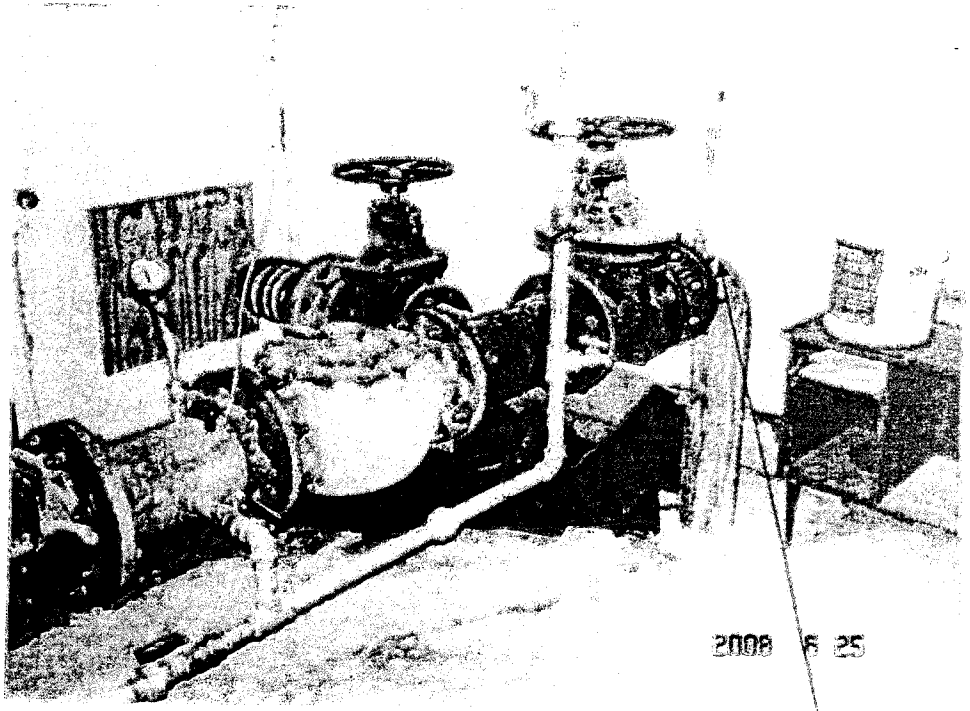
Upper left: Well 3 (WL005) wellhead. Split cap for outside use not recommended. Vent is screened. Well 3 is surrounded by homes.

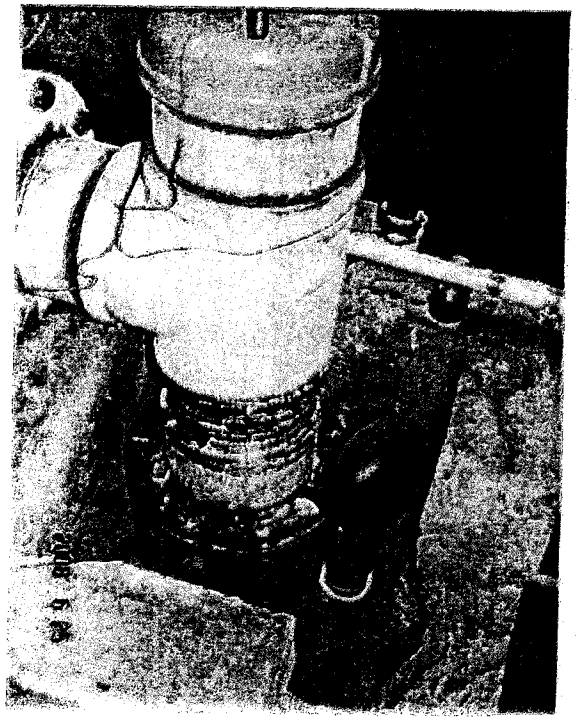
Upper right: Well 3 control vault.

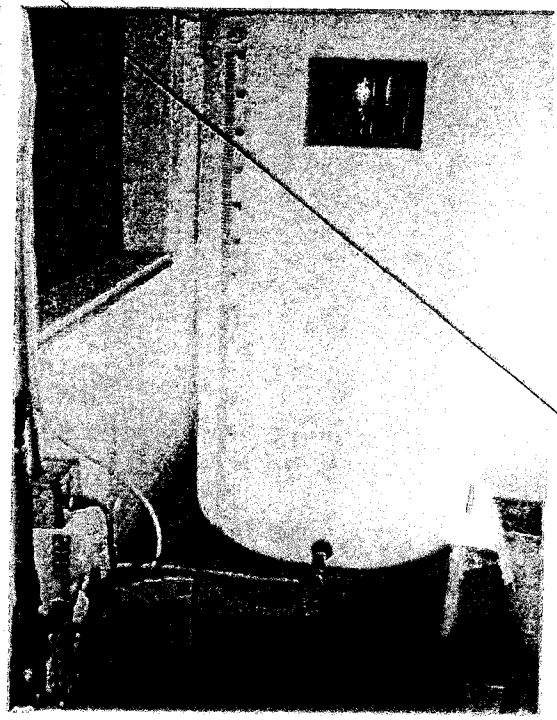
Lower left: Inside well 3 vault. Garbage in vault with some sign of high water. Not a permanent affixed ladder.

Lower right: Well 3 control panel +- 10' from control vault.

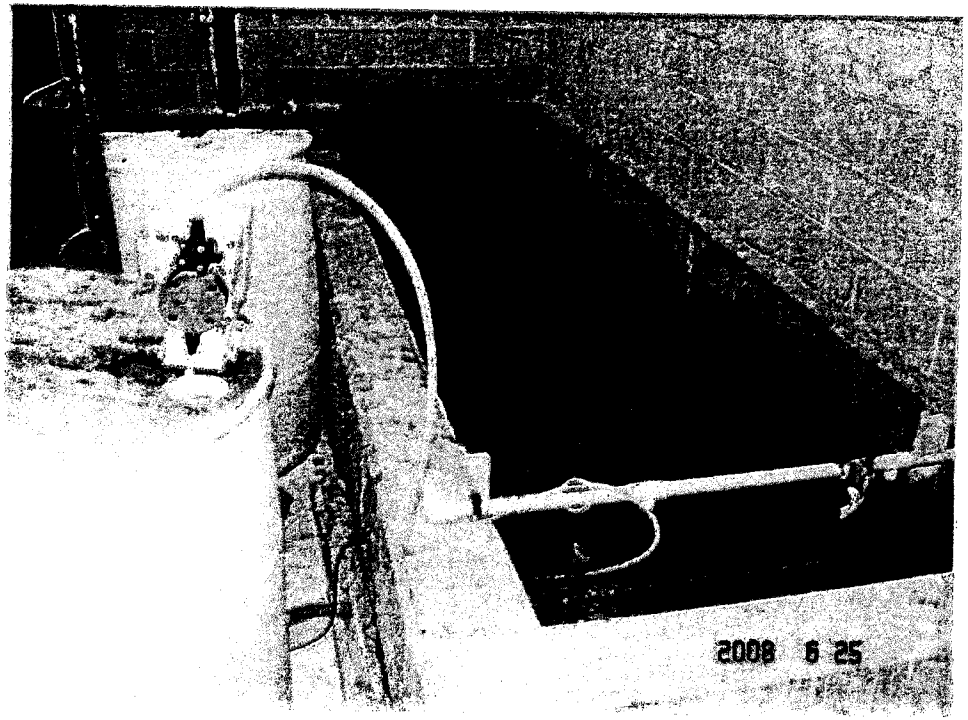


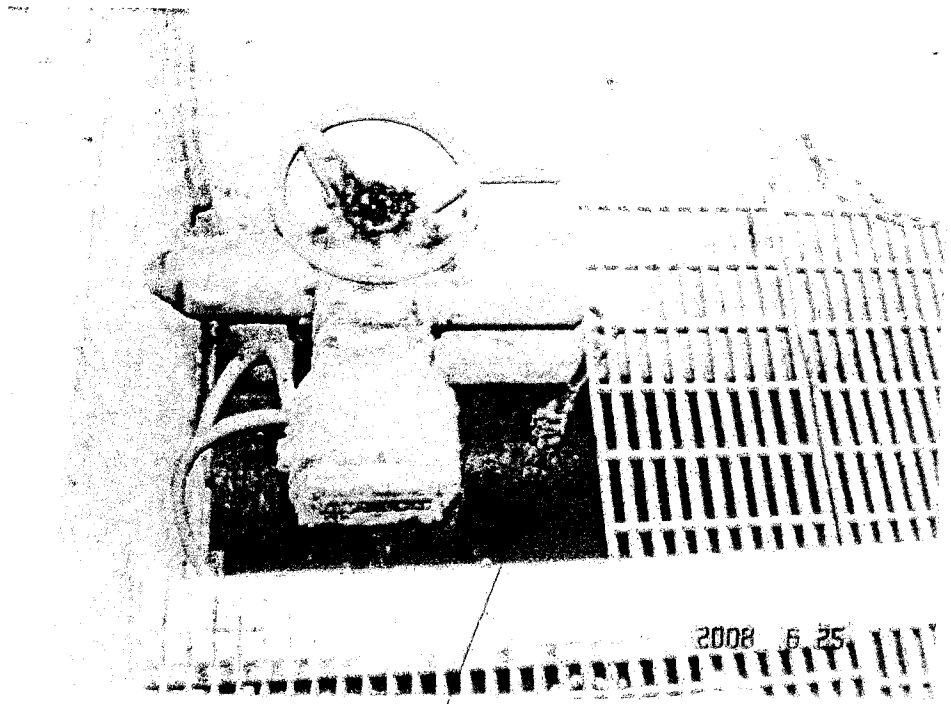


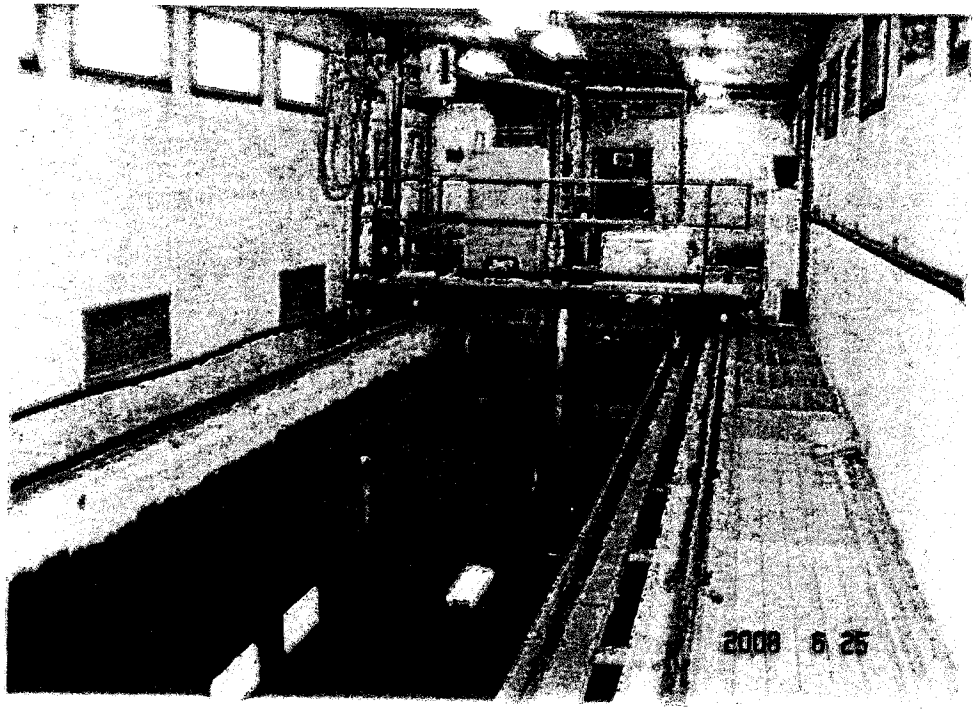




Well 1 (WL003) pictures are shown this page with orthophosphate treatment. (No disinfection in place @ WL003). Injection point for TP002. This well has VFD controls but is set to operate like a standard motor. I can only assume it was installed to minimize hammer at start and stop because VFD used in conjunction with storage tank float controls doesn't seem to be overly beneficial. PVC line goes to spigot. I recommended the operator write the length of the sounding tube on the face of the pressure gauge for easy reference when using the depth gauge set up. The fire hose is used for blow-off purposes.

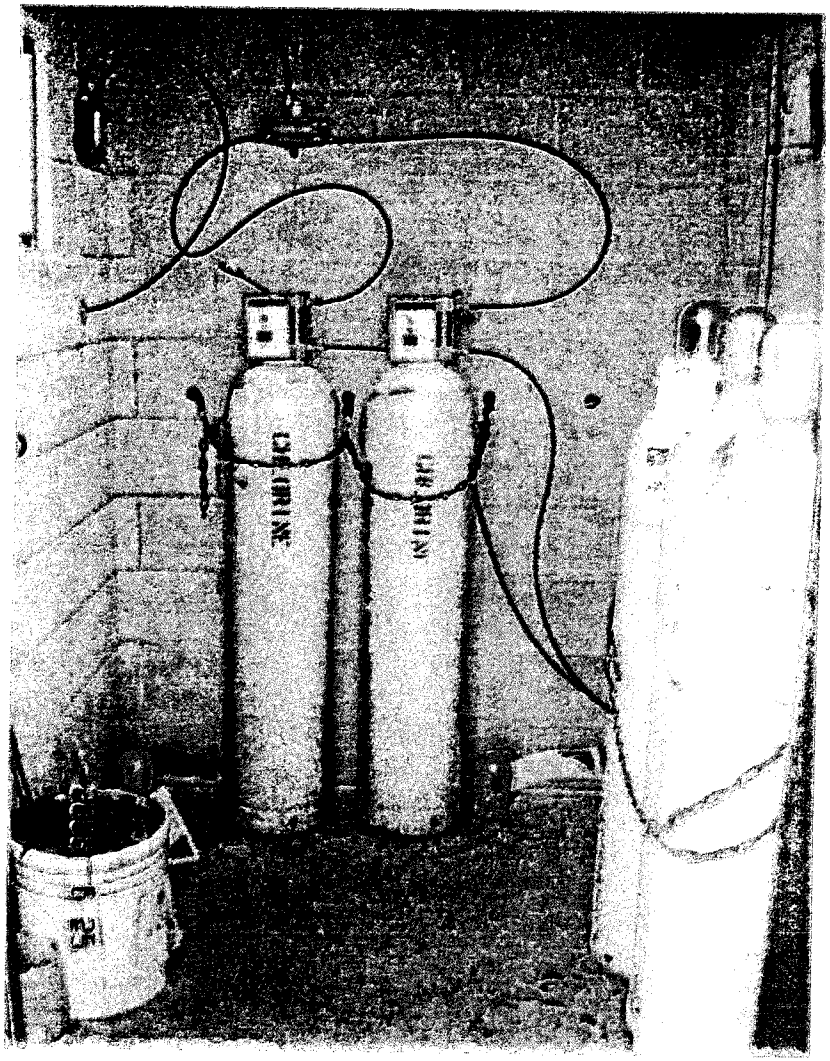


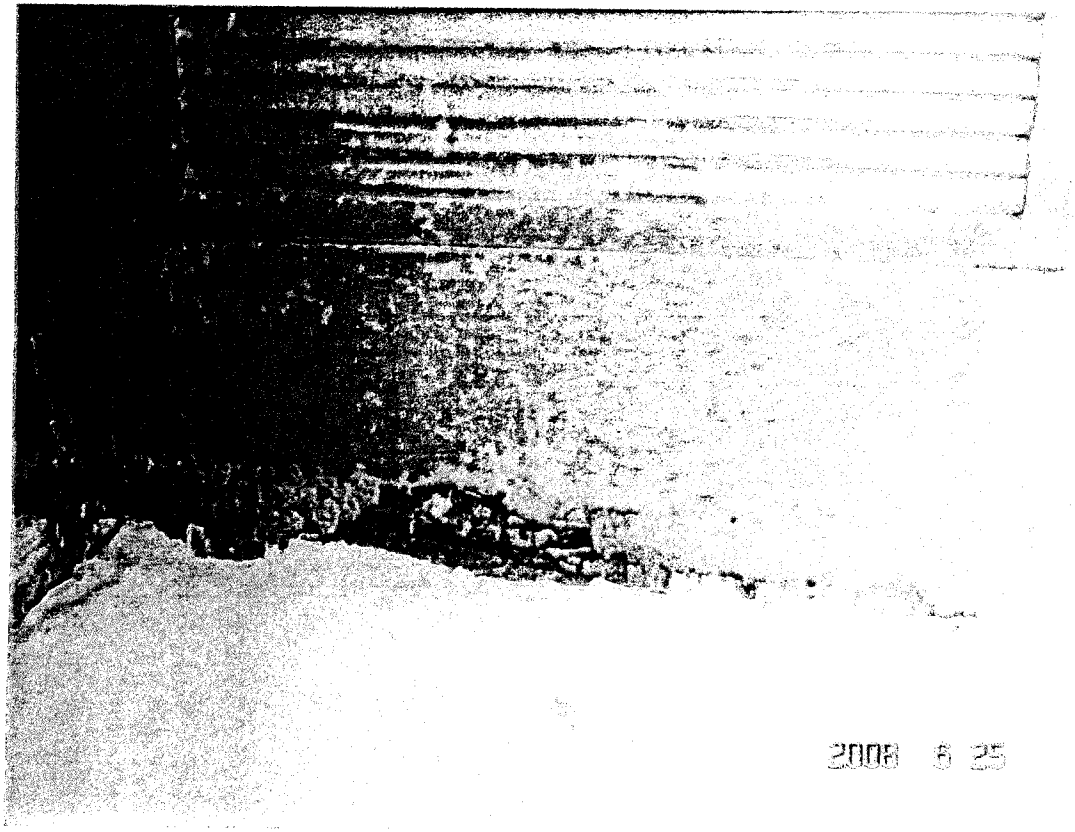




Top left: Surface water inlet from Swamp Creek and Mill Creek sources (TP001). Excess water flows over a wall at the far end of the entry basin and goes to storm drain. Coagulant (alum) is added and flows through settling basin. Chlorine injection is available at this point, but is not used.

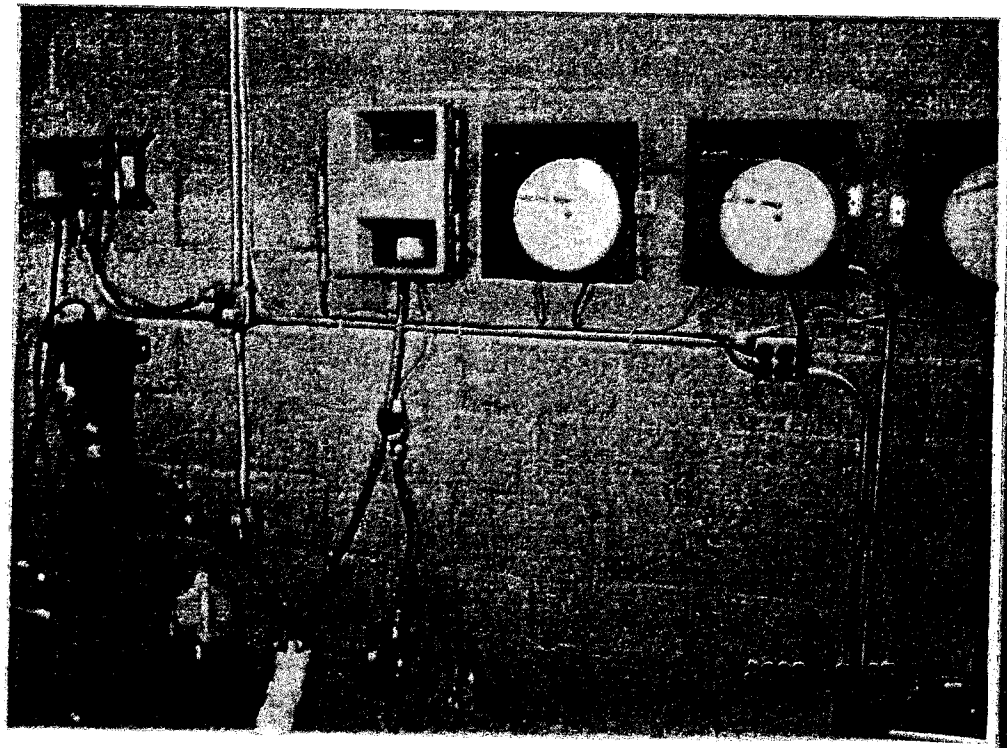
Lower left: The sand filter bed can be seen. Chlorine injection point is at the far left side of the picture as the filtered water goes to the 500,000 gallon storage tank (ST001).





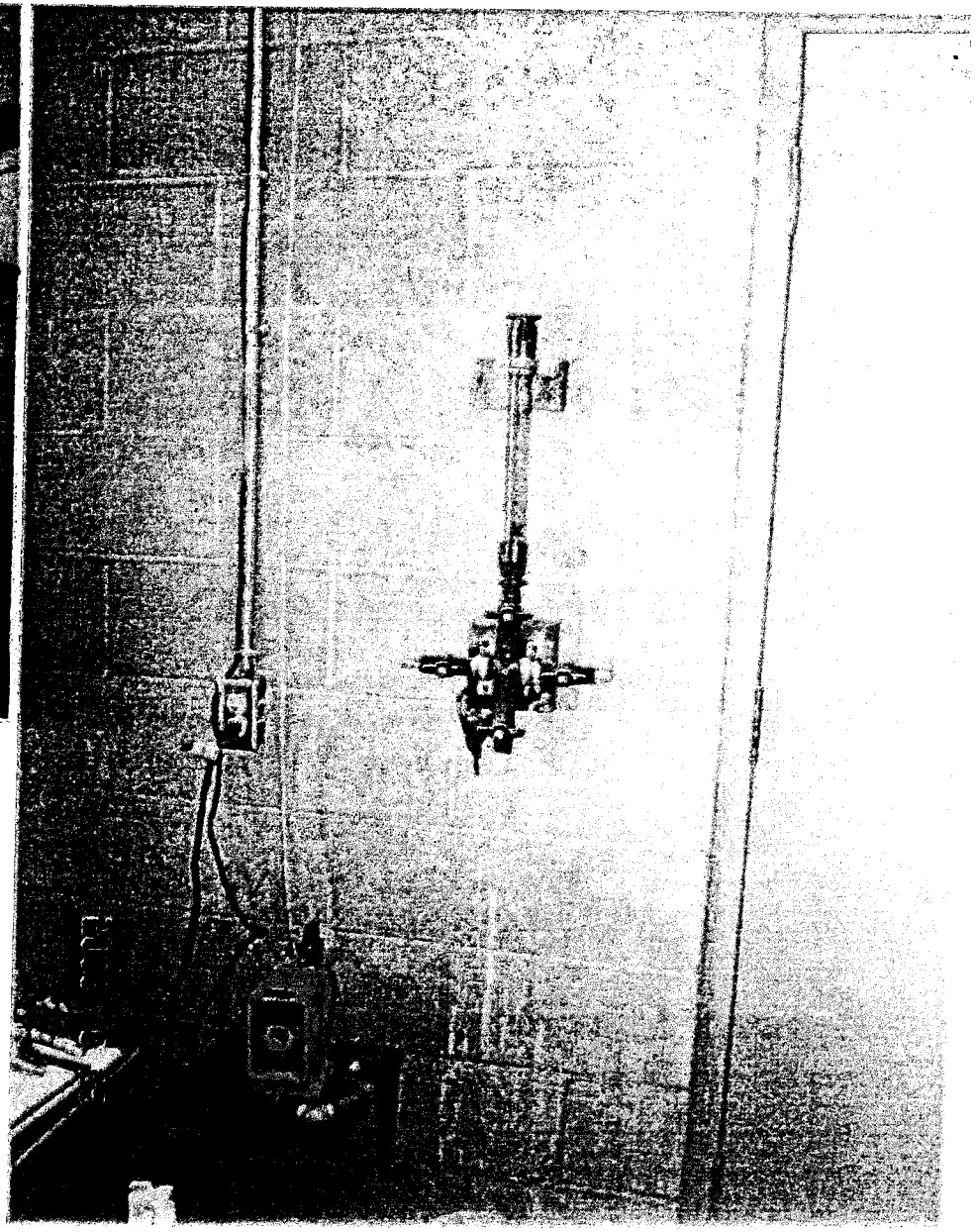
Stevensville uses gas chlorination at T001 (surface water plant). Deficiencies include no panic bar on door, no scale under tanks in use and vent outlet doesn't open with exhaust fan operation. Accumulation of chlorine gas at floor level has eaten the bottom of the door up.

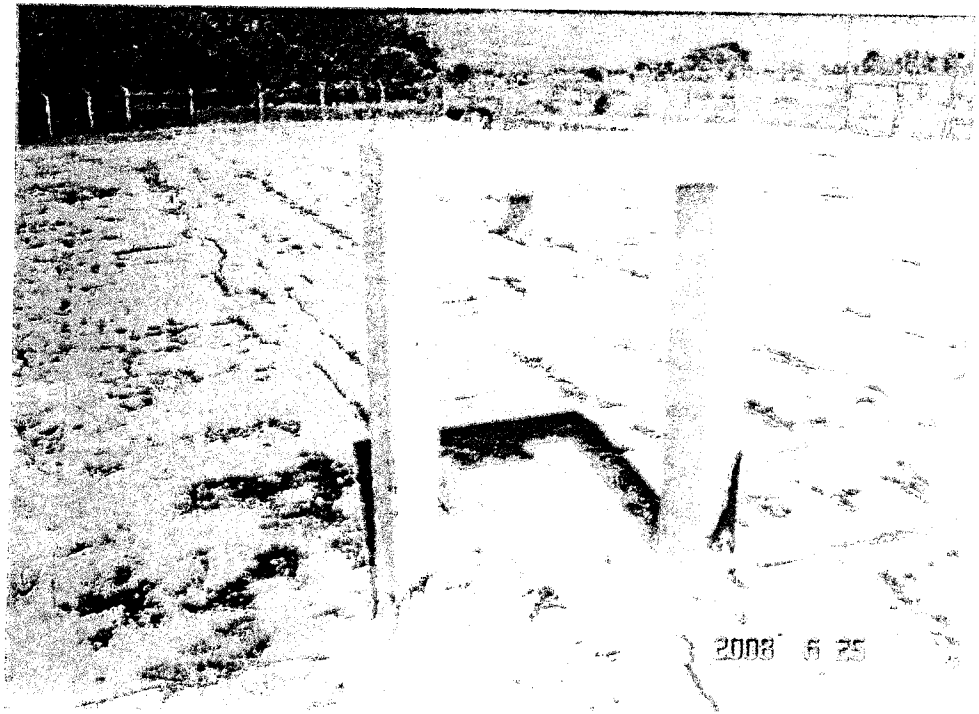
SCUBA unit is hung in control room. George said the staff is trained on its' use.

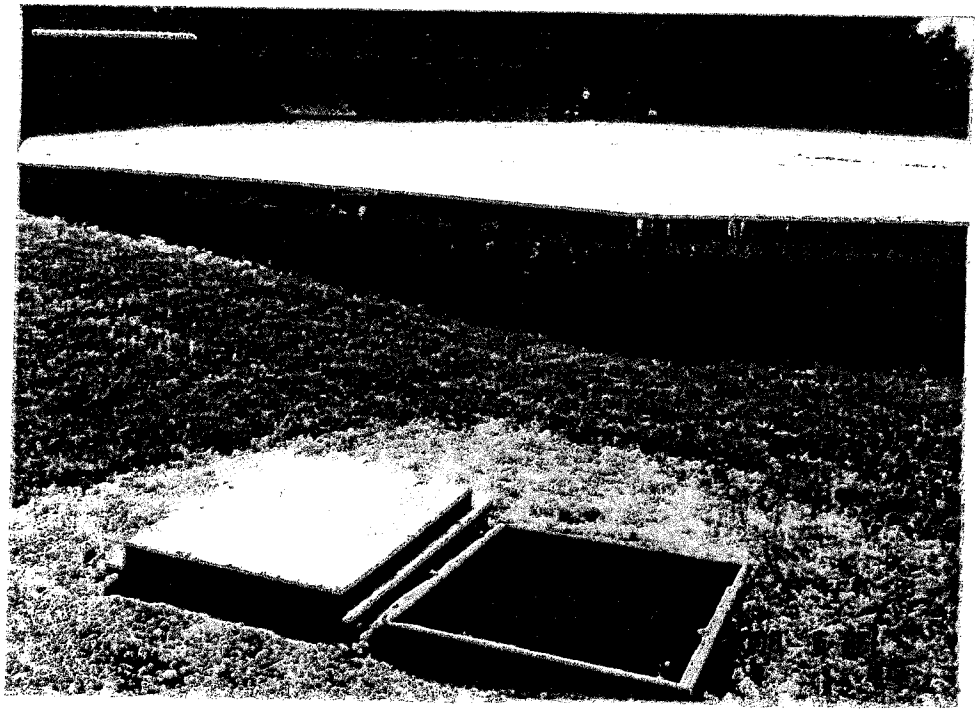


Turbidimeter, colorimeter, and chart graphs are located in the treatment plant control room. Orthophosphate is added for corrosion control.

System has an automatic bypass if the surface water treatment plant exceeds acceptable turbidity measurements prior to entering the storage tank. No turbidity recorder on raw water.





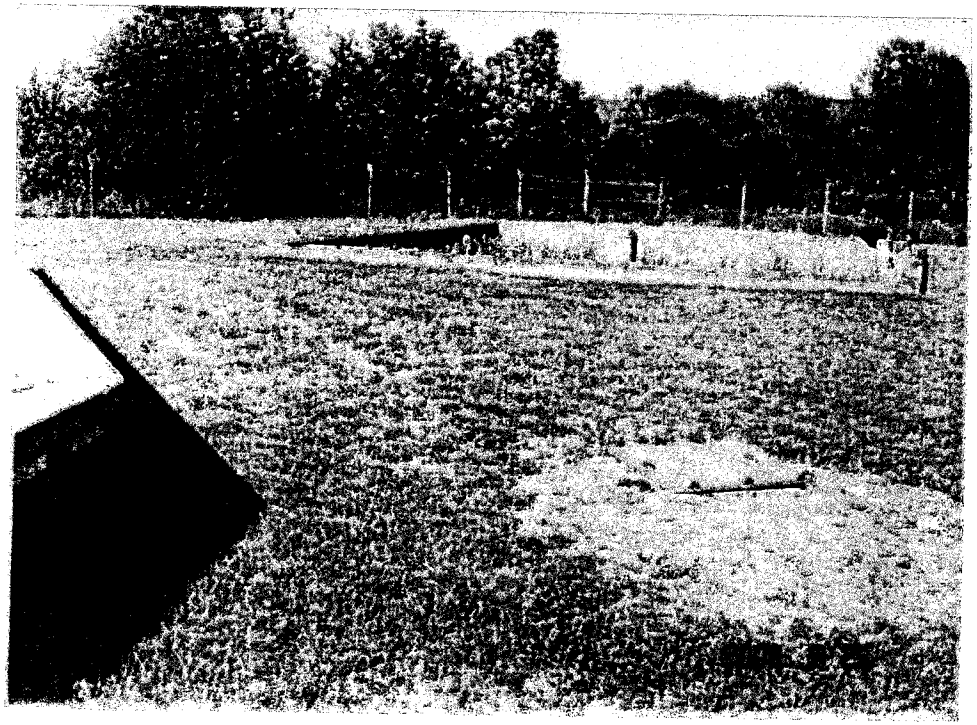


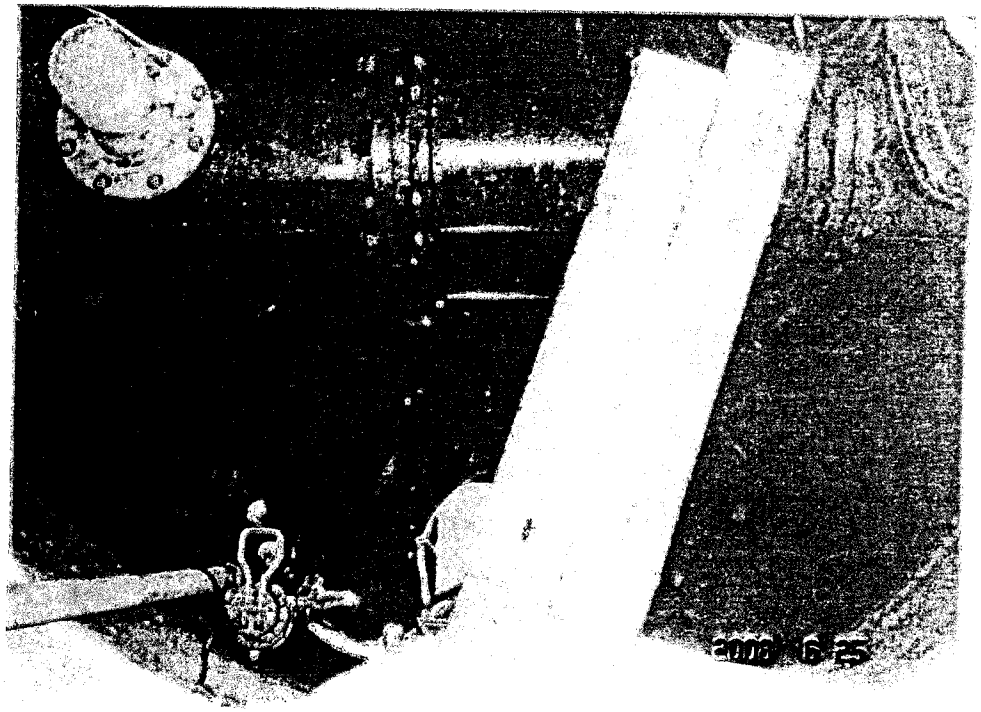
Top left: Top of 500,000 gallon storage tank (ST001) looking toward the surface water treatment building (TP001). The small shed located between TP001 and ST001 houses the automatic bypass valve if turbidity levels exceed acceptable levels leaving the plant.

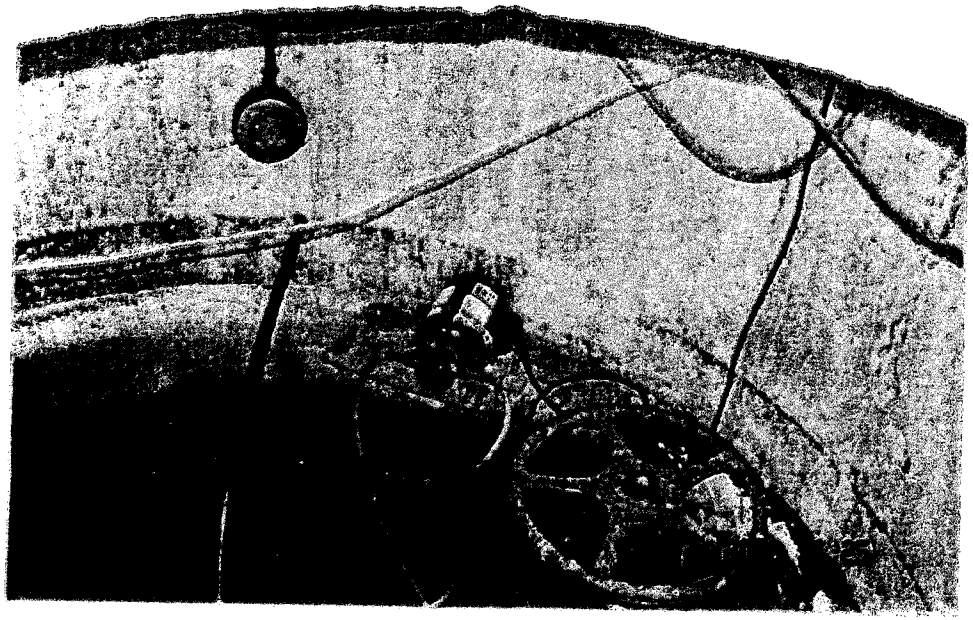
Top right: Top of the storage tank with the facility roof vent shown in the front of picture. Vent was screened.

Bottom left: TP001, bypass structure, ST001 and a meter vault where a chlorine booster pump injects water leaving ST001 as it enters distribution.

NOTE: System doesn't know for sure where the bypass or ST001 overflow outlets are located, or if they're screened.







Top left: Existing 500,00 gallon storage tank (ST001) to the left – old storage tank structure that is now used for wastewater disposal near far fence – framed metal siding is used for lid to meter vault that also has a post storage chlorine injector and sump pup to keep ground water below components.

Top right: Picture in meter vault shows meter, sump pump and high ground water. Sump pump goes to old storage tank. Note: Current DEQ standards would not allow a vault in high ground water. DEQ-1 section 8.6

Bottom left: Booster chlorine injection pump can be seen in the same vault. This booster has had to be replaced a few times because of loss of head and it burned out. There is no redundant pump and it's in a vault subject to high ground water levels.