

# **Mountain View Colony**

PWSID MT0004058

**Report Date: March 8, 2006**

**Revised:**

**Certified Operator:**

**Walter Wipf**

**Operator Number: None, operator is not certified**

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## Executive Summary

### March 8, 2006

#### **Introduction and Background**

Mountain View Colony is located southeast of Broadview and about 35 miles northwest of Billings on Montana Highway 3 ([Figure 1](#)). The U.S. Census Bureau estimates the 2000 population of Yellowstone County is about 130,000 people and the county's population has increased about 13% since 1990. Mountain View Colony has about 150 residents.

The Mountain View Colony public water supply is classified as a community system under the Federal Safe Drinking Water Act, because the system serves at least 25 year-round residents through at least 15 service connections. According to the most current sanitary survey, the public water supply services about 150 residents with 10 active service connections. Mountain View Colony's public water supply is served by ground water from two shallow wells. These wells are about 25 and 50 feet deep and are interpreted as being completed in sandstone beds of the Tullock Member of the Fort Union Formation. The aquifer is considered to have a high sensitivity to potential contaminant sources located at or near the land surface. In addition, the aquifer is considered to be in hydraulic connection with surface water.

Within the past five years, Mountain View Colony has 2 positive total coliform detections. Follow-up samples tested negative indicating the water was not contaminated by bacteria. No MCL exceedances were noted for any other constituents monitored over the past five years, this includes nitrate. The highest nitrate value recorded for water from all of the wells is 0.35 milligrams per liter (mg/l) in March 2004, and the lowest nitrate value for all of the wells was less than 0.05mg/l in November 2002. Those were the only two nitrate samples for the past 5 years.

#### **Delineation of Source Water Protection Areas**

The purpose of delineation is to map the source of drinking water for the public water supply and to define areas within which to prioritize source water protection efforts. Three source water protection areas are defined for Mountain View Colony ([Figure 3](#), [Figure 6 and 7](#)). They are 1) a 100-foot control zone around each of the wells, 2) a single 1-mile fixed radius inventory region, and 3) a recharge region corresponding to the watershed that surrounds the public water supply. The goal of management in the control zone is to avoid introducing contaminants directly into the water supply's wells. The inventory region is the area that is expected to contribute ground water to the wells over a period of months or years and should be managed to prevent contaminants from reaching the Colony's wells. The goal of management in the recharge region is to maintain and improve water quality over long periods of time or increased usage.

Source water for the Mountain View Colony public water supply comes principally from sandstone beds within the Tullock Member of the Fort Union Formation. The aquifer is interpreted to be shallow and unconfined. In general, recharge is considered to come from a combination of precipitation, snowmelt runoff, irrigation return flows, and leakage from streams and irrigation canals. Ground water flow direction is interpreted to be primarily from the northeast toward the southwest ([Figure 3](#)).

#### **Inventory of Potential Contaminant Sources**

The inventory of potential contaminant sources is used to assess the susceptibility of the Mountain View Colony public water supply to contamination and to identify priorities for source water protection planning. The inventory focuses on facilities that generate, use, store, transport, or dispose of potential contaminants and on land types where potential contaminants are present. Some potential contaminant sources are considered significant based upon 1) the volume of potential releases, 2) the volume of hazardous materials typically handled, 3) the potential of the released materials to impact nearby surface water or ground water, and 4) the proximity of the potential contaminant sources to the source of water used by the public water supply. Maps showing the inventory results are shown in [Figure 3](#), [Figure 6](#) and [7](#).

Susceptibility is the potential for a public water supply to draw in water contaminated by inventoried sources. Susceptibility is determined by considering the hazard rating for each potential contaminant source and the existence of natural or man-made barriers that decrease the likelihood that contaminated water will flow to the public water supply wells (Tables 6 and 7). Table 6 shows the general guidelines for assigning hazard ratings to each potential contaminant source. Table 8 lists all of the potential contaminant sources identified in this inventory and includes the hazard and final susceptibility ratings assigned to each potential contaminant source.

Agricultural lands represent the principal threat to the Colony's source water. The concern with agricultural lands is over-application or misuse of fertilizers and/or pesticides that can result in those ag-chemicals infiltrating into ground water and running off in to surface water bodies that may have hydraulic connection with aquifers that supply water. The hazard associated with the ag-land is set at high and the susceptibility is set to very high. Other potential contaminant sources identified in the vicinity of the Colony include: fuel and agricultural chemical storage, wastewater treatment facilities, and a crude oil pipeline. All of these potential contaminant sources are interpreted to be down-gradient from the public water supply wells. This means that the ground water beneath these potential contaminant sources is moving away from the wells and not toward them. As a result, these potential contaminant sources do not pose a threat to the Colony's source water (Table 8).

All potential contaminant sources may not have been identified in this inventory. In some instances, inadequate location information in the available databases can result in some potential contaminant sources not being included in the inventory. Review of the inventory and this report by the local public water supply operator and the community can help address limitations of the inventory process.

### **Management Recommendations**

It should be noted that even small releases of some chemicals in close proximity to a well could have significant negative impact on water quality. Steps can be taken to reduce the likelihood of releases to the source water for the public water supply or in the vicinity of the sources. Some of these steps are listed in Table 8 and under the Management Recommendations section on page 18.

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## INTRODUCTION

This Delineation and Assessment Report was prepared by Laura Rennick, an intern with the Source Water Protection Program (SWPP) at the Montana Department of Environmental Quality (DEQ) and Jim Stimson, Hydrogeologist with the SWPP reviewed and edited the report. Mountain View Colony Public Water Supply (PWS) is located in Yellowstone County, Montana, about 35 miles northwest of Billings on Highway 3 ([Figure 1](#)). The DEQ PWS identification number, operator name, and operator phone number for the Mountain View Colony PWS appear on the title page of this report.

### **Purpose**

This report is intended to meet the technical requirements for the completion of the source water delineation and assessment report for the Mountain View Colony PWS as required by the Montana Source Water Protection Program (DEQ, 1999) and the federal Safe Drinking Water Act (SDWA) Amendments of 1996 (P.L. 104-182). The Montana Source Water Protection Program is intended to be a practical and cost-effective approach to the protection of public drinking water supplies from contamination. The primary purpose of this source water delineation and assessment report is to provide information to assist the Mountain View Colony PWS operator in the identification of potential contaminant sources near its wells and to encourage the development of a source water protection plan to help protect the drinking water for the long term.

Delineation and assessment constitute major components of the Montana Source Water Protection Program. Delineation entails mapping the boundaries of source water protection areas, which encompass ground water and/or surface waters contributing to public water supply. Assessment involves identifying locations or regions within source water protection areas where contaminants may be generated, stored, transported, or disposed, and determining the relative susceptibility of drinking water to contamination from these sources.

### **Limitations**

This report was prepared to assess threats to the Mountain View Colony PWS and is based on published data including the most recent sanitary survey, which was completed on June 26, 2003, by Karl Carlson, of the Yellowstone-City County Health Department, and information obtained from local residents familiar with the community. The terms “drinking water supply” and “drinking water source” refer specifically to the sources of Mountain View Colony PWS, and not any other public or private water supply. Also, not all of the potential or existing sources of ground water or surface-water contamination in the area of Mountain View Colony are identified. Only potential sources of contamination in areas that contribute water to the identified drinking water sources are considered.

The term “contaminant” is used in this report to refer to constituents for which maximum concentration levels (MCLs) have been specified under the national primary drinking water standards, and to certain carcinogenic or toxic constituents that do not have MCLs but are considered to be significant health threats.

# CHAPTER 1 BACKGROUND

## The Community

Mountain View Colony is located about 9 miles southeast of Broadview on Highway 3 (Figure 1). Broadview is approximately 35 miles north of Billings. The town has a population of about 150 (Census and Economic Information Center, 2002). Yellowstone County has a population of about 130,000 and the county’s population has increased about 13% since 1990. Sanitary surveys for the Colony indicate that this public water supply serves approximately 80 people. The Colony’s public water supply is classified as community systems that serve 25 or more year round residence. Table 1 below lists the PWSs and the source of water they use. The Colony has its own waste water treatment system with two lagoons located approximately 1,000 feet southwest of the Colony buildings (Appendix C).

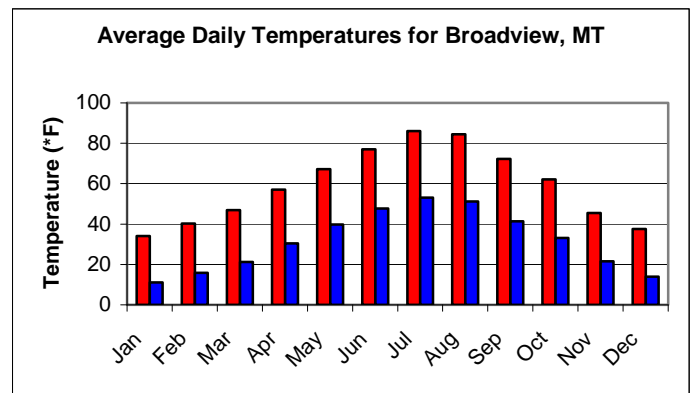
**Table 1. Public Water Supplies in the area.**

PWSID	Primary Name	Class	Source Name	Source Type	Resident Population	Non-Resident Population
MT0004058	Mountain View Colony	Community	Well #1	Groundwater	80	0
MT0004058	Mountain View Colony	Community	Well #2	Groundwater	80	0

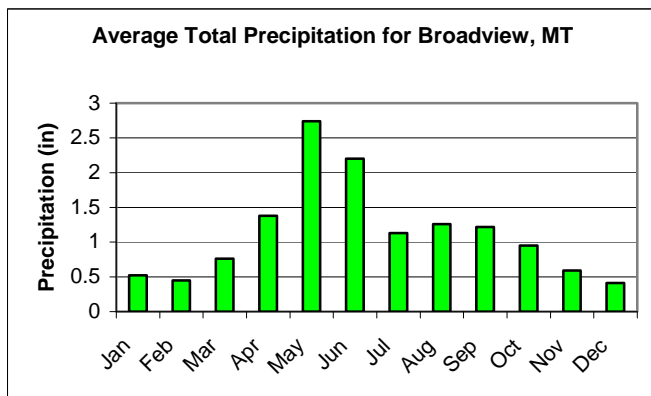
**Figure 2. Average Temperatures and Precipitation**

## Climate

The average daily high and low temperatures at Broadview are 86 °F and 53.1°F in July and 34°F and 11.1°F in January (Figure 2). Precipitation averaging 13.6 inches annually is heaviest in May. Average annual snowfall is 36.3 inches with the largest average accumulation coming in January (Western Regional Climate Center).



## Geographic Setting



The Colony is located southeast of the town of Broadview on an upland area with local streams that drain into the Comanche Flats (Figure 1). Elevation at the Colony is shown as 3,851 feet above sea level. This location is within the Yellowstone Watershed (HUC # 10070007020). The Yellowstone River Valley is near Billings, located about 35 miles south-southeast of the Colony and the Musselshell River Valley is located about 15 miles north of the Colony site.

## Geology

Mountain View Colony is located near Comanche Flats which is a local basin filled with Quaternary Lake deposits. Bedrock formations exposed at the land surface in the vicinity of Comanche Flats include the Bearpaw Shale, Fox Hills Formation, and the Lance Formation, which are Upper Cretaceous in age. The Fort Union Formation of Tertiary Age is also at the land surface in the vicinity of Mountain View. Three distinct units of the Fort Union are mapped in this area and include the Tullock, Lebo, and Tongue River members. The Colony and its wells are located on the Tullock Member. Based on the outcrop pattern in the area near the Colony, the bedrock is dipping to the northeast toward the Bull Mountains' Uplift which is a broad upland area where the bedrock is folded into an anticline.

**Table 2. Source water sensitivity criteria (DEQ, 1999).**

### The Occurrence of Ground Water:

There are not a lot of wells in the area around Mountain View Colony. Data from 28 wells in the area are used to generalize ground-water availability. The average depth for wells for these wells is 143 feet below the land surface and the maximum depth was listed as 570 feet. Almost all of the wells are completed in sandstone or shale beds associated with the bedrock formations listed above. The Colony's wells are shallow and are interpreted to be completed within the Tullock Member of the Fort Union Formation. Based on the driller's logs, the aquifer in the Tullock near the Colony is interpreted as a shallow unconfined consolidated sandstone aquifer. The driller's logs do not indicate any clay or shale beds above the producing sandstone and the wells are less than 50 feet deep. In addition, the well locations are very close to two ephemeral drainage channels ([Figure 2](#)). The channels are natural water collection structures which tend to improve the chances of obtaining higher yields from wells drill near or in the drainages. The reason for this is that the channels are caused by surface water erosion which cuts the channel into the bedrock. As a result, the channels represent an entry path for surface water into the shallow ground-water system. The surface water can carry contaminants and pathogens from the land surface into shallow aquifers like the one used by Mountain View Colony. As a consequence, the aquifer used by the Colony is considered to have a high sensitivity to potential contaminant sources located at or near the land surface.

Source Water Sensitivity
<b>High Source Water Sensitivity</b> <b>Surface water and GWUDISW</b> Unconsolidated Alluvium (unconfined) Fluvial-Glacial Gravel Terrace and Pediment Gravel Shallow Fractured or Carbonate Bedrock
<b>Moderate Source Water Sensitivity</b> Semi-consolidated Valley Fill sediments Unconsolidated Alluvium (semi-confined)
<b>Low Source Water Sensitivity</b> Consolidated Sandstone Bedrock Deep Fractured or Carbonate Bedrock Semi-consolidated Valley Fill Sediments (confined)

Recharge for this aquifers generally comes from a combination of precipitation, snowmelt runoff, irrigation return flows, and leakage from rivers, streams and irrigation canals. Some recharge could originate from older bedrock formations locate beneath the Tullock Member. Ground-water flow in the shallow bedrock is interpreted to be from upland areas toward lowlands and stream valleys. For this area ground-water flow is interpreted to be from the north-northeast toward the south-southwest. In the deeper bedrock formations, ground-water could be flowing either south toward the Yellowstone River Valley or north toward the Musselshell River Valley. Detailed studies of the deeper ground-water flow system are beyond the scope of this report.

## **The Public Water Supply**

The Mountain View Colony public water supply is classified as a community system under the Federal Safe Drinking Water Act, because the system serves at least 25 year-round residents through at least 15 service connections. The PWS services about 80 residents through 10 active service connections.

According to the most recent sanitary survey, Mountain View Colony's public water supply is served by ground water from 2 wells that pump to a common header. Well #1 was drilled to a depth of 45.10 feet on September 12, 2000. The well is cased in 2-inch PVC to a depth of 35.1 feet; there are 0.020-inch factory slots from 35-41 feet. The casing extends 3-feet above ground level. The static water level is 22.90 feet. The well is sealed to a depth of 34 feet, with baroid casing seal, which is a bentonite base grouting material. There is a submersible pump of unknown horsepower located in the well. Well #1 yields 30 gallons per minute. Well #2 was drilled to a depth of 25.2 feet on September 17, 2003. The well is cased in 2-inch PVC to a depth of 20 feet. There are 0.020-inch factory slots from 20-25 feet. The casing extends 2 feet above ground level. The static water level is 18.5 feet. There is a submersible pump of unknown horsepower located in the well. Wells #2 each yield 15 gallons per minute. The Montana Bureau of Mines and Geology (MBMG) interpret the wells as being completed in the Hell Creek Formation. There is no treatment on this system. There is an Aqua Var Control System. There are 2 5,000-gallon plastic storage tanks. The distribution system consist have mostly galvanized and PVC piping.

Driller's logs for both wells indicate that the aquifer is consolidated sandstone and that there are no confining beds, such as shale or clay, above the producing zone. As mentioned previously, the aquifer is interpreted to be shallow and unconfined with a high sensitivity to potential contaminant sources located at or near the land surface. There is a strong possibility that the aquifer is in hydraulic connection with surface water that drains to the ephemeral channels near the wells.

Public water systems must conduct routine monitoring for contaminants in accordance with Federal Safe Drinking Water Act requirements. A community public water supply, like Mountain View Colony, must sample in accordance with schedules specified in the Administrative Rules of Montana (ARM). Monitoring includes coliform bacteria, lead, copper, nitrate, nitrite, volatile organic chemicals (including hydrocarbons and chlorinated solvents), inorganic chemicals (including metals), synthetic organic chemicals (including pesticides), and radiological contaminants. Transient, non-community PWSs are required to conduct routine monitoring only for pathogens (including coliform bacteria), nitrate, and nitrite. All contaminant concentrations detected in required samples must comply with numeric maximum contaminant levels (MCLs) specified in the Federal Safe Drinking Water Act.

## **Mountain View Colony PWS Water Quality**

Within the past five years, Mountain View Colony has 2 positive total coliform detections. Follow-up samples tested negative indicating the water was not contaminated by bacteria. No MCL exceedances were noted for any other constituents monitored over the past five years, this includes nitrate. The highest nitrate value recorded for water from all of the wells is 0.35 milligrams per liter (mg/l) in March 2004, and the lowest nitrate value for all of the wells was less than 0.05mg/l in November 2002. These concentrations of nitrate are well below the maximum contaminant level (MCL) of 10 mg/l set by the U. S. EPA. Those were the only two nitrate samples for the past 5 years.

## CHAPTER 2 DELINEATION

The source water protection areas for the Mountain View Colony public water system are delineated in this chapter. The purpose of delineation is to map the source of drinking water for the public water supply and to define areas within which to prioritize source water protection efforts. Normally for a public water supply using ground water there are three source water protection regions delineated for each well. They include: 1) a 100-foot control zone, 2) a 3-year Time-Of-Travel (TOT) inventory region, or an inventory region based on hydrogeologic mapping, and 3) a recharge region corresponding to the watershed that surrounds the public water supply. For ground water sources that are located close to streams, a surface water buffer region is also routinely delineated.

The goal of management in the control zone is to avoid introducing contaminants directly into the water supply's wells or the immediate surrounding areas. The inventory and surface water buffer regions should be managed to prevent contaminants from reaching the well before natural processes reduce their concentrations. The goal of management in the recharge region is to maintain and improve water quality over long periods of time or increased usage.

**Figure 5 Histogram of Total Depth – Not used in this report**

### Local Hydrogeologic Setting

As noted previously, there are only about 27 wells in the general area around the Colony. The average depth of these wells is 143 feet below the land surface and the maximum depth is listed as 570. Almost all of the wells are completed in consolidated sandstone beds that are part of Cretaceous or Tertiary age formations. Average static water level is about 55 feet below the land surface and the

average yield is 10.63 gallons per minute (gpm). This information comes from the Ground Water Information Center (GWIC) at the Montana Bureau of Mines and Geology (MBMG). [Figure 5](#) is not used in this report because there are so few wells in the area.

Information for both of the Colony's wells is summarized in Table 3.

### Conceptual Model and Assumptions

Source water for the Mountain View Colony public water supply comes principally from shallow sandstone beds within the Tullock Member of the Fort Union Formation ([Figure 4](#)). The aquifer at this location is interpreted to be shallow and unconfined. The aquifer is very likely in hydraulic connection with surface water via two ephemeral drainage channels near the Colony's wells. In general, recharge is considered to come from a combination of precipitation, snowmelt runoff, irrigation return flows, and leakage from streams, rivers, and irrigation canals. Ground-water flow direction in the shallow sandstone aquifer is interpreted to be from the northeast toward the southwest, in general from upland areas toward lowlands and stream valleys.

## Summary of Well Information

**Table 3. Information from drillers log for the Mountain View Colony wells.**

Well Name: MBMG # DNRC WR#	Well #1 186091	Well #2 186094
Location	04N 24E 27 DB	04N 24E 27 DB
Date Completed	9/12/2000	9/12/2000
Depth (ft bgs*)	45.10	25.2
Screened Interval (ft**)	Factory Slots 35-41	Factory Slots 20-25
SWL Depth (ft bgs*)	22.90	18.5
PWL Depth (ft bgs*)	Unknown	Unknown
Drawdown (ft**)	Unknown	Unknown
Test Pumping Rate (gpm***)	30	15
Specific Capacity (gpm/ft****)	Unknown	Unknown

\*ft bgs = feet below ground surface, \*\*ft = feet, \*\*\*gpm = gallons per minute, \*\*\*\*gpm/ft = gallons per minute per foot of drawdown.

## Delineation Results

*Control Zones* - 100-foot radius control zones are delineated each well; all sources of potential contaminants should be excluded in this region. All potential contaminant sources are identified within the control zone.

*Inventory Region* - Due to the fact that no local detailed studies exist that document the hydraulic properties of the Hell Creek Formation and the fact that the Colony is located in a relatively rural and remote area. Therefore, the inventory region for both wells is delineated as a modified 1-mile fixed radius circle. Time-of-Travel (TOT) calculations and hydro-geologic mapping were not used to delineate the inventory regions.

*Surface Water Buffer Region* – This region is not included because the two ephemeral channels do not extend beyond the inventory region.

*Recharge Region* – The watershed encompassing the Colony is delineated as the recharge region. Potential sources of nitrate and pathogens are inventoried within this region. The inventory generally includes landuse and larger facilities that could potentially impact water quality.

## Limiting Factors

Detailed studies on the shallow and deeper ground-water resources have not been completed. Ground-water flow direction and the possibility of the hydraulic connection between surface water and ground water are estimated based on general hydrogeologic principles and available information.

**Table 4. Information Used To Support Time-Of-Travel Calculations.**

\*As noted previously TOT calculations were not used because of the confined nature of these wells.

<b>Input Parameter</b>	<b>Values Used</b>	<b>Range of Values and units</b>
<b>PWS Source Code</b>	-	MT0004058
<b>Transmissivity</b>	-	-
<b>Thickness</b>	-	-
<b>Hydraulic Conductivity</b>	-	-
<b>Hydraulic Gradient</b>	-	-
<b>Flow Direction</b>	-	-
<b>Effective Porosity</b>	-	-
<b>Pumping Rate</b>	-	-
<b>1-Year TOT</b>	-	-
<b>3-Year TOT</b>	-	-
<b>Stagnation Point</b>	-	-

## **CHAPTER 3 INVENTORY**

An inventory of potential sources of contamination was conducted to assess the susceptibility of the Mountain View Colony public water supply to contamination, and to identify priorities for source water protection planning. Inventories were conducted within the control zone, and the inventory, surface water buffer, and recharge regions. The inventory focuses on facilities that generate, use, store, transport, or dispose of potential contaminants, and on land types on which potential contaminants are generated, used, stored, transported, or disposed. Additionally, the inventory identifies potential sources of all primary drinking water contaminants and *Cryptosporidium*. Only significant potential contaminant sources were selected for detailed inventory.

### **Inventory Method**

Available databases were initially searched to identify businesses and land uses that are potential sources of regulated contaminants in the inventory region. The following steps were followed:

Step 1: Land cover is identified from the National Land Cover Dataset compiled by the U.S. Geological Survey and U.S. Environmental Protection Agency (U.S.G.S., 2000). Land cover types in this dataset were mapped from satellite imagery at 30-meter resolution using a variety of supporting information.

Step 2: EPA's Envirofacts System was queried to identify EPA regulated facilities. This system accesses the following databases: Resource Conservation and Recovery Information System (RCRIS), Biennial Reporting System (BRS), Toxic Release Inventory (TRI), Permit Compliance System (PCS), and Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS). The available reports were browsed for facility information including the Handler/Facility Classification to be used in assessing whether a facility is a significant potential contaminant source.

Step 3: DEQ databases were queried to identify Underground Storage Tanks (UST), hazardous waste contaminated sites, landfills, and abandoned mines.

Step 4: Major road and rail transportation routes were identified.

Step 5. All significant potential contaminant sources were identified in the inventory region and land uses and facilities that generate, store, transport, or dispose large quantities of hazardous materials were identified within the recharge region.

Potential contaminant sources are designated as significant if they fall into one of the following categories:

- |  |   |
|--|---|
| 1) Large quantity hazardous waste generators | 6) Cultivated cropland                    |
| 2) Landfills                                 | 7) Animal feeding operations              |
| 3) Hazardous waste contaminated sites        | 8) Wastewater lagoons or spray irrigation |
| 4) Underground storage tanks                 | 9) Septic systems                         |
| 5) Major roads or rail transportation routes | 10) Sewered residential areas             |

- 11) Storm sewer outflows
- 12) Floor drains, sumps, or dry wells

- 13) Abandoned or active mines

### **Inventory Results/Control Zones**

The 100 foot control zones around each of the Colony's wells include a portion of agricultural fields, a short segment of the ephemeral drainage channels, and for Well 2 a small segment of the access road. Potential contaminants in the control zones include primarily agriculture chemicals. The concern here is that over application of fertilizers and/or pesticides can result in those ag-chemicals infiltrating into ground water and running off in to surface water bodies that may have hydraulic connection with shallow ground water. It would be still be advisable for the Colony to restrict the use of fertilizers, pesticides, or herbicides near the well locations. It would also be advisable to keep live stock out of the 100 foot control zones.

### **Inventory Results/Inventory Region**

A crude oil pipeline crosses the inventory region about 100 feet southwest of Well 2 and about 200 feet southwest of Well 1 ([Figure 3](#)). The hazard associated with the pipeline comes from possible large volume leak that could result in petroleum products infiltrating into the groundwater. Pipelines are equipped with leak detection and automated shut-down capabilities which reduce the hazard the pipeline poses to the ground water. In addition, the pipeline is located down-gradient from both wells, which means that ground water beneath the pipeline is flowing away from the wells and not towards them. This also helps reduce the hazard the pipeline poses to the Colony's source water.

The Colony operates a wastewater treatment facility with two lagoons devoted to domestic wastes (Appendix C). The lagoon facility at the Colony appears to be about 170 feet south of Well 1 and approximately 200 feet south of Well 2 ([Figure 2](#)). This location is down-gradient from the two wells. Within the inventory region all of the land is low septic density. Septic density is used to estimate the number and extent of septic systems in an area ([Figure 3](#)). Low septic density is not considered to be a potential source of contamination.

Agricultural land use accounts for well over 90% of the land use within the inventory region. From the aerial photo in [Figure 3](#), it appears that the percentage of ag-land within the inventory region is accurate. Irrigated agricultural land is considered be a significant potential contaminant source. Over application of fertilizers and/or pesticides can result in those ag-chemicals infiltrating into ground water and running off in to surface water bodies that may have hydraulic connection with aquifers that supply water. The percentage of ag-land in the inventory region is large enough to be assigned a high hazard rating in accordance with the Source Water Protection Program guidelines.

Fuel storage facilities are also considered to be significant potential contaminant sources. Although no information is available showing the location of fuel storage tanks, it is assumed that the Colony has either above ground tanks or underground storage tanks for fuel for farm equipment. If the fuel storage tanks are locate at or near the main Colony complex, the tanks would be located down-gradient from the wells and would not pose a threat to the Colony's source water.

It is also assumed that the Colony stores some volume of ag-chemicals like fertilizer, herbicides, and possibly pesticides on site. The volume and method of storage is unknown. It is assumed that the

storage area for the ag-chemicals is near the Colony complex and therefore would be located down-gradient from the public water supply wells.

Other potential contaminant sources in the Mountain View Colony area possibly include Class V injection wells (floor drains, French drains, etc). These are drains that are open to the shallow aquifer system and that are not connected to a septic system or sewer service. Class V wells were common in the past in a variety of private and commercial shops. The threat from Class V injection wells cannot be determined because an accurate inventory of these wells has not been completed for Montana. A local inventory of Class V injection wells is the best way to assess the threat they may pose to the source water.

From the above list of potential contaminant sources, some are considered significant based upon the following factors: the volume of potential releases, the volume of hazardous materials typically handled, the potential of the released materials to impact nearby surface water or groundwater, and the proximity of the sources to the PWS well and infiltration lines. Significant potential contaminant sources from the above section are summarized for each source of water in Table 5 below.

**Table 5. Significant Potential Contaminant Sources in the Inventory Region**

Source	Contaminant	Hazard
<b>Crude Oil Pipeline</b>	Variety of hazardous materials including VOCs and SOCs, others?	Leaks and releases
<b>Cultivated Cropland</b> (more than 50% in the inventory region)	Fertilizers, pesticides, pathogens, nitrate	Spills, over application, surface runoff
<b>Fuel Storage Facilities</b>	VOCs	Accidents, spills, or tank failures.
<b>Class V Injection Wells</b> (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.	VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate	Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system

### **Inventory Results/Recharge Region**

Land cover in the recharge or watershed region is over 50% agricultural land, with some open water and wetlands ([Figure 7](#)). As previously mentioned agricultural land is considered a potential contaminant sources due to the use of fertilizers, pesticides and herbicides. Montana Highway 3 runs through the western part of the recharge region, however it is far enough away and with little traffic that it is not considered to be a significant potential contaminant source.

### **Inventory Update**

The owners, manager, or the certified water system operator(s) for the public water supply should update the inventory for their records every year. Changes in land uses or potential contaminant sources should be noted and additions made as needed. The complete inventory should be submitted to DEQ at least every 5 years to ensure that this report/plan stays current in the public record.

## **Inventory Limitations**

The potential sources of contaminants described above are identified from readily available information. Consequently, unregulated activities or unreported contaminant releases may have been overlooked. The use of multiple sources of information, however, should ensure that the major threats to the source water have been identified.

## CHAPTER 4 SUSCEPTIBILITY ASSESSMENT

Susceptibility is the potential for a public water supply to draw in water contaminated by inventoried sources. Susceptibility is assessed in order to help prioritize management actions for each potential contaminant source.

The goal of source water management is to protect the source water by 1) controlling activities in the control zone, 2) managing significant potential contaminant sources in the inventory region, and 3) ensuring that land use activities in the recharge region pose minimal threats to the source water. Management priorities in the inventory region are determined by ranking the significant potential contaminant sources identified in the previous chapter according to susceptibility. The PWS operators, town, and county officials could pursue alternative management approaches to help reduce susceptibility that are listed in Table 8 and discussed briefly in Chapter 5.

Susceptibility is determined by considering the hazard rating for each potential contaminant source and the existence of barriers that decrease the likelihood that contaminated water will flow to the PWS wells (Tables 7 and 8). For point sources, hazard is rated by the proximity of a potential contaminant source to the wells.

When time-of-travel calculations are performed, high hazard is assigned to point sources within the 1-year time-of-travel distance to a well. A moderate hazard rating is assigned to point sources located between the 1-year time-of-travel distance and the 3-year time-of-travel distance to a well. A low hazard rating is assigned to point sources located farther than the 3-year time-of-travel distance.

When the inventory region is based on a 1-mile fixed radius circle or is based on hydrogeologic mapping, hazard levels are assigned based on the proximity of the potential contaminant source to the wells. Potential contaminant sources closer to the public water supply well are assigned higher hazard ratings than those that are farther away. Table 6 shows the general guidelines for assigning hazard to potential contaminant sources when a 1-mile fixed radius circle is used for the inventory region.

**Table 6. Hazard of potential contaminant sources.**

Potential Contaminant Source	High Hazard	Moderate Hazard	Low Hazard
<b>Point Sources</b>	Within the Inventory Region and Relatively close ( <i>Between 100 and 500 feet</i> )* from the well.	Within the Inventory Region and <i>Between 500 and ½ mile</i> * from the well.	Within the Inventory Region and <i>Between ½ mile and 1 mile</i> * from the well or beyond the Inventory Region boundary.
<b>Septic Systems</b>	More than 300 per sq. mi.	50 – 300 per sq. mi.	Less than 50 per sq. mi.
<b>Municipal Sanitary Sewer</b> (percent land use)	More than 50 percent of region	20 to 50 percent of region	Less than 20 percent of region
<b>Cropped Agricultural Land</b> (percent land use)	More than 50 percent of region	20 to 50 percent of region	Less than 20 percent of region

\* These are arbitrary distances but they can be used as a general guide to assign hazard ratings for point sources when a 1-mile fixed radius circle is used as the inventory region.

Barriers to contamination can be anything that decreases the likelihood that contaminants will reach a well. Barriers can be engineered structures, management actions, or natural conditions. Examples of engineered barriers are spill catchment structures for industrial facilities and leak detection for underground storage tanks. Emergency planning and best management practices are considered management barriers. Thick clay-rich soils, a deep water table or a thick saturated zone above the well intake can be natural barriers. Table 7 shows how barriers are used to adjust the final susceptibility ratings.

**Table 7. Susceptibility of Source Water based on Hazard rating and the presence of Barriers**

	<b>High Hazard Rating</b>	<b>Moderate Hazard Rating</b>	<b>Low Hazard Rating</b>
<b>No Barriers</b>	Very High Susceptibility	High Susceptibility	Moderate Susceptibility
<b>One Barrier</b>	High Susceptibility	Moderate Susceptibility	Low Susceptibility
<b>Multiple Barriers</b>	Moderate Susceptibility	Low Susceptibility	Very Low Susceptibility

Susceptibility ratings are presented individually for each significant potential contaminant source and each associated contaminant on the following page (Table 8).

**Table 8. Susceptibility Assessment Significant Potential Contaminant Sources in the Inventory Region - Mountain View Colony Public Water Supply.**

<b>Inventory Region</b>							
<b>Source</b>	<b>ID Number on Maps</b>	<b>Contaminant</b>	<b>Hazard</b>	<b>Hazard Rating</b>	<b>Barriers</b>	<b>Susceptibility</b>	<b>Management Recommendations</b>
<b>Cultivated Cropland</b> (>50% in the inventory region)	Not Numbered	Fertilizers, pesticides, pathogens, nitrate	Spills, over-application, surface runoff	<b>High</b>	None	<b>Very High</b>	-Support the agricultural community's educational efforts to distribute materials and resources to land owners on the proper application and storage of pesticide and fertilizers; implement agricultural BMPs
<b>On-Site Sewer And Wastewater Treatment System</b>	Not Numbered	Nitrate and Pathogens, possibly other contaminants including VOCs and SOCs.	Leaks and Releases	<b>Moderate</b>	-Down-gradient from both Wells*	<b>Low</b>	-Support maintenance, rehabilitation, or replacement of existing sewer mains; use of sewer main liners; and rapid response planning for leaks or ruptures. - Review permit status (contact DEQ Permitting and Compliance Water Protection Bureau – 406-444-3080 for more information) and ensure proper operation and maintenance, emergency planning, training of local emergency response personnel, groundwater monitoring, spill prevention and BMPs.
<b>Crude Oil Pipeline</b>	Not Numbered on the map	Variety of hazardous materials including VOCs and SOCs, others?	Leaks and Releases	<b>Moderate</b>	-Automated leak detection and shut down technology -Down-gradient from both Wells*	<b>Low</b>	- Maintain preparedness of local emergency personnel through active training, storm water diversion and other measures
<b>Ag-chemical storage facilities</b>	Not Numbered on the map	Nitrate and SOCs	Spills, Leaks and Releases	<b>Moderate</b>	-Down-gradient from both Wells*	<b>Low</b>	-Keep storage containers away from wells and out of the 100-ft control zone -Monitor use and maintain records on volumes used. This can help to identify loses or releases that are not obvious to visual observation. -Take action to clean up any releases or accidental spills.

Town of Mountain View Colony PWS  
SWDAR

<p><b>Fuel Storage Facilities</b></p>	<p>Not Numbered on the map</p>	<p>VOCs</p>	<p>Spills, Leaks and Releases</p>	<p><b>Moderate</b></p>	<p>-Down-gradient from both Wells*</p>	<p><b>Low</b></p>	<p>-Install storage tanks that meet current tank construction design standards. -Monitor fuel use and maintain records on volumes used. This can help to identify loses or releases that are not obvious to visual observation. -Take action to clean up any releases or accidental spills.</p>
<p><b>Class V Injection Wells</b> (existence and locations are not known) where storm and/or wastewater is concentrated and recharges groundwater.</p>	<p>Not Numbered</p>	<p>VOCs, SOCs, petroleum hydrocarbons, metals, pathogens, nitrate</p>	<p>Leaks, spills, improper handling and disposal/discharge of chemicals used by various businesses and are released to systems that allow infiltration of contaminants to the subsurface or to the storm water system</p>	<p><b>Unknown</b></p>	<p><i>Unknown</i></p>	<p><b>Unknown</b></p>	<p>Inventory; Provide educational information, materials and resources to business owners and the public on proper waste disposal and recycling</p>

\*Down-gradient location is a barrier that is given additional weight in lowering the susceptibility rating (see explanation on page # of this report).

## **Management Recommendations**

It should be noted that even small releases of some chemicals in close proximity to a well, spring, infiltration gallery, or surface water intake can have significant negative impact on water quality, and is therefore a significant threat to a public water supply. Steps can be taken to reduce the likelihood of releases to the source water for the PWS or in the vicinity of the water sources (wells, springs, etc.). Some of these steps (considered management recommendations) are listed below. Some management recommendations are also included in the susceptibility table (Table 8). If these, and other, management actions are implemented; they may be considered additional barriers that will reduce the susceptibility of the public water supply wells to specific sources of contamination.

Specific management recommendations for the Mountain View Colony Public Water Supply:

The two wells used for the public water supply at Mountain View Colony are shallow, located close to ephemeral stream channels, and they are completed in an unconfined bedrock aquifer. The aquifer providing water to the wells is very likely in hydraulic connection with surface water and it is possible that the connection could be direct via the ephemeral channels. As a consequence, these wells are susceptible to potential contamination from surface water sources or surface water runoff. A preliminary assessment for ground water under the direct influence of surface water (GWUDISW) should be completed and based on the results of that assessment a micro-particulate analysis may be needed. If the wells fail these tests, full-time disinfection and filtration may be required. If the wells pass both tests, disinfection and treatment may not be required by the DEQ. Another management option for dealing with the susceptibility to surface water would be to drill deeper wells that are not located near the ephemeral stream channels. Deeper aquifers in this area appear to be confined and would be less influenced by hydraulic connection with surface water. However, the quality of water from deeper aquifers may require treatment to make the water acceptable for consumption.

The public water supply serving Mountain View Colony is highly susceptible to the agricultural land in the inventory region. Using Best Management Practices (BMPs) for fertilizer, pesticide, and herbicide application on the Colony's land, and working with neighboring farms to increase awareness of the public water supply's location and encouraging the use of BMPs would help lower the hazard posed by agricultural chemicals. Working with county and regional emergency response personnel to make sure they are aware of the public water supply's location in relation to the crude oil pipeline will also help shorten response time and could lessen the hazard posed by the pipeline.

Several counties have compiled Emergency Response Plans that were then adopted by the local communities. The usefulness and effectiveness of a response plan are maximized if it contains a clear listing of all emergency contacts, emergency numbers, and resources available within the county to respond to an emergency situation, such as a hazardous material spill. Emergency plans are not difficult to develop or distribute, but have a significant benefit to the citizens and municipalities within the county.

## CHAPTER 5 MONITORING WAIVERS

### Waiver Recommendation

It does not appear that Mountain View Colony has been granted any water quality monitoring waivers based on the information available for this report. Based on the susceptibility assessment of the source water, the Source Water Protection Program does not recommend waivers at this time. From a source water protection standpoint, water quality monitoring will act as a first defense to detect problems with water quality in the area should they arise.

However, to be sure that eligibility for all available waivers is considered, the public water supply operators are encouraged to carefully review the following section on Monitoring Waiver Requirements below. If after reviewing this section it is determined that an additional waivers are feasible, the PWS should submit a letter with the proper documentation to DEQ requesting monitoring waivers. Table 9 in the Susceptibility Chapter can be used as a guide to request monitoring waivers.

### Monitoring Waiver Requirements

The 1986 Amendments to the Safe Drinking Water Act require that community and non-community PWSs sample drinking water sources for the presence of volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). The US EPA has authorized states to issue monitoring waivers for the organic chemicals to systems that have completed an approved waiver application and review process. All PWSs in the State of Montana are eligible for consideration of monitoring waivers for several organic chemicals. The chemicals diquat, endothall, glyphosate, dioxins, ethylene dibromide (EDB), dibromochloropropane (DBCP), and polychlorinated biphenyls are excluded from monitoring requirements by statewide waivers.

### Use Waivers

A Use Waiver can be allowed if through a vulnerability assessment, it is determined that specific organic chemicals were not used, manufactured, or stored in the area of a water source (or source area). If certain organic chemicals have been used, or if the use is unknown, the system would be determined to be vulnerable to organic chemical contamination and ineligible for a Use Waiver for those particular contaminants.

### Susceptibility Waivers

If a Use Waiver is not granted, a system may still be eligible for a Susceptibility Waiver, if through a vulnerability assessment it is demonstrated that the water source would not be susceptible to contamination. Susceptibility is based on prior analytical or vulnerability assessment results, environmental persistence, and transport of the contaminants, natural protection of the source, wellhead protection program efforts, and the level of susceptibility indicators (such as nitrate and coliform bacteria). The vulnerability assessment of a surface water source must consider the watershed area above the source, or a minimum fixed radius of 1.5 miles up gradient of the surface water intake. PWSs developed in unconfined aquifers should use a minimum fixed radius of 1.0 mile as an area of investigation for the use of organic chemicals. Vulnerability assessment of spring water sources should use a minimum fixed radius of 1.0 mile as an area of investigation for the use of organic chemicals. Shallow groundwater sources under the direct influence of surface water (GWUDISW) should use the same area of investigation as surface water systems; that is, the watershed area above the source, or a minimum fixed radius of 1.5 miles upgradient of the point of diversion. The purpose of the vulnerability assessment procedures

outlined in this section is to determine which of the organic chemical contaminants are in the area of investigation.

Given the wide range of landforms, land uses, and the diversity of groundwater and surface water sources across the state, additional information is often required during the review of a waiver application. Additional information may include well logs, pump test data, or water quality monitoring data from surrounding public water systems; delineation of zones of influence and contribution to a well; Time-of-Travel or attenuation studies; vulnerability mapping; and the use of computerized groundwater flow and transport models. DEQ's PWS Section and DEQ's Source Water Protection Program will conduct review of an organic chemical monitoring waiver application. Other state agencies may be asked for assistance.

#### Susceptibility Waiver for Confined Aquifers

Confined groundwater is isolated from overlying material by relatively impermeable geologic formations. A confined aquifer is subject to pressures higher than atmospheric pressure that would exist at the top of the aquifer if the aquifer were not geologically confined. A well that is drilled through the impervious layer into a confined aquifer will enable the water to rise in the borehole to a level that is proportional to the water pressure (hydrostatic head) that exists at the top of a confined aquifer.

The susceptibility of a confined aquifer relates to the probability of an introduced contaminant to travel from the source of contamination to the aquifer. Susceptibility of an aquifer to contamination will be influenced by the hydrogeologic characteristics of the soil, vadose zone (the unsaturated geologic materials between the ground surface and the aquifer), and confining layers. Important hydrogeologic controls include the thickness of the soil, the depth of the aquifer, the permeability of the soil and vadose zones, the thickness and uniformity of low permeability and confining layers between the surface and the aquifer, and hydrostatic head of the aquifer. These factors will control how readily a contaminant will infiltrate and percolate toward the groundwater.

The Susceptibility waiver has the objective of assessing the potential of contaminants reaching the groundwater used by the PWS. A groundwater source that appears to be confined from surface infiltration in the immediate area of the wellhead may eventually be affected by contaminated groundwater flow from elsewhere in the recharge area. Contaminants could also enter the confined aquifer through improper well construction or abandonment where the well provides a hydraulic connection from the surface to the confined aquifer. The extent of confinement of an aquifer is critical to limiting susceptibility to organic chemical contamination. Regional conditions that define the confinement of a groundwater source must be demonstrated by the PWS in order to be considered for a confined aquifer susceptibility waiver.

Confinement of an aquifer can be demonstrated by pump test data (storage coefficient), geologic mapping, and well logs. Site-specific information is required to sufficiently represent the recharge area of the aquifer and the zone of contribution to the PWS well. The following information should be provided:

- Abandoned wells in the region (zone of contribution to the well),
- Other wells in the region (zone of contribution to the well),
- Nitrate/Coliform bacteria analytical history of the PWS well,
- Organic chemical analytical history of the PWS well,

#### Susceptibility Waiver for Unconfined Aquifers

Unconfined aquifers are the most common source of usable groundwater. Unconfined aquifers differ from confined aquifers in that the groundwater is not regionally contained within relatively impervious geologic strata. As a result, the upper groundwater surface or water table in an unconfined aquifer is not under pressure that produces hydrostatic head common to confined aquifers.

Unconfined aquifers are usually locally recharged from surface water or precipitation. In general, groundwater flow gradients in unconfined aquifers reflect surface topography, and the residence time of water in the aquifer is comparatively shorter than for water in confined aquifers. Similar water chemistry often exists between unconfined groundwater and area surface water, and physical parameters and dissolved constituents can be an indicator of the hydraulic connection between groundwater and surface water. Consequently, unconfined aquifers can be susceptible to contamination by organic chemicals migrating from the ground surface to groundwater.

The objective of the susceptibility waiver application is to assess the potential of organic chemical migration from the surface to the unconfined aquifer. The general procedures make use of a combination of site-specific information pertaining to the location and construction of the source development, monitoring history of the source, geologic characteristics of the unsaturated soil and vadose zones, and chemical characteristics of the organic chemicals pertaining to their mobility and persistence in the environment. The zone of contribution of the unconfined groundwater source must be defined and plotted. This should describe the groundwater flow directions, gradients, and a 3-year time-of-travel. All surface bodies within 1,000 feet of the PWS well(s) must be plotted. Analytical monitoring history of the PWS well and those nearby should be provided as well.

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## GLOSSARY\*

**Acute Health Effect.** An adverse health effect in which symptoms develop rapidly.

**Alkalinity.** The capacity of water to neutralize acids.

**Best Management Practices (BMPs).** Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from nonpoint sources.

**Coliform Bacteria.** Bacteria found in the intestinal tracts of animals. Their presence in water is an indicator of pollution and possible contamination by pathogens.

**Confined Aquifer.** A fully saturated aquifer overlain by a confining unit such as a clay layer. The static water level in a well in a confined aquifer is at an elevation that is equal to or higher than the base of the overlying confining unit.

**Confining Unit.** A geologic formation that inhibits the flow of water.

**Delineation.** A process of mapping source water management areas.

**Effective Porosity.** The percent of soil, sediment, or rock through which fluids, such as air or water, can pass. Effective porosity is always less than total porosity because fluids can not pass through all openings.

**Hardness.** Characteristic of water caused by presence of various salts. Hard water may interfere with some industrial processes and prevent soap from lathering.

**Hazard.** A measure of the potential of a contaminant leaked from a facility to reach a public water supply source. Proximity or density of significant potential contaminant sources determines hazard.

**Hydraulic Conductivity.** A coefficient of proportionality describing the rate at which water can move through an aquifer.

**Inventory Region.** A source water management area that encompasses an area expected to contribute water to a public water supply well within a fixed distance or a specified groundwater time-of-travel distance.

**Maximum Contaminant Level (MCL).** Maximum concentration of a substance in water that is permitted to be delivered to the users of a public water supply. Set by EPA under authority of the Safe Drinking Water Act.

**Nitrate.** An important plant nutrient and type of inorganic fertilizer. In water the major sources of nitrates are septic tanks, feed lots and fertilizers.

**Nonpoint-Source Pollution.** Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet.

**Pathogens.** A bacterial organism or virus typically found in the intestinal tracts of mammals, capable of producing disease.

**Point-Source.** A stationary location or fixed facility from which pollutants are discharged.

**Porosity.** The percent of soil, sediment, or rock filled by air, water, or other fluid.

**Public Water Supply (PWS).** A system that provides piped water for human consumption to at least 15 service connections or regularly serves 25 individuals.

**SIC Code.** The U.S. Standard Industrial Classification (SIC) Codes classify categories of businesses. SIC Codes cover the entire range of business categories that exist within the economy.

**Source Water Protection Area.** For surface water sources, the land and surface drainage network that contributes water to a stream or reservoir used by a public water supply.

**Susceptibility (of a PWS).** The potential for a PWS to draw water contaminated at concentrations that would pose concern. Susceptibility is evaluated at the point immediately preceding treatment or, if no treatment is provided, at the entry point to the distribution system.

**Synthetic Organic Compounds (SOC).** Man made organic chemical compounds (e.g. pesticides).

**Total Dissolved Solids (TDS).** The dissolved solids collected after a sample of a known volume of water is passed through a very fine mesh filter.

**Total Maximum Daily Load (TMDL).** The total pollutant load to a surface water body from point, non-point, and natural sources. The TMDL program was established by section 303(d) of the Clean Water Act to help states implement water quality standards.

**Turbidity.** The cloudy appearance of water caused by the presence of suspended matter.

**Transmissivity.** The ability of an aquifer to transmit water.

**Unconfined Aquifer.** An aquifer containing water that is not under pressure. The water table is the top surface of an unconfined aquifer.

**Volatile Organic Compounds (VOC).** Any organic compound which evaporates readily to the atmosphere (e.g. fuels and solvents).

**Recharge Region / Watershed.** The land area that drains into a stream; the watershed for a major river may encompass a number of smaller watersheds that ultimately combine at a common delivery point.

\* Definitions taken from EPA's Glossary of Selected Terms and Abbreviations and other sources.

## FIGURES

[Figure 1.](#) General Location Map.

[Figure 2.](#) Climate Summary– Imbedded in text on page 4.

[Figure 3.](#) Inventory of Potential Contaminant Sources.

[Figure 4.](#) General Geology Map

[Figure 5.](#) Well Depth Histogram – Not Used In This Report

[Figure 6 and 7.](#) Inventory Region and Recharge Region Maps with Landcover / Landuse.

## **APPENDICES**

## APPENDIX A – Well Logs for Mountain View Colony

Montana Bureau of Mines and Geology  
Ground-Water Information Center Site Report  
MOUNTAIN VIEW COLONY\*WELL #1

[Plot this site on a topographic map](#)

### Location Information

GWIC Id: 186091	Source of Data: LOG
Location (TRS): 04N 24E 27 DB	Latitude (dd): 46.0655
County (MT): YELLOWSTONE	Longitude (dd): -108.7237
DNRC Water Right:	Geomethod: TRS-SEC
PWS Id:	Datum: NAD27
Block:	Altitude (feet):
Lot:	Certificate of Survey:
Addition:	Type of Site: WELL

### Well Construction and Performance Data

Total Depth (ft): 35.10	How Drilled: ROTARY
Static Water Level (ft): 22.90	Driller's Name: VIDIC
Pumping Water Level (ft):	Driller License: WWC254
Yield (gpm): 0.50	Completion Date (m/d/y): 9/12/2000
Test Type: AIR LIFT	Special Conditions:
Test Duration: 1.00	Is Well Flowing?:
Drill Stem Setting (ft): 45.00	Shut-In Pressure:
Recovery Water Level (ft): 22.90	Geology/Aquifer: Not Reported
Recovery Time (hrs): 1.00	Well/Water Use: MONITORING
Well Notes:	

### Hole Diameter Information

From	To	Diameter
0.0	45.1	6.0

### Casing Information<sup>1</sup>

From	To	Dia	Wall Thickness	Pressure Rating	Joint Type
-3.0	35.1	2.0		200.00	PVC

### Annular Seal Information

From	To	Description
0.0	34.0	BAROID CASING SEAL

### Completion Information<sup>1</sup>

From	To	Dia	# of Openings	Size of Openings	Description
35.1	45.1	2.0		0.020	FACTORY SLOTTED

### Lithology Information

From	To	Description
0.0	1.0	TOPSOIL
1.0	8.0	BROWN SANDSTONE SOFT
8.0	9.0	HARD SANDSTONE
9.0	30.0	BROWN SANDSTONE
30.0	31.0	HARD GRAY SANDSTONE
31.0	40.0	GRAY SAND (.5 GPM)
40.0	43.0	BLUE SHALE

<sup>1</sup> - All diameters reported are **inside** diameter of the casing.

These data represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. Note: non-reported casing, completion, and lithologic records may exist in paper files at GWIC.

Montana Bureau of Mines and Geology  
Ground-Water Information Center Site Report  
MOUNTAIN VIEW COLONY\*WELL #2

[Plot this site on a topographic map](#)

**Location Information**

GWIC Id: 186094	Source of Data: LOG
Location (TRS): 04N 24E 27 DB	Latitude (dd): 46.0655
County (MT): YELLOWSTONE	Longitude (dd): -108.7237
DNRC Water Right:	Geomethod: TRS-SEC
PWS Id:	Datum: NAD27
Block:	Altitude (feet):
Lot:	Certificate of Survey:
Addition:	Type of Site: WELL

**Well Construction and Performance Data**

Total Depth (ft): 20.00	How Drilled: ROTARY
Static Water Level (ft): 18.50	Driller's Name: VIDIC
Pumping Water Level (ft):	Driller License: WWC254
Yield (gpm): 0.10	Completion Date (m/d/y): 9/12/2000
Test Type: AIR LIFT	Special Conditions:
Test Duration: 0.50	Is Well Flowing?:
Drill Stem Setting (ft): 25.00	Shut-In Pressure:
Recovery Water Level (ft): 18.50	Geology/Aquifer: Not Reported
Recovery Time (hrs): 3.00	Well/Water Use: MONITORING
Well Notes:	

**Hole Diameter Information**

From	To	Diameter
0.0	25.2	6.0

**Casing Information<sup>1</sup>**

From	To	Dia	Wall Thickness	Pressure Rating	Joint Type
-2.0	20.0	2.0		200.00	PVC

**Annular Seal Information**

From	To	Description
0.0	19.0	BAROID CASING SEAL

**Completion Information<sup>1</sup>**

From	To	Dia	# of Openings	Size of Openings	Description
20.0	25.0	2.0		0.020	FACTORY SLOTTED

**Lithology Information**

From	To	Description
0.0	1.0	TOPSOIL
1.0	7.0	BROWN SANDSTONE SOFT
7.0	8.0	HARD SANDSTONE
8.0	15.0	BROWN SANDSTONE
15.0	20.0	GRAY SANDSTONE
20.0	23.0	BROWN CLAY AND SHALE

<sup>1</sup> - All diameters reported are **inside** diameter of the casing.

These data represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted. Note: non-reported casing, completion, and lithologic records may exist in paper files at GWIC.

APPENDIX B – Water Quality Data



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

City: BROADVIEW

County: YELLOWSTONE

Tot Pop: 80

Pri Src: GW

Class: C

Last Snty Srv Dt: 06/26/2003

Activity Status: A

Type	Conn's	In Svc Dts	Eff Begin Dt	Avg Daily Cnt	Type
RS	10	1/1-12/31	12/16/2002	80	R

**Administrative Contact**

WIPF, WALTER  
RR 1 BOX 39  
BROADVIEW, MT 59015

**Financial Contact**

WIPF, WALTER  
RR 1 BOX 39  
BROADVIEW, MT 59015

**Operator**

WIPF, WALTER M.  
MOUNTAIN VIEW COLONY  
14435 OSWALD ROAD  
BROADVIEW, MT 59015

**Owner**

WIPF, WALTER  
RR 1 BOX 39  
BROADVIEW, MT 59015

**Facilities and Entry Points**

Status: A 12/16/2002 Fac ID: CH001 COMMON HEADER WELL 1 2 Src: GW  
Lat/Long Dec: DMS:

Smp Pt ID	Status	Description
EP502	A 10/27/2000	EP FOR CH WELLS 1 2

Status: A 12/16/2002 Fac ID: DS001 DISTRIBUTION SYSTEM Src: GW  
Lat/Long Dec: DMS:

Smp Pt ID	Status	Description
SP001	A 03/02/2000	

Status: A 06/26/2003 Fac ID: PC001 PRESSURE CONTROL Src: GW  
Lat/Long Dec: DMS:

Status: A 06/26/2003 Fac ID: ST001 STORAGE FACILITY Src: GW  
Lat/Long Dec: DMS:

Status: A 12/16/2002 Fac ID: WL002 WELL 1 Src: GW  
Lat/Long Dec: 46.0655 DMS: .00 .00  
108.7237

Status: A 12/16/2002 Fac ID: WL003 WELL 2 Src: GW  
Lat/Long Dec: 46.0655 DMS: .00 .00  
108.7237



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

**Sample Schedules/Monitoring Requirements**

Attention Community and Noncommunity Nontransient systems: the new Disinfection Byproducts Rule has taken effect. Please contact the PWS Section at 444-4400 for additional monitoring requirements.

Fac ID: DS001 Fac Name: DISTRIBUTION SYSTEM Status: A Src: GW

Smp Pt ID	Active	Smp Pt Description
SP001	A	

Group	Name	Schd Beg Date	Seas Coll Per	Requirement
3100	COLIFORM, TOTAL (TCR)	09/01/2005	1/1-12/31	1 RT MN

Fac ID: CH001 Fac Name: COMMON HEADER WELL 1 2 Status: A Src: GW

Smp Pt ID	Active	Smp Pt Description
EP502	A	EP FOR CH WELLS 1 2

Group	Name	Schd Beg Date	Init MP Beg	Seas Coll Per	Requirement
ARSE	CDS ARSENIC	01/01/2005	01/01/2005	1/1-12/31	1 RT 3Y
COMB	CDS RADIUMS COMBINED	01/01/2004	01/01/2004	1/1-12/31	1 RT QT
FLUO	CDS FLUORIDE	01/02/2005	01/02/2005	1/1-12/31	1 RT QT
GRAL	CDS RAD GROSS ALPHA	01/01/2004	01/01/2004	1/1-12/31	1 RT QT
INO1	CDS P2-5 INORGANICS	01/01/2005	01/01/2005	1/1-12/31	1 RT 3Y
NITR	CDS NITRATE NITRITE	01/01/2005	01/01/2005	1/1-12/31	1 RT YR
SOC1	CDS SOC	12/01/2002	01/01/2002	1/1-12/31	1 RT 3Y
VOC1	CDS VOC	01/01/2005	01/01/2005	1/1-12/31	1 RT 3Y

Fac ID: DS001 Fac Name: DISTRIBUTION SYSTEM Status: A Src: GW

Smp Pt ID	Active	Smp Pt Description
SP001	A	

Group	Name	Schd Beg Date	Init MP Beg	Seas Coll Per	Requirement
PBCU	CDS LEAD COPPER ONLY	01/01/2011	01/01/2011	1/1-12/31	5 RT 9Y

**Bacti Results FROM 01/01/2000 TO 11/08/2005**

Collection Dt	Lab Number	Type	Orig Lab #	Code	TCR Presence	Fec/EC Result
10/10/2005	B05100507-001A	RT	3014	COLIFORM, E. COLI	A	-
10/10/2005	B05100507-001A	RT	3100	COLIFORM, TOTAL (TCR)	A	-
09/13/2005	B05090803-001A	RT	3014	COLIFORM, E. COLI	A	-
09/13/2005	B05090803-001A	RT	3100	COLIFORM, TOTAL (TCR)	A	-
08/07/2005	B05080598-001A	RT	3014	COLIFORM, E. COLI	A	-
08/07/2005	B05080598-001A	RT	3100	COLIFORM, TOTAL (TCR)	A	-
07/18/2005	B05071093-001A	RT	3014	COLIFORM, E. COLI	A	-
07/18/2005	B05071093-001A	RT	3100	COLIFORM, TOTAL (TCR)	A	-
07/11/2005	B05070562-001A	RT	3014	COLIFORM, E. COLI	A	-
07/11/2005	B05070562-001A	RT	3100	COLIFORM, TOTAL (TCR)	P	+
06/06/2005	B05060373-001A	RT	3014	COLIFORM, E. COLI	A	-
06/06/2005	B05060373-001A	RT	3100	COLIFORM, TOTAL (TCR)	A	-
05/09/2005	B05050590-001A	RT	3014	COLIFORM, E. COLI	A	-



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Collection Dt	Lab Number	Type	Orig Lab #	Code	TCR Presence	Fec/EC Result
05/09/2005	B05050590-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
04/11/2005	B05040693-001A	RT		3014	COLIFORM, E. COLI	A -
04/11/2005	B05040693-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-001A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-002A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-002A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-003A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-003A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-004A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-004A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-005A	RT		3100	COLIFORM, TOTAL (TCR)	A -
03/07/2005	B05030386-005A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-006A	RT		3014	COLIFORM, E. COLI	A -
03/07/2005	B05030386-006A	RT		3100	COLIFORM, TOTAL (TCR)	A -
02/21/2005	B05021057-001A	RP	B05020492-01	3014	COLIFORM, E. COLI	A -
02/21/2005	B05021057-001A	RP	B05020492-01	3100	COLIFORM, TOTAL (TCR)	A -
02/21/2005	B05021057-002A	RP	B05020492-01	3014	COLIFORM, E. COLI	A -
02/21/2005	B05021057-002A	RP	B05020492-01	3100	COLIFORM, TOTAL (TCR)	A -
02/21/2005	B05021057-003A	RP	B05020492-01	3014	COLIFORM, E. COLI	A -
02/21/2005	B05021057-003A	RP	B05020492-01	3100	COLIFORM, TOTAL (TCR)	A -
02/15/2005	B05020790-001A	RP	B05020492-01	3014	COLIFORM, E. COLI	A -
02/15/2005	B05020790-001A	RP	B05020492-01	3100	COLIFORM, TOTAL (TCR)	P +
02/09/2005	B05020492-001A	RT		3014	COLIFORM, E. COLI	A -
02/09/2005	B05020492-001A	RT		3100	COLIFORM, TOTAL (TCR)	P +
01/10/2005	B05010345-001A	RT		3014	COLIFORM, E. COLI	A -
01/10/2005	B05010345-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
12/13/2004	B04120781-001A	RT		3014	COLIFORM, E. COLI	A -
12/13/2004	B04120781-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
11/08/2004	B04110395-001A	RT		3014	COLIFORM, E. COLI	A -
11/08/2004	B04110395-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
10/11/2004	B04100623-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
10/11/2004	B04100623-001A	RT		3014	COLIFORM, E. COLI	A -
09/13/2004	B04090782-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
09/13/2004	B04090782-001A	RT		3014	COLIFORM, E. COLI	A -
08/09/2004	B04080600-1	RT		3100	COLIFORM, TOTAL (TCR)	A -
07/12/2004	B04070640-001A	RT		3014	COLIFORM, E. COLI	A -
07/12/2004	B04070640-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -
06/07/2004	0531-1	RT		3100	COLIFORM, TOTAL (TCR)	A -
06/07/2004	B04060531-001A	RT		3100	COLIFORM, TOTAL (TCR)	A -



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Collection Dt	Lab Number	Type	Orig Lab #	Code	TCR Presence	Fec/EC Result
06/07/2004	B04060531-001A	RT	3014	COLIFORM, E. COLI	A	-
05/10/2004	B04050598-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
04/13/2004	B04040775-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
03/08/2004	B04030396-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
02/09/2004	B04020381-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
01/12/2004	B04010330-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
12/08/2003	B03120443-1	RT	3100	COLIFORM, TOTAL (TCR)	A	-
11/11/2003	B03110406-1	RT	3100	COLIFORM, TOTAL (TCR)	A	-
10/13/2003	B03100689-1	RT	3100	COLIFORM, TOTAL (TCR)	A	-
09/09/2003	B03090428-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
08/19/2003	B03080937-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
07/15/2003	B03070832-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
06/10/2003	B03060542-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
05/08/2003	B03050515-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
04/15/2003	B03040888-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
03/10/2003	B03030346-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
02/11/2003	B03020390-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
01/13/2003	B03010593-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-
12/05/2002	B02120284-001	RT	3100	COLIFORM, TOTAL (TCR)	A	-

**Chemical Results** FROM 01/01/2000 TO 11/08/2005

Fac ID: CH001 Fac Name: COMMON HEADER WELL 1 2 Avl: P Status: A Src: GW  
Smp Pt ID: EP502 Status: A Description: EP FOR CH WELLS 1 2 Src Typ: FN

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
IOC 16984-48-8	1025	FLUORIDE	RT	05/19/2005	08	B05051308-001A	3.57 MG/L
IOC 16984-48-8	1025	FLUORIDE	RT	12/07/2004	08	B04120415-001A	3.08 MG/L
IOC 16984-48-8	1025	FLUORIDE	RT	06/07/2004	08	B04060533-001A	4.01 MG/L
IOC 16984-48-8	1025	FLUORIDE	RT	03/22/2004	08	B04031125-001-V502	4.69 MG/L
IOC	1038	NITRATE+NITRITE (AS N)	RT	03/22/2004	08	B04031125-001-V502	0.35 MG/L
OC 630-20-6	2986	1,1,1,2-TETRACHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 71-55-6	2981	1,1,1-TRICHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 79-34-5	2988	1,1,2,2-TETRACHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 79-00-5	2985	1,1,2-TRICHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 75-34-3	2978	1,1-DICHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 75-35-4	2977	1,1-DICHLOROETHYLENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 563-58-6	2410	1,1-DICHLOROPROPENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 87-61-6	2420	1,2,3-TRICHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 96-18-4	2414	1,2,3-TRICHLOROPROPANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 120-82-1	2378	1,2,4-TRICHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 95-63-6	2418	1,2,4-TRIMETHYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 107-06-2	2980	1,2-DICHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 78-87-5	2983	1,2-DICHLOROPROPANE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 108-67-8	2424	1,3,5-TRIMETHYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 142-28-9	2412	1,3-DICHLOROPROPANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 594-20-7	2416	2,2-DICHLOROPROPANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 71-43-2	2990	BENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 108-86-1	2993	BROMOBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L



Montana Department of  
**ENVIRONMENTAL QUALITY**  
Data Source: Public Water Supply Section

Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Fac ID: CH001      Fac Name: COMMON HEADER WELL 1 2      Avl: P      Status: A      Src:  
Smp Pt ID: EP502      Status: A      Description: EP FOR CH WELLS 1 2      Src Typ: FN

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
OC 74-97-5	2430	BROMOCHLOROMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 74-83-9	2214	BROMOMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 56-23-5	2982	CARBON TETRACHLORIDE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 75-00-3	2216	CHLOROETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 74-87-3	2210	CHLOROMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 156-59-2	2380	CIS-1,2-DICHLOROETHYLENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 10061-02-6	2228	CIS-1,3-DICHLOROPROPENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 74-95-3	2408	DIBROMOMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 75-71-8	2212	DICHLORODIFLUOROMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 75-09-2	2964	DICHLOROMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 100-41-4	2992	ETHYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 87-68-3	2246	HEXACHLOROBUTADIENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 98-82-8	2994	ISOPROPYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 541-73-1	2967	M-DICHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 108-90-7	2989	MONOCHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 104-51-8	2422	N-BUTYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 103-65-1	2998	N-PROPYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 91-20-3	2248	NAPHTHALENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 95-49-8	2965	O-CHLOROTOLUENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 95-50-1	2968	O-DICHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 106-43-4	2966	P-CHLOROTOLUENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 106-46-7	2969	P-DICHLOROBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 99-87-6	2030	P-ISOPROPYLTOLUENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 135-98-8	2428	SEC-BUTYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 100-42-5	2996	STYRENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 98-06-6	2426	TERT-BUTYLBENZENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 127-18-4	2987	TETRACHLOROETHYLENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 108-88-3	2991	TOLUENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 156-60-5	2979	TRANS-1,2-DICHLOROETHYLENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 10061-02-6	2224	TRANS-1,3-DICHLOROPROPENE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 79-01-6	2984	TRICHLOROETHYLENE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 75-69-4	2218	TRICHLOROFLUOROMETHANE	RT	03/22/2004	08	B04031125-001-V502	< MDL 0 MG/L
OC 75-01-4	2976	VINYL CHLORIDE	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
OC 1330-20-7	2955	XYLENES	RT	03/22/2004	08	B04031125-001-V502	< MDL .0005 MG/L
IOC 7440-36-0	1074	ANTIMONY	RT	11/04/2002	08	B02110094-001-I502	< MDL .003 MG/L
IOC 7440-38-2	1005	ARSENIC	RT	11/04/2002	08	B02110094-001-I502	< MDL .005 MG/L
IOC 7440-39-3	1010	BARIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL .1 MG/L
IOC 7440-41-7	1075	BERYLLIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL .001 MG/L
IOC 7440-43-9	1015	CADMIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL .001 MG/L
IOC 7440-70-2	1016	CALCIUM	RT	11/04/2002	08	B02110094-001-I502	2.0 MG/L
IOC 16887-00-6	1017	CHLORIDE	RT	11/04/2002	08	B02110094-001-I502	40.0 MG/L
IOC 7440-47-3	1020	CHROMIUM	RT	11/04/2002	08	B02110094-001-I502	0.06 MG/L
IOC 16984-48-8	1025	FLUORIDE	RT	11/04/2002	08	B02110094-001-I502	4.25 MG/L
IOC 7439-95-4	1031	MAGNESIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL 0 MG/L
IOC 7439-97-6	1035	MERCURY	RT	11/04/2002	08	B02110094-001-I502	< MDL .0002 MG/L
IOC 7440-02-0	1036	NICKEL	RT	11/04/2002	08	B02110094-001-I502	< MDL .01 MG/L
IOC	1038	NITRATE+NITRITE (AS N)	RT	11/04/2002	08	B02110094-001-I502	< MDL .05 MG/L
IOC 7447-40-7	1042	POTASSIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL 0 MG/L
IOC 7782-49-2	1045	SELENIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL .005 MG/L
IOC 7440-23-5	1052	SODIUM	RT	11/04/2002	08	B02110094-001-I502	360.0 MG/L
IOC 14808-79-8	1055	SULFATE	RT	11/04/2002	08	B02110094-001-I502	357.0 MG/L
IOC 7440-28-0	1085	THALLIUM	RT	11/04/2002	08	B02110094-001-I502	< MDL .001 MG/L
WQ 471-34-1	1928	ALKALINITY, BICARBONATE	RT	11/04/2002	08	B02110094-001-I502	516.0 MG/L
WQ 471-34-1	1929	ALKALINITY, CARBONATE	RT	11/04/2002	08	B02110094-001-I502	22.0 MG/L
WQ 471-34-1	1927	ALKALINITY, TOTAL	RT	11/04/2002	08	B02110094-001-I502	459.0 MG/L
WQ	1064	CONDUCTIVITY	RT	11/04/2002	08	B02110094-001-I502	1700.0 UMHOS/CM



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Fac ID: CH001 Fac Name: COMMON HEADER WELL 1 2 Avl: P Status: A Src:  
Smp Pt ID: EP502 Status: A Description: EP FOR CH WELLS 1 2 Src Typ: FN

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
WQ 471-34-1	1915	HARDNESS, TOTAL (AS CaCO3)	RT	11/04/2002	08	B02110094-001-I502	8.0 MG/L
WQ	1925	PH	RT	11/04/2002	08	B02110094-001-I502	8.8 SU
WQ	1930	SOLIDS, TOTAL DISSOLVED (TDS)	RT	11/04/2002	08	B02110094-001-I502	1040.0 MG/L
RA	4000	GROSS ALPHA, INCLDNG RA, EXCLDNG RN	RT	11/04/2002	08	B02110094-001-R502	< MDL 3 PIC/L
RA	4010	RADIUM, COMBINED (226, 228)	RT	11/04/2002	08	B02110094-001-R502	< MDL 1 PIC/L
RA 13982-63-3	4020	RADIUM-226	RT	11/04/2002	08	B02110094-001-R502	< MDL 1 PIC/L
RA 15262-20-1	4030	RADIUM-228	RT	11/04/2002	08	B02110094-001-R502	< MDL 1 PIC/L
OC 1746-01-6	2063	2,3,7,8 TCDD (DIOXIN)	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 93-72-1	2110	2,4,5-TP (SILVEX)	RT	11/04/2002	08	B02110094-001-S502	< MDL .0002 MG/L
OC 94-75-7	2105	2,4-D	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 16655-82-6	2066	3-HYDROXYCARBOFURAN	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 15972-60-8	2051	ALACHLOR (LASSO)	RT	11/04/2002	08	B02110094-001-S502	< MDL .0002 MG/L
OC 116-06-3	2047	ALDICARB	RT	11/04/2002	08	B02110094-001-S502	< MDL .0005 MG/L
OC 1646-88-4	2044	ALDICARB SULFONE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0005 MG/L
OC 1646-87-3	2043	ALDICARB SULFOXIDE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0008 MG/L
OC 309-00-2	2356	ALDRIN	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 1912-24-9	2050	ATRAZINE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 50-32-8	2306	BENZO (A) PYRENE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 58-89-9	2010	BHC-GAMMA (LINDANE)	RT	11/04/2002	08	B02110094-001-S502	< MDL .00002 MG/L
OC 23184-66-9	2076	BUTACHLOR (MACHETE)	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 63-25-2	2021	CARBARYL	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 1563-66-2	2046	CARBOFURAN	RT	11/04/2002	08	B02110094-001-S502	< MDL .0009 MG/L
OC 57-74-9	2959	CHLORDANE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0002 MG/L
OC 75-99-0	2031	DALAPON	RT	11/04/2002	08	B02110094-001-S502	< MDL .1 MG/L
OC 103-23-1	2035	DI(2-ETHYLHEXYL) - ADIPATE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0006 MG/L
OC 117-81-7	2039	DI(2-ETHYLHEXYL) - PHTHALATE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0006 MG/L
OC 96-12-8	2931	DIBROMOCHLOROPROPANE (DBCP)	RT	11/04/2002	08	B02110094-001-S502	< MDL .00002 MG/L
OC 1918-00-9	2440	DICAMBA	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 60-57-1	2070	DIELDRIN	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 88-85-7	2041	DINOSEB	RT	11/04/2002	08	B02110094-001-S502	< MDL .0002 MG/L
OC 85-00-7	2032	DIQUAT	RT	11/04/2002	08	B02110094-001-S502	< MDL .0004 MG/L
OC 145-73-3	2033	ENDOTHALL	RT	11/04/2002	08	B02110094-001-S502	< MDL .009 MG/L
OC 72-20-8	2005	ENDRIN	RT	11/04/2002	08	B02110094-001-S502	< MDL .00001 MG/L
OC 106-93-4	2946	ETHYLENE DIBROMIDE (EDB)	RT	11/04/2002	08	B02110094-001-S502	< MDL .00001 MG/L
OC 1071-83-6	2034	GLYPHOSATE	RT	11/04/2002	08	B02110094-001-S502	< MDL .006 MG/L
OC 76-44-8	2065	HEPTACHLOR	RT	11/04/2002	08	B02110094-001-S502	< MDL .00004 MG/L
OC 1024-57-3	2067	HEPTACHLOR EPOXIDE	RT	11/04/2002	08	B02110094-001-S502	< MDL .00002 MG/L
OC 118-74-1	2274	HEXACHLOROBENZENE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 77-47-4	2042	HEXACHLOROCYCLOPENTADIENE	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 16752-77-5	2022	METHOMYL	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 72-43-5	2015	METHOXYCHLOR	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 51218-45-2	2045	METOLACHLOR	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 21087-64-9	2595	METRIBUZIN (SENCOR)	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 23135-22-0	2036	OXAMYL (VYDATE)	RT	11/04/2002	08	B02110094-001-S502	< MDL .002 MG/L
OC 87-86-5	2326	PENTACHLOROPHENOL	RT	11/04/2002	08	B02110094-001-S502	< MDL .00004 MG/L
OC 1918-02-1	2040	PICLORAM	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 1336-36-3	2383	POLYCHLORINATED BIPHENYLS (PCB)	RT	11/04/2002	08	B02110094-001-S502	< MDL .0001 MG/L
OC 1918-16-7	2077	PROPACHLOR	RT	11/04/2002	08	B02110094-001-S502	< MDL 0 MG/L
OC 122-34-9	2037	SIMAZINE	RT	11/04/2002	08	B02110094-001-S502	< MDL .00007 MG/L
OC 8001-35-2	2020	TOXAPHENE	RT	11/04/2002	08	B02110094-001-S502	< MDL .001 MG/L
OC 630-20-6	2986	1,1,1,2-TETRACHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 71-55-6	2981	1,1,1-TRICHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 79-34-5	2988	1,1,2,2-TETRACHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 79-00-5	2985	1,1,2-TRICHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 75-34-3	2978	1,1-DICHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-35-4	2977	1,1-DICHLOROETHYLENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L



Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Fac ID: CH001      Fac Name: COMMON HEADER WELL 1 2      Avl: P      Status: A      Src:  
Smp Pt ID: EP502      Status: A      Description: EP FOR CH WELLS 1 2      Src Typ: FN

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
OC 563-58-6	2410	1,1-DICHLOROPROPENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC	2419	1,2,3 - TRIMETHYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 87-61-6	2420	1,2,3-TRICHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 96-18-4	2414	1,2,3-TRICHLOROPROPANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 120-82-1	2378	1,2,4-TRICHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 107-06-2	2980	1,2-DICHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 78-87-5	2983	1,2-DICHLOROPROPANE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 108-67-8	2424	1,3,5-TRIMETHYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 142-28-9	2412	1,3-DICHLOROPROPANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 594-20-7	2416	2,2-DICHLOROPROPANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 71-43-2	2990	BENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 108-86-1	2993	BROMOBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-27-4	2943	BROMODICHLOROMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-25-2	2942	BROMOFORM	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 74-83-9	2214	BROMOMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 56-23-5	2982	CARBON TETRACHLORIDE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 124-48-1	2944	CHLORODIBROMOMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-00-3	2216	CHLOROETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 67-66-3	2941	CHLOROFORM	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 74-87-3	2210	CHLOROMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 156-59-2	2380	CIS-1,2-DICHLOROETHYLENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 10061-02-6	2228	CIS-1,3-DICHLOROPROPENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 74-95-3	2408	DIBROMOMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-71-8	2212	DICHLORODIFLUOROMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-09-2	2964	DICHLOROMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 100-41-4	2992	ETHYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 87-68-3	2246	HEXACHLOROBUTADIENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 98-82-8	2994	ISOPROPYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 541-73-1	2967	M-DICHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 108-90-7	2989	MONOCHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 104-51-8	2422	N-BUTYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 103-65-1	2998	N-PROPYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 91-20-3	2248	NAPHTHALENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 95-49-8	2965	O-CHLOROTOLUENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 95-50-1	2968	O-DICHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 106-43-4	2966	P-CHLOROTOLUENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 106-46-7	2969	P-DICHLOROBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 99-87-6	2030	P-ISOPROPYLTOLUENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 100-42-5	2996	STYRENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 98-06-6	2426	TERT-BUTYLBENZENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 127-18-4	2987	TETRACHLOROETHYLENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 108-88-3	2991	TOLUENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 156-60-5	2979	TRANS-1,2-DICHLOROETHYLENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 10061-02-6	2224	TRANS-1,3-DICHLOROPROPENE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 79-01-6	2984	TRICHLOROETHYLENE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 75-69-4	2218	TRICHLOROFLUOROMETHANE	RT	11/04/2002	08	B02110094-001-V502	< MDL 0 MG/L
OC 75-01-4	2976	VINYL CHLORIDE	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 108-38-3	2995	XYLENE, META	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 95-47-6	2997	XYLENE, ORTHO	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 106-42-3	2962	XYLENE, PARA	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L
OC 1330-20-7	2955	XYLENES	RT	11/04/2002	08	B02110094-001-V502	< MDL .0005 MG/L

Fac ID: DS001      Fac Name: DISTRIBUTION SYSTEM      Avl: P      Status: A      Src: GW  
Smp Pt ID: SP001      Status: A      Description:      Src Typ:

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
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Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Fac ID: DS001      Fac Name: DISTRIBUTION SYSTEM      Avl: P      Status: A      Src:  
Smp Pt ID: SP001      Status: A      Description:      Src Typ:

Analyte/CAS No	Code	Analyte Name	Type	Collection Dt	Lab	Sample Number	Result
IOC 7440-50-8	1022	COPPER	RT	05/19/2004	08	B04051191-001A	< MRL .01 MG/L
IOC 7439-92-1	1030	LEAD	RT	05/19/2004	08	B04051191-001A	< MRL .001 MG/L
IOC 7440-50-8	1022	COPPER	RT	05/19/2004	08	B04051191-002A	< MRL .01 MG/L
IOC 7439-92-1	1030	LEAD	RT	05/19/2004	08	B04051191-002A	< MRL .001 MG/L
IOC 7440-50-8	1022	COPPER	RT	05/19/2004	08	B04051191-003A	< MRL .01 MG/L
IOC 7439-92-1	1030	LEAD	RT	05/19/2004	08	B04051191-003A	< MRL .001 MG/L
IOC 7440-50-8	1022	COPPER	RT	05/19/2004	08	B04051191-004A	< MRL .01 MG/L
IOC 7439-92-1	1030	LEAD	RT	05/19/2004	08	B04051191-004A	< MRL .001 MG/L
IOC 7440-50-8	1022	COPPER	RT	05/19/2004	08	B04051191-005A	< MRL .01 MG/L
IOC 7439-92-1	1030	LEAD	RT	05/19/2004	08	B04051191-005A	< MRL .001 MG/L

**Violations & Enforcements** FROM 01/01/2000 TO 11/08/2005

Viol Date	Comp Beg	Comp End	Fed FY	Viol No	Type	Sev	Cate	Code	Name
09/26/2005	08/01/2005	08/31/2005	2005	3	24	MN	MON	3100	COLIFORM, TOTAL (TCR)
	2005	42	09/29/2005	SOX	ST COMPLIANCE ACHIEVED				
	2005	41	09/29/2005	SIE	ST PUBLIC NOTIF REQUESTED				
	2005	40	09/29/2005	SIA	ST VIOLATION/REMINDER NOTICE				
09/20/2005	01/01/2002	12/31/2010	2005	3	03	MJ	MON	ASBE	CDS ASBESTOS
	2006	43	10/17/2005	SOX	ST COMPLIANCE ACHIEVED				
	2005	36	09/27/2005	SIE	ST PUBLIC NOTIF REQUESTED				
	2005	35	09/27/2005	SIA	ST VIOLATION/REMINDER NOTICE				
08/24/2005	07/01/2005	07/31/2005	2005	3	25	MJ	MON	3100	COLIFORM, TOTAL (TCR)
	2005	39	08/27/2005	SOX	ST COMPLIANCE ACHIEVED				
	2005	38	08/27/2005	SIE	ST PUBLIC NOTIF REQUESTED				
	2005	37	08/27/2005	SIA	ST VIOLATION/REMINDER NOTICE				
02/16/2005	02/01/2005	02/28/2005	2005	2	22		MCL	3100	COLIFORM, TOTAL (TCR)
	2005	26	05/31/2005	SOX	ST COMPLIANCE ACHIEVED				
	2005	23	02/17/2005	SIE	ST PUBLIC NOTIF REQUESTED				
	2005	22	02/17/2005	SIA	ST VIOLATION/REMINDER NOTICE				
	2005	25	02/17/2005	MPH	PHONE CALL TO SYSTEM				
	2005	24	02/17/2005	MHA	HEALTH ADVISORY				
	2005	25	02/17/2005	EF<	FED CFP ISSUED				
12/28/2004	01/01/2004	12/31/2004	2005	3	52		MON	5000	LEAD & COPPER RULE
	2005	34	03/13/2005	SOX	ST COMPLIANCE ACHIEVED				
	2005	33	03/13/2005	SIF	ST PUBLIC NOTIF RECEIVED				
	2005	32	01/04/2005	SIE	ST PUBLIC NOTIF REQUESTED				
	2005	31	01/04/2005	SIA	ST VIOLATION/REMINDER NOTICE				
08/16/2004	01/01/2004	03/31/2004	2004	1	01		MCL	1025	FLUORIDE
	2004	29	08/23/2004	SOX	ST COMPLIANCE ACHIEVED				
	2005	30	07/07/2005	SOX	ST COMPLIANCE ACHIEVED				



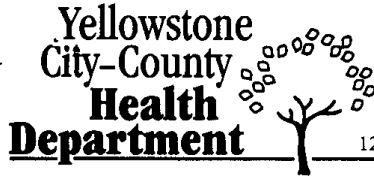
Public Water Supply System

PWSID: MT0004058 Name: MOUNTAIN VIEW COLONY

(continued)

Viol Date	Comp Beg	Comp End	Fed FY	Viol No	Type	Sev	Cate	Code	Name
	2004	28	08/23/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	27	08/23/2004	SIA					ST VIOLATION/REMINDER NOTICE
08/16/2004	01/01/2004	03/31/2004	2004	1	M1	MJ	MCL	1025	FLUORIDE
	2004	29	08/23/2004	SOX					ST COMPLIANCE ACHIEVED
	2005	30	07/07/2005	SOX					ST COMPLIANCE ACHIEVED
	2004	28	08/23/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	27	08/23/2004	SIA					ST VIOLATION/REMINDER NOTICE
05/05/2004	01/01/2003	12/31/2003	2003	3	03	MJ	MON	NITR	CDS NITRATE NITRITE
	2004	20	05/12/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	21	07/08/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	19	05/12/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	18	05/12/2004	SIA					ST VIOLATION/REMINDER NOTICE
04/21/2004	01/01/2003	03/31/2003	2003	3	03	MJ	MON	FLUO	CDS FLUORIDE
	2004	7	04/28/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	17	04/21/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	6	04/28/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	5	04/28/2004	SIA					ST VIOLATION/REMINDER NOTICE
04/21/2004	01/01/2003	12/31/2003	2003	3	03	MJ	MON	VOC1	CDS VOC
	2004	3	04/28/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	4	04/21/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	2	04/28/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	1	04/28/2004	SIA					ST VIOLATION/REMINDER NOTICE
04/21/2004	04/01/2003	06/30/2003	2003	3	03	MJ	MON	FLUO	CDS FLUORIDE
	2004	13	04/28/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	17	04/21/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	12	04/28/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	11	04/28/2004	SIA					ST VIOLATION/REMINDER NOTICE
04/21/2004	07/01/2003	09/30/2003	2003	3	03	MJ	MON	FLUO	CDS FLUORIDE
	2004	10	04/28/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	17	04/21/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	9	04/28/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	8	04/28/2004	SIA					ST VIOLATION/REMINDER NOTICE
04/21/2004	10/01/2003	12/31/2003	2004	3	03	MJ	MON	FLUO	CDS FLUORIDE
	2004	16	04/28/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	17	04/21/2004	SOX					ST COMPLIANCE ACHIEVED
	2004	15	04/28/2004	SIE					ST PUBLIC NOTIF REQUESTED
	2004	14	04/28/2004	SIA					ST VIOLATION/REMINDER NOTICE

APPENDIX C – Sanitary Survey



Phone: (406) 247-3200 • Fax: (406) 247-3202  
123 South 27th • P.O. Box 35033 • Billings, MT 59107

SDWIS  
9/19/03  
XB

August 12, 2003

Mountain View Colony  
RR 1 Box 39  
Broadview Mt. 59015

Re: Sanitary Survey PWS 4058

Dear Water System Owner:

On June 26, 2003 the Yellowstone City-County Health Department conducted a sanitary survey of your water system. Your cooperation was greatly appreciated. Sanitary surveys are required of public water system facilities at about 3-5 year intervals according to state and federal regulations. The Montana Department of Environmental Quality (MDEQ) provides the surveys as a service to the regulated systems. Yellowstone City-County Health Department is a contractor for the MDEQ.

Sanitary surveys are intended to discover potential sanitary defects (flaws in the system that could allow the entry of contaminants) and suggest corrective actions before the deficiencies cause public health problems. We also look for safety problems and provide advice when appropriate.

Generally speaking, the system appears to be acceptable.

Again, your cooperation is appreciated and if you have any questions please call the Yellowstone City-County Health Department at 256-2770.

Sincerely yours,

  
Karl Carlson

CC: MDEQ  
File

**RECEIVED**

SEP 11 2003

MONTANA  
DEPT. OF ENVIRONMENTAL QUALITY  
COMMUNITY SERVICES BUREAU

*Handwritten signature/initials*

SANITARY SURVEY FORM - INVENTORY		Page 1 of 9	1/11/2001
DATE OF SURVEY 6/26/03	COUNTY Yellowstone	SURVEYOR NAME -Karl Carlson/ Gary Bradshaw	
PWSID 4058	SYSTEM NAME Mountain View Colony		
(SYSTEM REPRESENTATIVE) Mike Wipf		(OTHER REPRESENTATIVE) Walter Wipf	
<b>SYSTEM ADDRESS</b> Addressee <u>Mountainview Colony</u> <small>Primary Address</small> Street <u>RR 1 Box 39</u> City <u>Broadview</u> State <u>MT</u> Zip <u>59015</u> System Phone ( ) Fax ( )		<b>SYSTEM OWNER</b> Addressee <u>same</u> <small>Owners Address</small> Street _____ City _____ State _____ Zip _____ Owner Phone ( ) Fax ( )	
<b>LOCATION OF SYSTEM</b> Nearest City <u>Broadview</u> Description or Physical Address <u>Mountainview Colony</u>			
<b>OPERATOR OF SYSTEM</b> Name <u>Walter Wipf</u> Certified Operator <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If, yes Certification # _____ Phone ( ) _____		<b>ALTERNATE OPERATOR OF SYSTEM</b> Name <u>Mike Wipf</u> Certified Operator <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If, yes Certification # _____ Phone # ( ) _____	
<b>SYSTEM STATUS</b> <input checked="" type="checkbox"/> A = Active <input type="checkbox"/> P = Pending (Add New System) <input type="checkbox"/> I = Inactive		<b>SYSTEM CLASS</b> <input checked="" type="checkbox"/> C = Community <input type="checkbox"/> NTNC = Non-Transient Non-Community <input type="checkbox"/> NC = Transient Non-Community	
Total Service Connections: Residential / Non-Transient: _____ Transient: _____ Total Active Connections: Residential / Non-Transient: _____ Transient: _____ Service Connections Metered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No % _____ <small>Metered</small>		Resident Population Summer: <u>80</u> Number of permanent residents utilizing PWS daily Winter: <u>80</u> Non-Transient Population Summer: _____ Number of non-transient persons utilizing PWS daily Winter: _____ Transient Population Summer: _____ Number of transient persons served by PWS daily Winter: _____	
<b>OWNER TYPE</b> <input type="checkbox"/> 1 Federal Government <input type="checkbox"/> 4 Local Government Authority, Commission, District, Municipality, City, etc. <input checked="" type="checkbox"/> 2 Private Subdivision, Investor, Trust, Cooperative, Water Association, etc. <input type="checkbox"/> 5 Mixed Public/Private <input type="checkbox"/> 3 State Government <input type="checkbox"/> 6 Native American Indian Tribes & Reservations			
<b>SERVICE AREA CHARACTERISTICS LIST</b> <input type="checkbox"/> DC Day Care Center <input type="checkbox"/> RS Restaurant <input type="checkbox"/> DI Dispenser <input type="checkbox"/> SC School <input type="checkbox"/> HA Homeowners Assoc. <input type="checkbox"/> SI Sanitary Improvement District <input type="checkbox"/> HM Hotel/Motel <input type="checkbox"/> SK Summer Camp <input type="checkbox"/> HR Highway Rest Area <input type="checkbox"/> SR Secondary Residences <input type="checkbox"/> IA Industrial/Agricultural <input type="checkbox"/> SS Service Station <input type="checkbox"/> IC Interstate Carrier <input type="checkbox"/> SU Subdivision <input checked="" type="checkbox"/> IN Institution <input type="checkbox"/> WB Water Bottler <input type="checkbox"/> MF Medical Facility <input type="checkbox"/> WH Wholesaler (Sells Water) <input type="checkbox"/> MH Mobile Home Park <input type="checkbox"/> MP Mobile Home Park, Principle Residence <input type="checkbox"/> MU Municipality <input type="checkbox"/> OA Other Area <input type="checkbox"/> ON Other Non-Transient Area <input type="checkbox"/> OR Other Residential Area <input type="checkbox"/> OT Other Transient Area <input type="checkbox"/> PA Recreation Areas <input type="checkbox"/> RA Residential Area <input type="checkbox"/> RE Retail Employees Service Category Description <u>Colony</u>		Comments: <u>Mountainview Colony has a current population of 80 people.</u>  <div style="text-align: center;"> <b>RECEIVED</b>                      SEP 11 2003                      MONTANA                      DEPT. OF ENVIRONMENTAL QUALITY                      COMMUNITY SERVICES BUREAU                 </div>	

**SANITARY SURVEY FORM - WATER SYSTEM FACILITIES** Page 2 of 9

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 2

**WATER SYSTEM FACILITIES SUMMARY (WSF)**

WSF ID	Facility Name	Water Type Code	Purchased	Seller PWSID
DS 001	Distribution System			
CH001	Common Header	GW	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
DS001	Distribution System	GW	<input type="checkbox"/> Yes <input type="checkbox"/> No	
WL002	Well 1	GW	<input type="checkbox"/> Yes <input type="checkbox"/> No	
WL003	Well 2	GW	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ST001	Storage Facility	GW	<input type="checkbox"/> Yes <input type="checkbox"/> No	
PC001	Pressure Control	GW	<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

Description of Water System Facility flow: Water from wells pumped to storage tanks inside facility then pumped through system with pressure tanks in use.

Example: Well 1(WL002) is pumped into pumphouse where chlorine is applied (TP001) and from there to the storage tank (ST001). The treated water flows by gravity to the Distribution System (DS001)

**EMERGENCY POWER**

Does the system have emergency power?  Yes  No

If yes, what type: \_\_\_\_\_

Frequency of testing: \_\_\_\_\_

Record of primary power failures: \_\_\_\_\_ in last year

Switchover:  Automatic  Manual

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

SANITARY SURVEY FORM – WELLS & PUMPS Page <u>3</u> of <u>9</u>	
(Please copy this sheet for additional wells & pumps)	
COMPLETE ONE SECTION FOR EACH SOURCE	STATUS OF SOURCE <input checked="" type="checkbox"/> (A)ctive <input type="checkbox"/> (I)nactive <input type="checkbox"/> (P)roposed
<p>WSF ID <u>WL002</u>      <i>Entry Point ID</i> <u>502</u> <small>These are state assigned identification numbers</small></p> <p>Source Name <u>Well 1</u> <small>Name of Source – Example: Well 1 or South well, etc.</small></p> <p>Location of Water Source (TRS or street address) <u>T4nR24eS27</u></p> <p><i>Entry Point Name</i> <u>Comman Header</u> <small>Name of EP – Example: Entry point for North Well 1 &amp; South Well 2</small></p> <p><i>Location of Entry Point</i> <u>building</u></p> <p>Available <input checked="" type="checkbox"/> Perm <input type="checkbox"/> Emerg <input type="checkbox"/> Interim <input type="checkbox"/> Seasonal <input type="checkbox"/> Other <small>If seasonal: _____ to _____</small></p> <p>GWUDISW PA Completed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Log Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Average Production <u>30gpm</u> <small>indicate units</small></p> <p>Maximum Production _____ <small>indicate units</small></p> <p>Date Drilled <u>9/17/00</u> <small>If well . . . date drilled</small></p> <p>Casing Size <u>6"</u> <small>size of casing installed in well</small></p> <p>Case Depth <u>35.1'</u> <small>depth of casing installed in well</small></p> <p>Well Depth <u>45.1'</u> <small>depth of well expressed in feet</small></p> <p>Grout Depth <u>34'</u> <small>depth of grout used to seal well walls</small></p> <p>Log SWL <u>22.9</u> <small>(static) expressed in feet below ground elevation</small></p> <p>Log PWL <u>unknown</u> <small>(pumping) expressed in feet below ground elevation</small></p> <p>Pump Capacity <u>unknown</u> <small>capacity of pump installed expressed in gallons per min</small></p> <p>Intake Type <u>perforated</u> <small>type of intake mechanism</small></p> <p>Screened Interval <u>35-41</u> <small>expressed in feet below ground elevation</small></p> <p>Well Yield <u>30gpm</u> <small>pump tested in gallons per minute</small></p> <p>Latitude <u>46.0655</u> <small>latitude of source</small></p> <p>Longitude <u>108.7237</u> <small>longitude of source</small></p>
WELLS – COMPLETE ONE SECTION FOR EACH SOURCE	PUMPS – COMPLETE ONE SECTION FOR EACH SOURCE
<p>WSF ID <u>WL002</u> <small>Example: WL002</small></p> <p>Is well site subject to flooding? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is well located in proximity of a potential source of pollution (includes surface water, known chemical spills, agricultural use, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes . . . explain <u>Dryland Agricultural</u></p> <p>Does casing extend at least <input checked="" type="checkbox"/> 18 inches above outside ground level; <input type="checkbox"/> 12 inches above finished floor inside well house; and <input type="checkbox"/> 3 feet above 100 year flood elevation? (Check for appropriate distance) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is top of the well casing properly sealed? (sanitary seal) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is well vent properly screened and terminated in a downward position? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does well have suitable sampling tap? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are check valves, blow-off valves and water meters maintained and operating properly? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is upper termination of well protected (housed or fenced)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is intake located below the maximum drawdown? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>WSF ID <u>WL002</u></p> <p>Type <u>submersible</u> <small>(example: 30 hp line shaft turbine)</small></p> <p>Rated Capacity <u>unknown</u></p> <p>Are pumps operable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How frequently has pumps(s) been replaced? <u>new</u></p> <p>Are backup pumps/motors provided? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are controls functioning properly and adequately protected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Do underground compartments have a drain? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is facility properly protected against trespassing and vandalism? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the plumbing adequately painted to prevent excessive corrosion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is adequate heating, lighting, and ventilation provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is a preventive maintenance program in operation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are recommended spare parts on hand? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Comments: (Such as, detailed information on any items with identified deficiencies)</p> <p>_____</p>	<p>Comments: (Such as, detailed information on any items with identified deficiencies)</p> <p>_____</p>

<b>SANITARY SURVEY FORM – WELLS &amp; PUMPS</b> Page <u>4</u> of <u>9</u>		
<i>(Please copy this sheet for additional wells &amp; pumps)</i>		
<b>COMPLETE ONE SECTION FOR EACH SOURCE</b>		<b>STATUS OF SOURCE</b> <input checked="" type="checkbox"/> (A)Active <input type="checkbox"/> (I)Inactive <input type="checkbox"/> (P)Proposed
<p>WSF ID <u>WL003</u> <span style="float: right;">Entry Point ID <u>502</u></span> <small>These are state assigned identification numbers</small></p> <p>Source Name <u>well 2</u> <small>Name of Source – Example: Well 1 or South well, etc.</small></p> <p>Location of Water Source (TRS or street address) <u>T4nR24eS27</u></p> <p>Entry Point Name <u>common header</u> <small>Name of EP – Example: Entry point for North Well 1 &amp; South Well 2</small></p> <p>Location of Entry Point <u>building</u></p> <p>Available <input checked="" type="checkbox"/> Perm <input type="checkbox"/> Emerg <input type="checkbox"/> Interim <input type="checkbox"/> Seasonal <input type="checkbox"/> Other <small>If seasonal: _____ to _____</small></p> <p>GWUDISW PA Completed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Log Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Average Production <u>15gpm</u> <small>Indicate units</small></p> <p>Maximum Production _____ <small>Indicate units</small></p> <p>Date Drilled <u>9/17/03</u> <small>If well... date drilled</small></p> <p>Casing Size <u>6</u> <small>size of casing installed in well</small></p> <p>Case Depth <u>20</u> <small>depth of casing installed in well</small></p> <p>Well Depth <u>25.2</u> <small>depth of well expressed in feet</small></p> <p>Grout Depth <u>19</u> <small>depth of grout used to seal well walls</small></p>	<p>Log SWL <u>18.5</u> <small>(static) expressed in feet below ground elevation</small></p> <p>Log PWL <u>unknown</u> <small>(pumping) expressed in feet below ground elevation</small></p> <p>Pump Capacity <u>unknown</u> <small>capacity of pump installed expressed in gallons per min</small></p> <p>Intake Type <u>perforated</u> <small>type of intake mechanism</small></p> <p>Screened Interval <u>20-25</u> <small>expressed in feet below ground elevation</small></p> <p>Well Yield <u>15gpm</u> <small>pump tested in gallons per minute</small></p> <p>Latitude <u>46.0655</u> <small>latitude of source</small></p> <p>Longitude <u>108.7237</u> <small>longitude of source</small></p>
<b>WELLS – COMPLETE ONE SECTION FOR EACH SOURCE</b>	<b>PUMPS – COMPLETE ONE SECTION FOR EACH SOURCE</b>	
<p>WSF ID <u>WL003</u> <small>Example: WL002</small></p> <p>Is well site subject to flooding? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is well located in proximity of a potential source of Pollution (includes surface water, known chemical spills, agricultural use, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes... explain <u>Dryland Agriculture</u></p> <p>Does casing extend at least <input checked="" type="checkbox"/> 18 inches above outside Ground level; <input type="checkbox"/> 12 inches above finished floor inside well house; and <input type="checkbox"/> 3 feet above 100 year flood elevation? (Check for appropriate distance) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is top of the well casing properly sealed? (sanitary seal) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is well vent properly screened and terminated in a downward position? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does well have suitable sampling tap? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are check valves, blow-off valves and water meters maintained and operating properly? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is upper termination of well protected (housed or fenced)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is intake located below the maximum drawdown? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>WSF ID <u>WL003</u></p> <p>Type <u>submersible</u> <small>(example: 30 hp line shaft turbine)</small></p> <p>Rated Capacity <u>unknown</u></p> <p>Are pumps operable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How frequently has pumps(s) been replaced? <u>new</u></p> <p>Are backup pumps/motors provided? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are controls functioning properly and adequately protected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Do underground compartments have a drain? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is facility properly protected against trespassing and vandalism? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are pump records maintained (amp, drawdown, discharge, pressure, maintenance schedule, manuals, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the plumbing adequately painted to prevent excessive corrosion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is adequate heating, lighting, and ventilation provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is a preventive maintenance program in operation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are recommended spare parts on hand? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>Comments: (Such as, detailed information on any items with identified deficiencies)</p> <p>_____</p>	<p>Comments: (Such as, detailed information on any items with identified deficiencies)</p> <p>_____</p>	

**SANITARY SURVEY FORM - TREATMENT** Page 5 of 9

<p><b>Treatment Objective</b></p> <p><b>B</b> = Disinfection By - Product Control  <b>C</b> = Corrosion Control  <b>D</b> = Disinfection  <b>E</b> = Dechlorination  <b>F</b> = Iron Removal  <b>I</b> = Inorganics Removal  <b>M</b> = Manganese Removal  <b>N</b> = No Treatment at Source  <b>O</b> = Organics Removal  <b>P</b> = Particulate Removal  <b>R</b> = Radionuclides Removal  <b>S</b> = Softening (Hardness Removal)  <b>T</b> = Taste / Odor Control  <b>Z</b> = Other _____</p> <p><b>Treatment Codes</b></p> <p>(See separate sheet of Treatment Codes)</p> <p style="text-align: right;">Example 6</p>	<p><b>WATER TREATMENT FACILITIES</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">WSF ID</th> <th style="text-align: left;">Treatment Plant Name</th> <th colspan="3" style="text-align: left;">Treatment Objective and Code</th> </tr> </thead> <tbody> <tr> <td>TP 001</td> <td>Chlorination for Well 1</td> <td>D421</td> <td></td> <td></td> </tr> <tr> <td>TP 002</td> <td>Filtration and Disinfection for Spring</td> <td>D341</td> <td>D720</td> <td>D421</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	WSF ID	Treatment Plant Name	Treatment Objective and Code			TP 001	Chlorination for Well 1	D421			TP 002	Filtration and Disinfection for Spring	D341	D720	D421																																								
WSF ID	Treatment Plant Name	Treatment Objective and Code																																																						
TP 001	Chlorination for Well 1	D421																																																						
TP 002	Filtration and Disinfection for Spring	D341	D720	D421																																																				

Treatment Description / Comments: No Treatment

<p style="text-align: center;"><b>FOR SYSTEMS EMPLOYING FULL-TIME DISINFECTION</b></p> <p>What disinfectant is used? _____</p> <p>Do you record the amount of disinfectant used? <input type="checkbox"/> Yes <input type="checkbox"/> No      If yes, amount used: _____ lbs/day _____ ppm _____ other (give units)</p> <p>Do you compare disinfectant use with water pumped to verify concentration? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is chemical storage adequate and safe? <input type="checkbox"/> Yes <input type="checkbox"/> No      If no, explain _____</p> <p>Is disinfectant residual being monitored daily? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are residual reports submitted to the State monthly? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the disinfection equipment being operated and maintained properly? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is operational standby equipment provided? <input type="checkbox"/> Yes <input type="checkbox"/> No      If not, are critical spare parts on hand? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Have there been any interruptions in disinfection during the past year due to disinfection system failure? <input type="checkbox"/> Yes <input type="checkbox"/> No      Dates _____</p> <p>Describe provisions for providing contact time between disinfection point and the first point of use. _____</p>	<p style="text-align: center;"><b>IF USING GAS CHLORINATION</b></p> <p>Is a manifold provided to allow feeding gas from more than one cylinder? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there automatic switchover from cylinder to cylinder? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are scales provided for weighing of containers? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are chlorine storage and use areas isolated from other work areas? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are caps on stored cylinders? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is room vented to the outdoors by exhaust grills located no more than 6 inches above the floor level? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is vent inlet near the ceiling? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is room containing chlorination treatment labeled sufficiently (DANGER signs, etc.)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is a view port provided into the room storing chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is a means of leak detection provided? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is a self-contained breathing apparatus available for use during repair of leaks? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are personnel trained to use apparatus? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are all doors hinged outward and equipped with panic bars? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are all gas cylinders restrained near the top and about half way down by chaining to wall or by other means? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Comments: _____</p>
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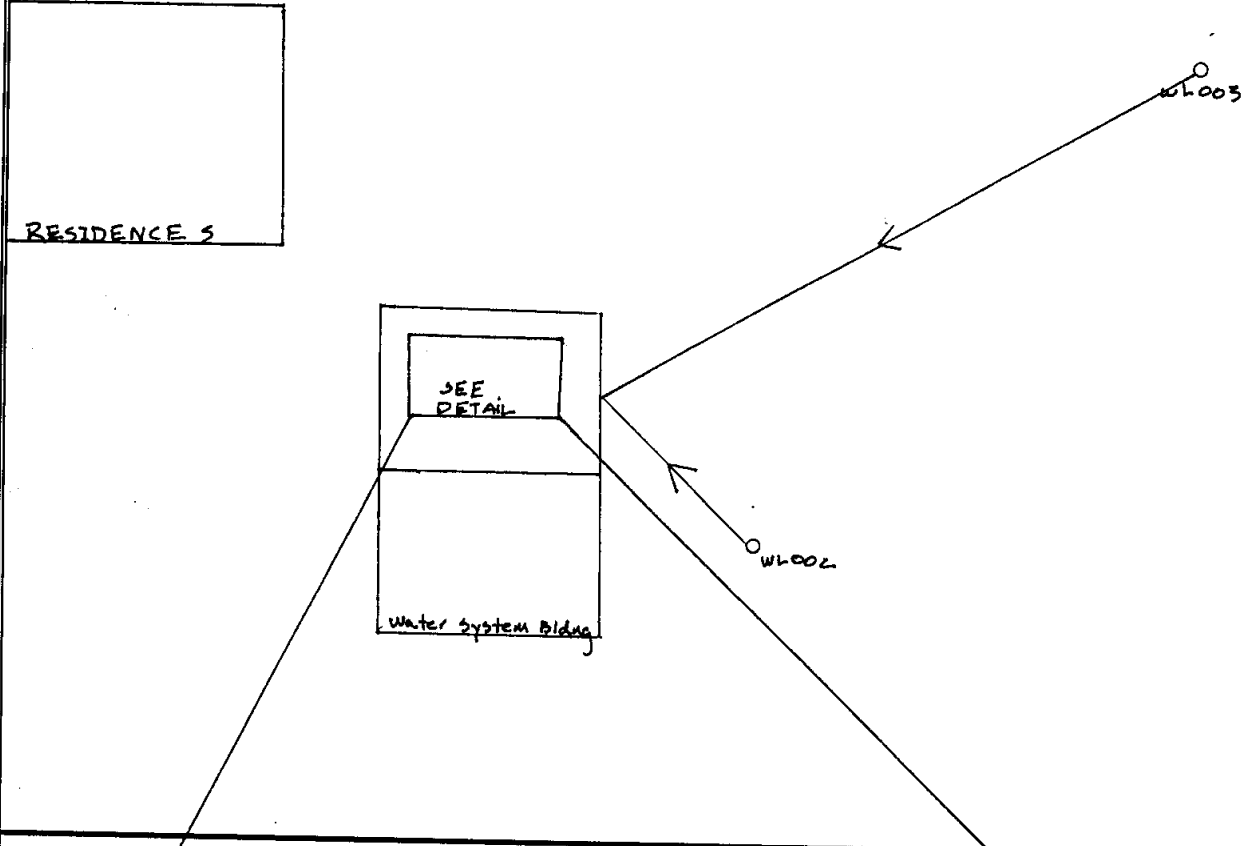
SANITARY SURVEY FORM - PRESSURE CONTROL ASSEMBLIES <span style="float: right;">Page <u>6</u> of <u>9</u></span>	
COMPLETE ONE SECTION FOR EACH PRESSURE CONTROL ASSEMBLY	
CAPTIVE AIR TANK(S)	PRESSURE TANK(S)
<p>WSF ID <u>PC001</u> Location, Description <u>building</u></p> <p>Is there a pressure relief valve? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is there an operable pressure gauge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does low pressure level provide adequate pressure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are there water-logged tanks? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is the exterior surface of the tanks in good physical condition? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank(s) be by-passed for repair? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump run time _____</p> <p>Time of Day _____ Cut-In <u>unknown</u> psi</p> <p style="text-align: right;">Cut-Out <u>unknown</u> psi</p> <p>Pump Type: <u>centrifugal out of storage</u></p> <p>Comments: <u>Agua Var Control System</u></p>	<p>WSF ID _____ Location, Description _____</p> <p>Is there an operable pressure gauge? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does low pressure level provide adequate pressure? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump recharge rate _____ Cut-In _____ psi</p> <p>Time of day _____ Cut-Out _____ psi</p> <p>Is the tank water logged? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is air charge system adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the exterior surface of the pressure tank in good physical condition? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a water level sight glass? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a bottom drain valve? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a pressure relief valve? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank(s) be by-passed for repair? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump type: _____</p> <p>Comments: _____</p>
CAPTIVE AIR TANK(S)	PRESSURE TANK(S)
<p>WSF ID _____ Location, Description _____</p> <p>Is there a pressure relief valve? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there an operable pressure gauge? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does low pressure level provide adequate pressure? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are there water-logged tanks? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the exterior surface of the tanks in good physical condition? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank(s) be by-passed for repair? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump run time _____</p> <p>Time of Day _____ Cut-In _____ psi</p> <p style="text-align: right;">Cut-Out _____ psi</p> <p>Pump Type: _____</p> <p>Comments: _____</p>	<p>WSF ID _____ Location, Description _____</p> <p>Is there an operable pressure gauge? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does low pressure level provide adequate pressure? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump recharge rate _____ Cut-In _____ psi</p> <p>Time of day _____ Cut-Out _____ psi</p> <p>Is the tank water logged? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is air charge system adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the exterior surface of the pressure tank in good physical condition? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a water level sight glass? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a bottom drain valve? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is there a pressure relief valve? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank(s) be by-passed for repair? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump type: _____ Comments: _____</p>

<b>SANITARY SURVEY FORM - STORAGE</b> Page <u>7</u> of <u>9</u>	
<b>COMPLETE ONE SECTION FOR EACH STORAGE FACILITY</b>	
<p>How much treated storage is provided? <u>10000</u> <small>gallons</small></p> <p>Total number of days of supply? <u>2</u> <small>days</small></p> <p style="text-align: center;"><b>STORAGE FACILITY</b></p> <p>WSF ID <u>ST001</u> Location, Description <u>(2) 5000gallon inside building</u> Storage Volume? <u>10000</u> <small>gallons</small></p> <p>Does surface runoff and underground drainage drain away? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the site protected against flooding? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank inspected every 5 years by a structural engineer for structural integrity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>_____ <small>Date of last inspection</small>                      <small>By whom</small></p> <p>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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is access hatch sealed properly and locked? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is site adequately protected against vandalism? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are surface coatings in contact with water ANSI / NSF approved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank protected against icing and corrosion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank be isolated from system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is all treated water storage covered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>What is cleaning frequency for tanks? <u>unknown</u></p> <p>Are tanks disinfected after repairs are made? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p> </p> <p>Comments: <u>Tanks are plastic and interconnected by piping arrangement</u> (Include safety concerns of ladders, handrails, etc.)</p>	<p style="text-align: center;"><b>STORAGE FACILITY</b></p> <p>WSF ID _____ Location, Description _____</p> <p>Storage Volume? _____ <small>gallons</small></p> <p>Does surface runoff and underground drainage drain away? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the site protected against flooding? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank inspected every 5 years by a structural engineer for structural integrity? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____ <small>Date of last inspection</small>                      <small>By whom</small></p> <p>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? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is access hatch sealed properly and locked? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is site adequately protected against vandalism? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are surface coatings in contact with water approved? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank protected against icing and corrosion? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank be isolated from system? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is all treated water storage covered? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>What is cleaning frequency for tanks? _____</p> <p>Are tanks disinfected after repairs are made? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: center;"><b>STORAGE FACILITY</b></p> <p>WSF ID _____ Location, Description _____</p> <p>Storage Volume? _____ <small>gallons</small></p> <p>Does surface runoff and underground drainage drain away? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the site protected against flooding? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank inspected every 5 years by a structural engineer for structural integrity? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____ <small>Date of last inspection</small>                      <small>By whom</small></p> <p>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? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is access hatch sealed properly and locked? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is site adequately protected against vandalism? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are surface coatings in contact with water approved? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is tank protected against icing and corrosion? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Can tank be isolated from system? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is all treated water storage covered? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>What is cleaning frequency for tanks? _____</p> <p>Are tanks disinfected after repairs are made? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

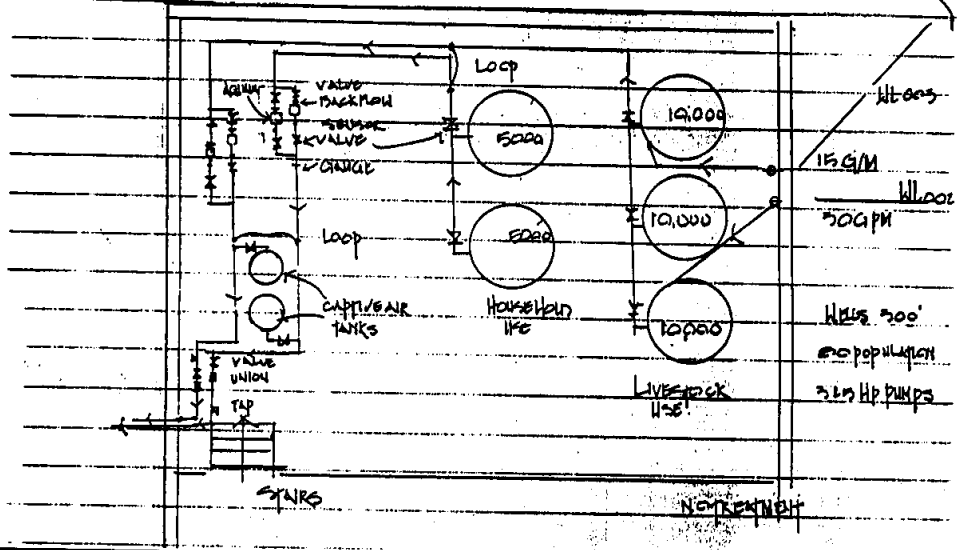
<b>SANITARY SURVEY FORM - MISCELLANEOUS</b> Page <u>8</u> of <u>9</u>	
<p style="text-align: center;"><b>DISTRIBUTION SYSTEM EVALUATION</b></p> <p>System description <u>Galvanized and PVC</u></p> <p>System drawings available? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Lines adequately sized? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Adequate pressure maintained? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Mains subject to freezing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Distribution system leaks? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Cross-connections noted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Comments: <u>Possibility of interconnection with livestock use water</u></p>	<p style="text-align: center;"><b>SAFETY</b></p> <p>Note any safety deficiencies (consider items such as ladders, tank supports, guards on rotating electrical equipment, lightning protection for pumps, etc.) _____</p>
<p style="text-align: center;"><b>MONITORING EVALUATION</b></p> <p>Bacti monitoring satisfactory? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Familiar with repeat sampling? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Chemical monitoring satisfactory? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Monitoring records maintained? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Bacti Sample Site Plan submitted to state? <small>(Community Systems Only)</small> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Did Surveyor take a bacteriological sample? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes, Date of Sample: _____ Time of Sample: _____ Sample Result: _____ Comments: _____</p>	<p style="text-align: center;"><b>MANAGEMENT</b></p> <p>Are personnel adequately trained? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are operators properly certified? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are there sufficient personnel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is an emergency plan available and workable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Are abandoned wells present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Do abandoned wells appear to be properly abandoned? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is operator aware of rules regarding well abandonment? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Does the system have a current DEQ Monitoring Schedule? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Comments: <u>Operators may be in process of certification</u></p>

**SANITARY SURVEY FORM - DIAGRAMS**

Draw brief site plan showing location of well(s), springs(s), water storage, distribution system, pumphouse(s), entry point(s), treatment, etc. and label with appropriate facility designation. (See example on instruction sheet)



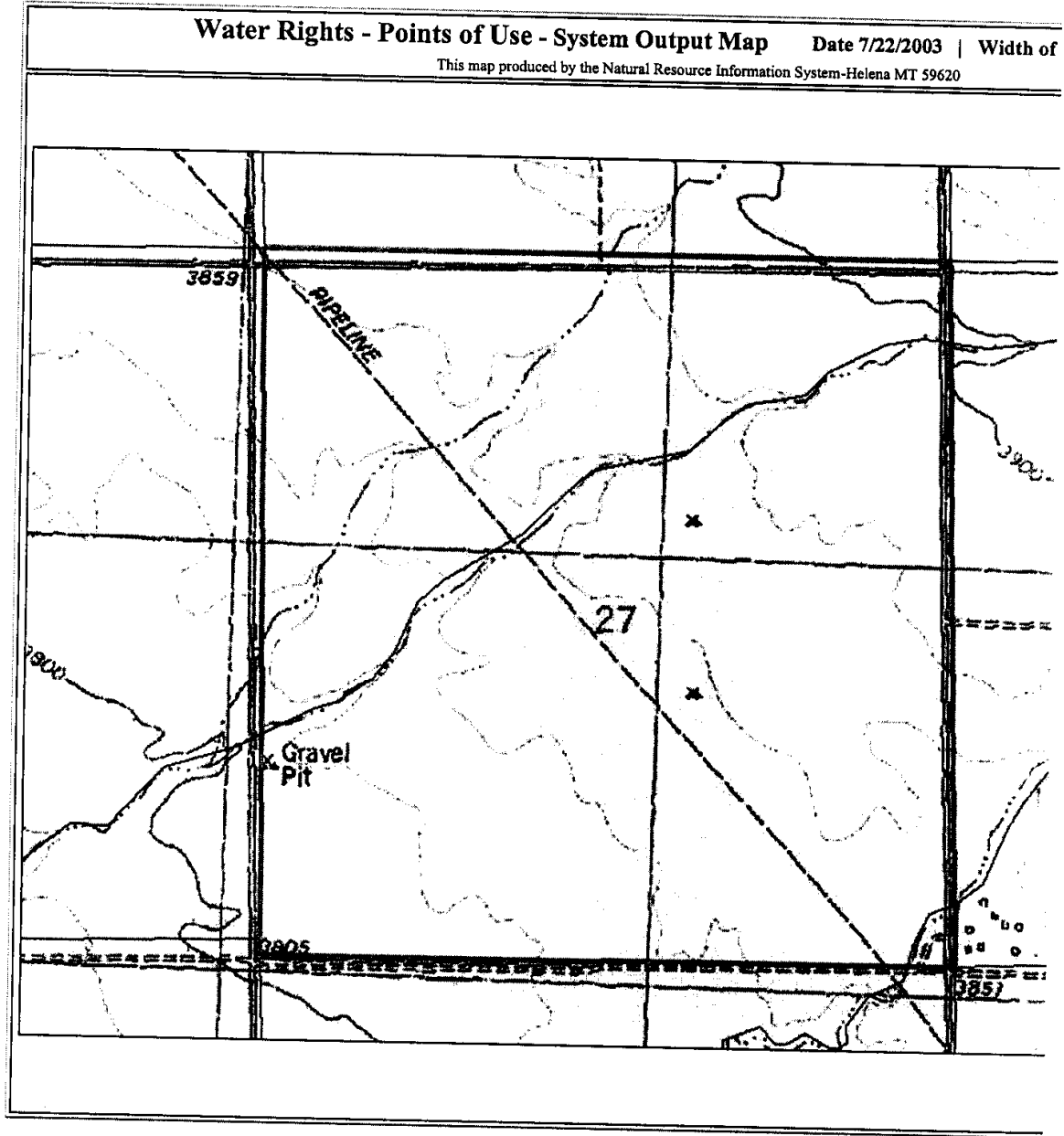
Draw brief schematic of pumphouse facilities (pressure control assemblies, treatment(s) valves, filters, meters, electrical controls, etc.)







[Click here to close window and return to interactive map.](#)



APPENDIX D - Concurrence Letter & Other Correspondence