

13. Point Source Dischargers

13.1. Overview

The Teller County portion of the watershed has two municipal dischargers and one industrial discharger shown in Tables 13.2 and 13.3 and Figure 12.3.

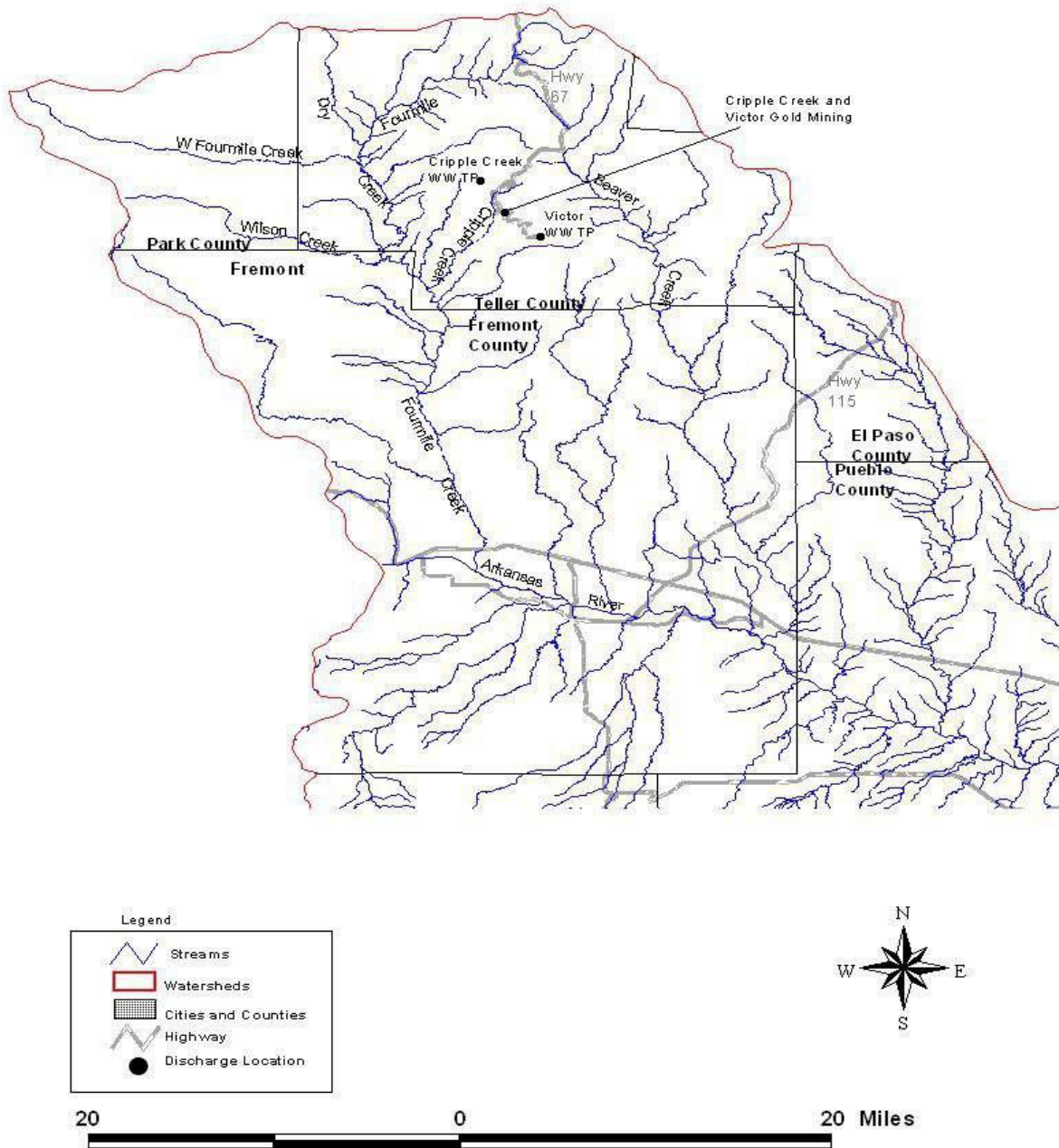
13.2. Upper Arkansas Watershed Municipal Discharge Facilities

Discharge	Permit No.	Discharge Location	Design Capacity (MGD)	Existing Load (MGD)	Expiration Date
City of Cripple Creek	CO-0039900	Cripple Creek, southern edge of town	1.0	0.41	7/31/2019
City of Victor	CO-0024201	Intermittent trib. of Wilson Creek at southern edge of Victor	0.087	0.049	11/24/2024

13.3. Upper Arkansas Watershed Industrial Discharge Facilities

Discharge	Permit No.	Discharge Location	Design Capacity (MGD)	Expiration Date
Cripple Creek and Victor Gold Mining	CO-0043648	Arequa Gulch	2.10	4/30/2022

13.4. Upper Arkansas Watershed Point Source Discharge Locations



13.5. Future Needs Assessment

13.5.1. Cities of Cripple Creek and Victor

The City of Cripple Creek has made improvements to their water main systems including a water main replacement on Bennett Avenue in 2019 and on Bison Avenue in 2014. The City sees a need for making improvements to their system regarding storage, lake dredging, and overall needed system improvements. These improvements include older water system lines and water system mains need to be upgraded to maintain operations at an adequate capacity along with needs to increase storage capacity. There is also a need to have a lake dredged for sediment due to many years of silt run off and build up in the lake serving the water district.

Growth in the City of Victor is expected to be minimal, and no new construction is expected to be necessary. Future needs include a new UV Disinfection System; two aluminum covers for the biosolids; and headworks screen. The wastewater treatment plant will consist of two aeration basins constructed in the former lagoons, referred to as cell no. 2 and cell no. 3. These aeration basins, no. 1 and no. 2, are equipped with submerged fine-bubble-diffused air operating in an extended aeration type of process. The design and operation of the activated sludge system is to accomplish a significant degree of nitrification in order to meet very stringent ammonia effluent limits for the plant. The city plans to cooperate with the Pikes Peak Mining Company for beneficial use of the biosolids in reclamation of disturbed areas in the mining district.

13.5.2. Cripple Creek and Victor Gold Mining Company

The mine life extension was approved in 2008 and includes extending the mining areas to the north and east to increase the mine life an additional four years. In 2015, the mine was purchased from Newmont Mining Company, along with the land privately owned. The mine is zoned by Teller County for mining activities, and within the current permit boundaries established by State of Colorado and Teller County permits. Information regarding the mine can be found at <https://www.newmontgoldcorp.com/>

13.6. Industrial

The only industrial discharge facility in the Teller County portion of the watershed is the Cripple Creek and Victor Gold Mining Company (CC&V).

13.6.1. The Cripple Creek and Victor Gold Mining Company

Background

The Cresson Project water quality is regulated by two separate agencies.

- Groundwater is regulated by the Division of Reclamation, Mining, and Safety (DRMS), with permits filed for each of the monitoring systems (groundwater wells) with the State Engineer's Office.
- Surface Water and Stormwater are regulated by the Water Quality Control Division (WQCD).

Required groundwater monitoring and specific parameters to be monitored are approved by the DRMS, and groundwater monitoring results are reported to the DRMS on a quarterly basis. Inspection of that program is completed by the DRMS.

In addition, there are four active WQCD permits as part of the Cresson Project: Permit CO-0024562 (Carlton Tunnel), Permit CO-0043648 (Arequa Gulch), Permit CO-0046540 (Fourmile Creek Springs), and Permit COR-040000 (stormwater discharges are controlled through the general permit). Monitoring and specific parameters to be monitored as part of the Cresson Project are approved by the WQCD.

Currently, monitoring results for CO-0024562, CO-0043648, and CO-0046540 are reported to the WQCD on a monthly basis. Inspection of those permits is completed by the WQCD on an annual basis. There two required annual inspections of the facilities by CC&V and an annual inspection completed by a third-party consultant. All these results are included in the annual report submitted to the WQCD. DRMS also includes an inspection of the stormwater features within the active mine area when at the site and at least once a year reviews of the stormwater control features external to the active mine area, with results included within the inspection reports completed by DRMS.

The Cripple Creek and Victor (CC&V) Gold Mine, Colorado's largest gold mine, discharges (CO-0043648) to Arequa Gulch, tributary to Cripple Creek (Upper Arkansas River Segment 2a). In addition to the discharge points included in permit CO-0043648, there are several other types of discharges and permits associated with the Cripple Creek and Victor Gold Mining operation. Most of the historic mines are not located within what is not CC&V's permit boundary area.

Several historic drainage tunnels traverse the pit area at depths of 1,000 to 3,000 feet below

the ground surface. Discharge from the Carlton tunnel is addressed through the Carlton Tunnel permit. The Roosevelt Tunnel is not owned by CC&V, and discharge from the Roosevelt Tunnel is regulated separately by CDPHE-WQCD. Other historic drainage tunnels in the mining district are located at elevations higher than these two tunnels and are generally dry.

13.7. Municipal

There are two municipal discharge facilities located within the Upper Arkansas Watershed portion of Teller County: Cripple Creek and Victor.

13.7.1. City of Cripple Creek

The City of Cripple Creek WWTP has a rated capacity of 1.0 mgd and is currently loading at approximately 0.4 mgd. The maximum hydraulic capacity is 1.35 mgd with further potential to upgrade to 1.75 mgd. The facility discharges to Cripple Creek (Upper Arkansas River Segment 21). The expansion and upgrading to the city's wastewater treatment plant was required due to changes in the economic development of the community. Since the legalization of limited stakes gambling within the corporate limits of Cripple Creek, a significant amount of commercial development has occurred.

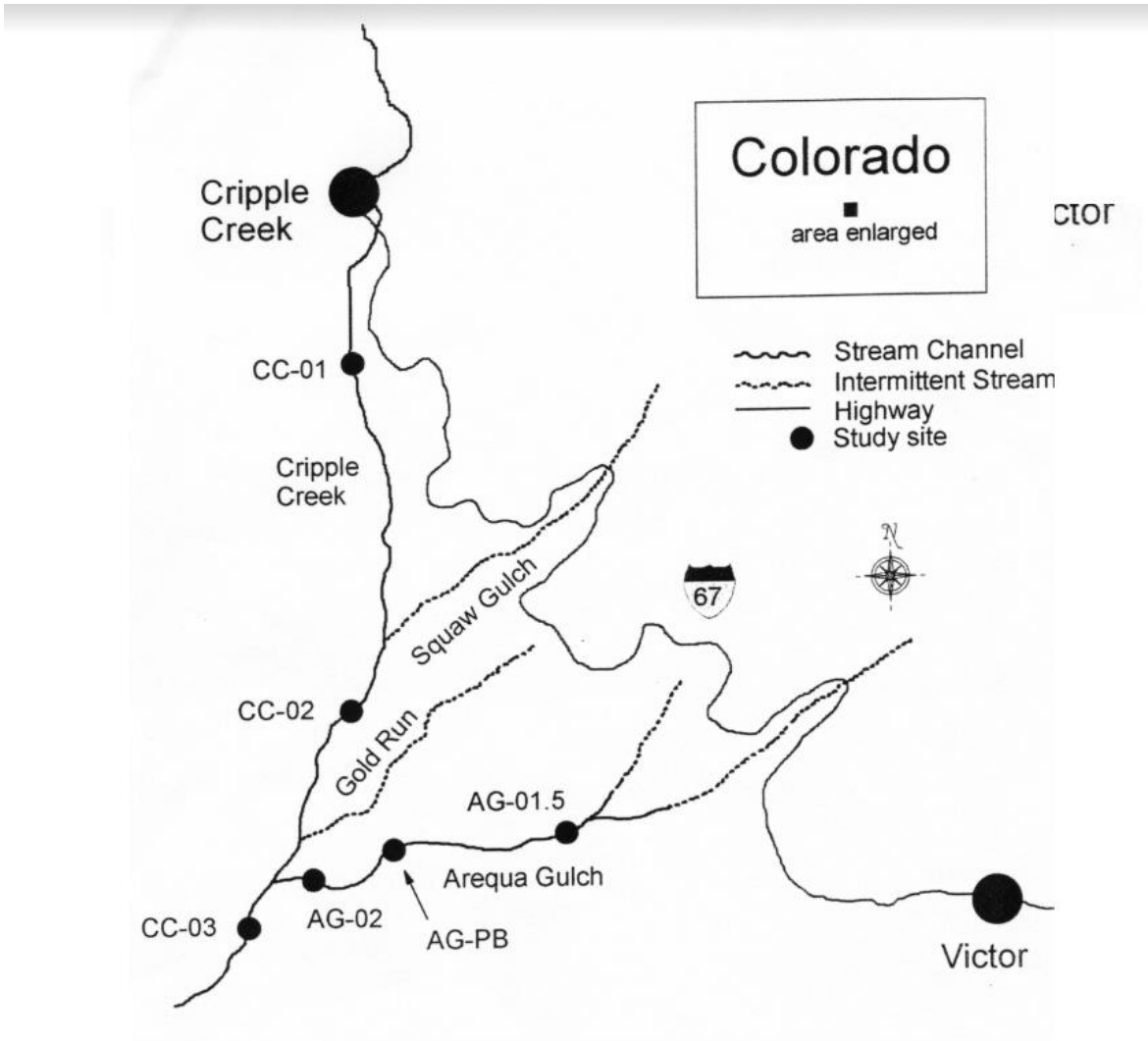
13.7.2. City of Victor

The City of Victor's WWTP was designed for a maximum average daily flow of 0.087 mgd. The plant's efficiency is expected to be 91% for BOD and TSS removal. The flow first travels through a comminutor that grinds rags into small pieces. It then travels through a grit chamber that removes 95% of the grit larger than 59 mesh and 85% of the grit larger than 70 mesh. Sludge then enters the extended aeration basin where it is mixed with return-activated sludge to stabilize the BOD. From there it flows to the secondary or final clarifier, with a surface area of 380 square feet. Return sludge is handled with one of two screw pumps that run continuously, and waste-activated sludge is drawn from the RAS pipeline with a positive displacement diaphragm pump controlled by a timer set by the operator. The clarifier effluent flows through an ultraviolet radiation tank for disinfection and discharge to an intermittent tributary of Wilson Creek (Upper Arkansas River Segment 23).

13.8. Major Point Source Service Area Maps

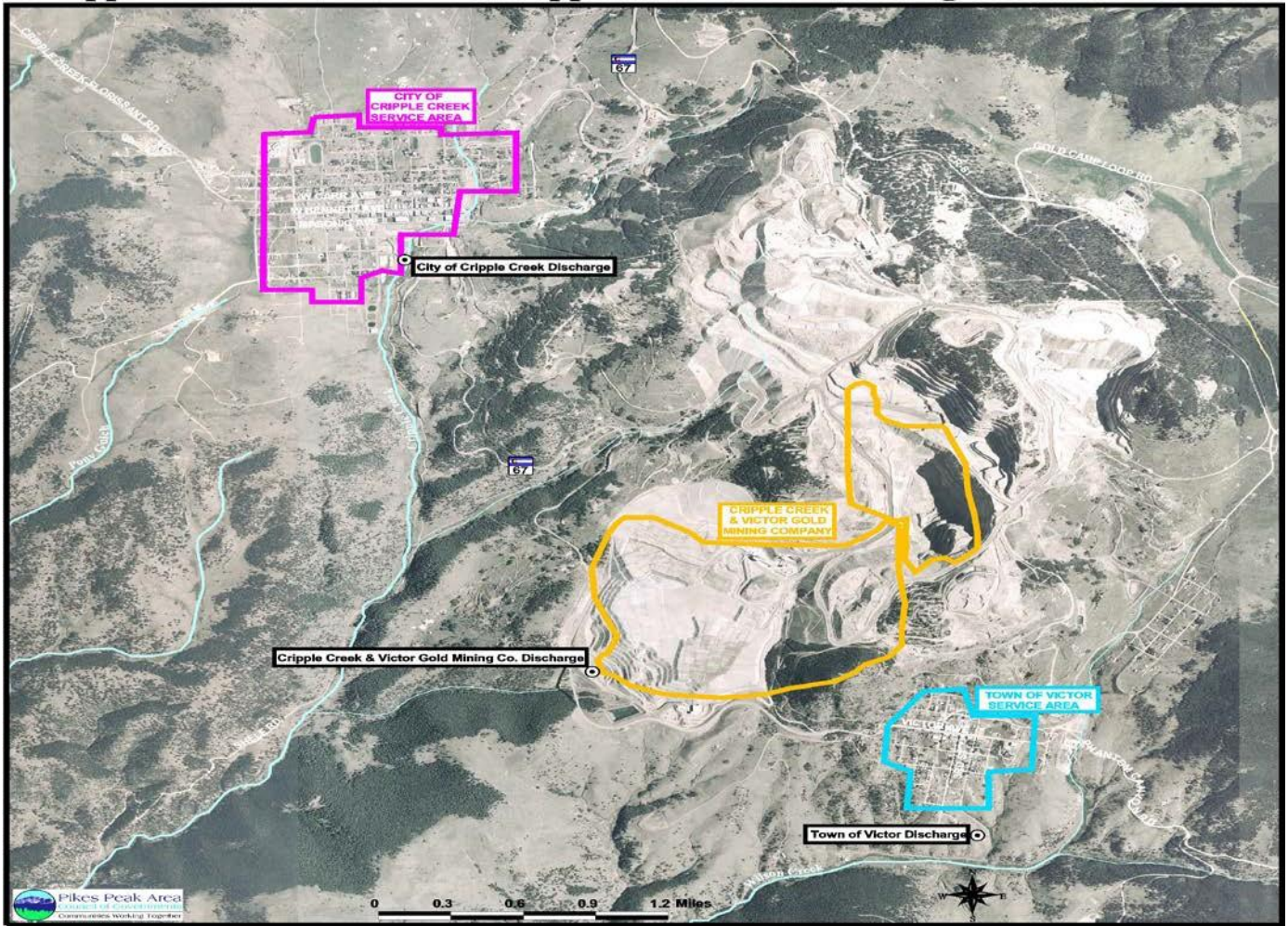
Service area maps show projected service area boundaries for each facility previously described. The background of these maps is Google Earth satellite imagery, which was last updated in 2005. Major point source discharge locations are shown on the service area maps.

13.9. Cripple Creek and Victor Gold Mining Monitoring Stations



13.10. Cripple Creek and Victor Service Area and Cripple Creek and Victor Mining Company

Cripple Creek, Victor, & the Cripple Creek/Victor Mining Co. Service Areas



13.11. Resource Extraction

The primary resource extraction area within this watershed is the Cripple Creek and Victor Gold Mining operation. Current operations focus on the Cresson Mine, an active mine that produces gold from the Cresson deposit and is located within the heart of the Cripple Creek Mining District. By 1990, CC&V discovered a reserve of over 81 metric tons of gold contained within the Cresson deposit. In 2002, CC&V completed an expansion of the Cresson Mine that included expansion of the size and depth and two additional surface mines. Other main features of this project are the zero-discharge Valley Leach Facility (VLF) (constructed in the Arequa Gulch drainage), the Minerals Beneficiation Facility and Process Buildings, the Arequa Gulch Overburden Storage Area (constructed upstream of the VLF), and the Squaw Gulch Overburden Storage Area (located at the headwaters of Squaw Gulch).

The Division of Reclamation, Mining and Safety is responsible for the protection of groundwater within the mine site area and, in cooperation with the permittee, has developed a groundwater monitoring program intended to control any groundwater contamination that might result from this operation.

CC&V reclaims and revegetates areas as soon as mining activities are completed. Reclamation is conducted concurrently with mining rather than leaving all reclamation until the end of the mine life. To date, reclamation efforts have focused on the Squaw Gulch Overburden Storage reclamation above Cripple Creek, the Arequa Gulch Overburden Storage Area reclamation, and reclamation of historically mined areas around the property.

Historic mining and abandoned mine drainage (AMD) activities in Teller County have impacted water quality and are a potential threat to human and ecosystem health. There are many abandoned hard rock mines on public and private property in Teller County. Some of these are identified in the Colorado Geological Survey Abandoned Mine Land Inventory Project: <http://coloradogeologicalsurvey.org/water/abandoned-mine-land/united-states-forest-hazard-abandoned-mine-land-inventory-project/>

The second highest priority watershed impacted by abandoned mines on public lands includes the Upper Arkansas Watershed (this includes several mines located in the Upper Arkansas Watershed outside of Teller County). These watersheds were prioritized by assessment undertaken by the WQCD in 2000 and 2004. A list of some of the historic mines in Teller County is available at <http://www.victorcolorado.com/stcfnnews.htm>.