U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STATEMENT OF BASIS

PERMITTEE:	United States General Services Administration
FACILITY NAME AND ADDRESS:	Denver Federal Center One Denver Federal Center, Building 41 Denver, CO 80225
PERMIT NUMBER:	CO0034878
RESPONSIBLE OFFICIAL:	Stephanie Downs, Director (303) 945-1476 stephanie.downs@gsa.gov
FACILITY CONTACT:	John Kleinschmidt, Environmental Manager (303) 236-2858 john.kleinschmidt@gsa.gov
PERMIT TYPE:	Federal Facility, Minor Industrial, Permit Renewal
FACILITY LOCATION:	Denver Federal Center Jefferson County, Colorado Lat. 39.715º N, Long. 105.117º W
DISCHARGE LOCATION(S):	Multiple outfalls to McIntyre Gulch (see Table 2)
RECEIVING WATER:	McIntyre Gulch, which is a tributary of Lakewood Gulch, which is a tributary of the South Platte River

1 INTRODUCTION

This statement of basis (SoB) is for the issuance of a NPDES permit (Permit) to the U.S. General Services Administration (GSA or the Permittee). The Permit addresses intermittent discharges associated with certain construction dewatering activities at the Denver Federal Center (DFC). The SoB explains the nature of the discharges, and EPA's decisions for limiting the pollutants in the wastewater, as well as the regulatory and technical basis for these decisions.

The DFC is a federal facility located in Lakewood, Colorado. EPA Region 8 is the permitting authority for federal facilities located within the state of Colorado.

2 MAJOR CHANGES FROM PREVIOUS PERMIT

- A flow limit has been added to the Permit to comply with Colorado Regulation Number 61.
- Total suspended solids (TSS) effluent limits have been modified to comply with Colorado Regulation Number 62.
- Multiple parameters (including volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], and metals) have been added to the monitoring requirements to better protect Colorado water quality standards and address known contaminants present in groundwater at the DFC.
- Acute whole effluent toxicity (WET) testing requirements have been added to this Permit to comply with Colorado's "free from toxics" narrative water quality criteria.
- The frequency of sampling during a discharge event has been modified to address long-term discharges. After ten weeks of monitoring, if the results continue to show no effluent limit exceedances (for those that have effluent limits) and other permit requirements are met, the Permittee may request in writing, in accordance with Section 6.5 of the Permit, a reduction in monitoring to monthly for certain parameters for that construction project only. Note that flow, pH, and the oil & grease visual observation are not included in this reduction. These will continue to be required at the frequency stated in the monitoring requirements table. The reduction in repetitive monitoring will allow the Permittee to apply their resources to sample a much wider range of pollutants and thus better comply with the 1996 and 1997 Orders on Consent and protect Colorado water quality standards.

3 BACKGROUND INFORMATION

The DFC is located in Lakewood, Colorado. The DFC campus is approximately 623 acres and is bordered by 6th Avenue on the north, Kipling Street on the east, W. Alameda Avenue on the south, and Routt Street on the west (Figure 1).

Ongoing construction, operation, and maintenance at the DFC campus necessitate the discharge of construction dewatering effluent on an intermittent basis. This permit is intended to authorize dewatering discharges from multiple construction projects in areas where there is potentially contaminated groundwater. Wastewater discharged under this Permit will enter the DFC storm sewer system prior to entering McIntyre Gulch.

Figure 1. Facility Location Map

3.1 Applicability

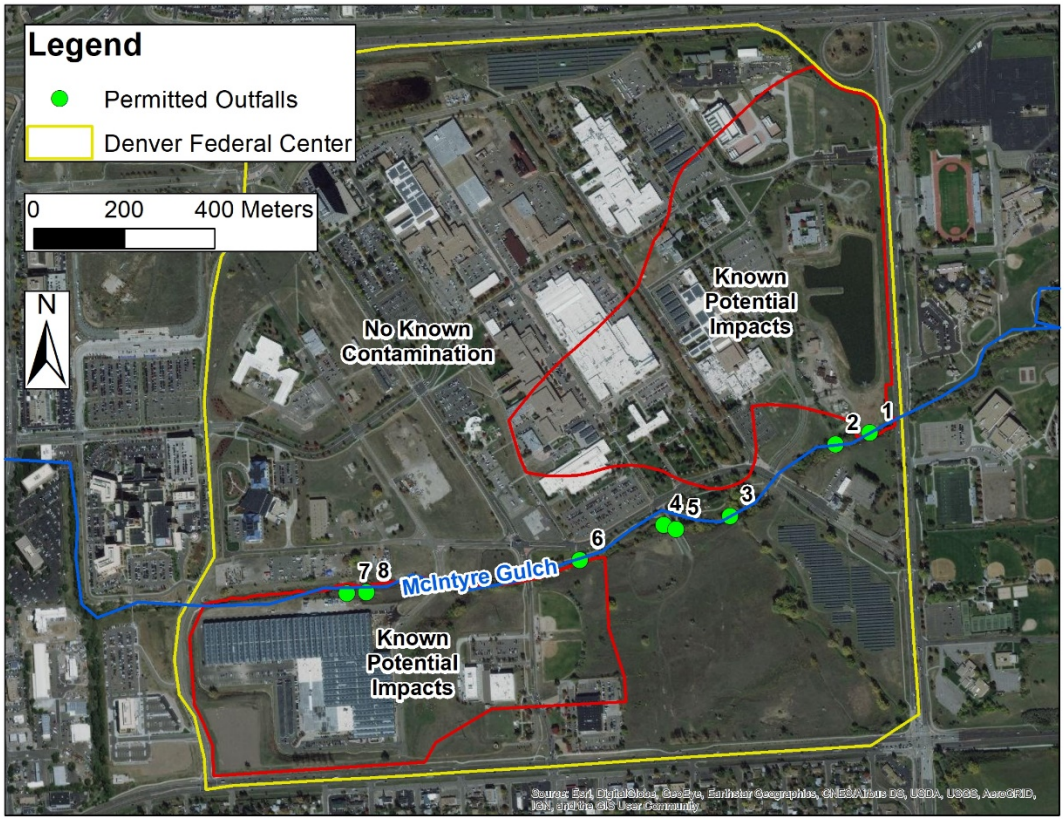
Construction dewatering is a common term used to describe the removal of groundwater or surface water by pumping. This practice is often necessary prior to excavation for foundations or to remove accumulated water from precipitation events which has been in contact with construction activities.

This Permit authorizes the discharge of construction dewatering from all areas of the DFC property where there are "known potential impacts" to groundwater (Figure 2). For the purposes of the Permit, dewatering from these areas represents "contaminated" construction dewatering. While these discharges will be intermittent in nature, the use of a single permit for multiple related activities expedites the process for maintaining permit coverage for several construction projects while maintaining effluent limits which are protective of water quality.

The treatment system for this discharge is not installed at a fixed location. When a construction project is initiated within the areas of known potential impacts, the treatment system will be set up at that location. The treatment system is mobile in that as a new construction project is initiated, a treatment system is set up at that site if needed. This mobile treatment will discharge to one of the permitted outfall locations along McIntyre Gulch (see Section 5.1) depending on the exact location of the construction project. The Permit can provide coverage to multiple construction dewatering projects at the same time within areas of known potential impacts; however, if these construction dewatering projects are discharging concurrently, they must discharge to different outfalls.

This Permit does not authorize discharges of construction dewatering from areas with "no known contamination" (Figure 2). In these cases, EPA's current Construction General Permit (CGP) or a separate individual permit is the appropriate permitting mechanism.

Figure 2. Areas of known potential impacts



3.2 Facility Description

Most of the buildings on the DFC were constructed in 1941 for the Denver Ordnance Plant that produced ammunition in support of World War II. The DFC has since been used by more than 27 different federal agencies. Agencies have used the property for many purposes, including but not limited to, pesticide and herbicide testing, animal testing, landfills (disposal of waste and construction debris), storage of hazardous materials, firing ranges, burn pits, underground storage tanks, a wastewater treatment plant, and disposal of asbestos containing materials.

The Federal Highway Administration (FHWA), an agency of the United States Department of Transportation, occupies part of the DFC pursuant to an agreement with the GSA, and conducts asphalt and other road material testing in a laboratory in Building 52. In the past, FHWA had an approximately 560-gallon underground storage tank (waste tank) located just east of Building 52. The tank was used for the storage of waste 1,1,1-trichloroethane (1,1,1-TCA) and other spent solvents generated by the FHWA during asphalt testing. In 1989, tests were performed on the waste tank and results indicated that the waste tank was leaking. In 1989, FHWA drilled three holes in the vicinity of the waste tank, and soil samples were taken from those holes. Test results indicated the soil was contaminated with 1,1,1-TCA at concentrations as high as 470 mg/L.

In 1991, the Colorado Department of Public Health and the Environment (CDPHE) issued the FHWA, as an operator of a hazardous waste management unit at the DFC, Compliance Order on Consent number 91-01-24-03 that cited the FHWA for on-site disposal of hazardous waste without a permit or interim status. On January 27, 1995, CDPHE amended this Order on Consent with Compliance Order on Consent number 91-01-24-03a.

Information collected on past practices at the DFC and/or the Denver Ordnance Plant, documented in a December 1995 Quantalex Data Review Report, prepared by Ballofet and Associates Inc. for the GSA dated November 22, 1995, along with other documents prepared by the U.S. Army Corps of Engineers and the FHWA assessing the distribution of contaminants in soil and groundwater at the DFC, indicate that there are other sources of contaminated groundwater on the DFC, in addition to the FHWA's former underground storage tank.

On July 18, 1996, the GSA provided the CDPHE with a copy of the draft document entitled "Preliminary Assessment Denver Federal Center, May 24, 1996" in which data on the history and past waste management activities at the former Denver Ordnance Plant and the DFC were evaluated for possible impacts to the environment. Based upon the information in "Preliminary Assessment Denver Federal Center" the CDPHE determined that there has been a release of hazardous waste and hazardous constituents into the environment from the former Denver Ordnance Plant and/or the DFC. Partially as a result of this information, Compliance Order on Consent number 96-04-11-01 (1996 Order on Consent) was issued to GSA to implement a groundwater containment system on the eastern boundary of the DFC to prevent the further off-site migration of groundwater contaminated with hazardous waste or hazardous constituents in excess of established state groundwater standards. The following compounds have been reported from samples taken at the DFC and were specifically identified in the 1996 Order on Consent: 1,1,1-trichloroethane, trichloroethene, 1,1-dichloroethene, tetrachloroethene, vinyl chloride, 1,4 dichlorobenzene, N-nitrosodi-n-propylamine, 1,2,4-trichlorobenzene, 2,4-dinitrotoluene, phenol, 2-chlorophenol, 2-nitrophenol, 4-chloro-3-methylphenol, 4-nitrophenol, pentachlorophenol, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(l,2,3-cd)pyrene, and phenanthrene.

In 1997, Compliance Order on Consent number 97-07-18-01 (1997 Order on Consent) was issued to GSA for its operation of the DFC, a hazardous waste facility, without having either a state or federal permit or interim status for the treatment. The 1997 Order on Consent required GSA to define, assess and remediate, if necessary, all areas of contamination which have been identified through diligent search which are either presently impacting, or may adversely impact human health and the environment. This requirement applies to contamination that originates from past or present activities at the DFC, regardless of whether it is on-site or beyond the boundaries of the DFC. In so doing, GSA shall identify, evaluate and, if necessary, remediate each specific area where solid wastes, hazardous wastes or hazardous constituents may have been disposed or released to the environment as a result of any activities conducted at the DFC and that part of the former Denver Ordnance Plant which is now the DFC, at any time, regardless of whether the location was intended for the management of those materials. The 1997 Order on Consent identified the same 26 chemicals as the 1996 Order on Consent but added lead and "other heavy metals" to the list.

The DFC has three main solvent plumes in groundwater on the eastern half of the facility, which have been sourced from known locations such as the FHWA's leaking underground storage tank and other

unknown sources such as facilities that were run during the World War II era. These plumes are primarily associated with volatile organic compounds (VOCs) such as 1,1,1-TCA. In the southwest portion of the DFC, there are several more plumes with petroleum and other solvents that are also affecting the groundwater. These plumes are from an unknown source and may originate off-site.

Numerous wells have been drilled to monitor the fate and transport of groundwater contamination plumes both on and offsite of the DFC property. The locations of groundwater contamination plumes within the DFC property have been mapped by GSA per the terms of the 1997 Order on Consent. The Denver Federal Center Municipal Separate Storm Sewer System (MS4) permit (Permit Number COR042004) also required monitoring to determine the extent of groundwater infiltration into the storm sewer system and to determine areas where groundwater was contaminated. Results of the monitoring efforts resulted in a conservative assessment of areas where there are "known potential impacts." Areas where sub-surface investigations and/or soil characterization for disposal have revealed no hazardous pollutants and are presumed to be uncontaminated, for the purposes of this Permit, are defined as areas with "no known contamination" (Figure 2).

The 1996 and 1997 Orders on Consent require that GSA establish schedules and requirements for the remediation of any and all contamination that may pose a threat to human health and the environment. The CDPHE has interpreted this as Safe Drinking Water Act (SDWA) maximum contaminants levels (MCLs) must be met at the property boundary, which has been determined to be the compliance point for compliance orders. The 1996 and 1997 Orders on Consent do not require a specific clean-up or "safe" level for any pollutant.

3.3 Treatment Process

In the permit application, the Permittee indicated that their contractors have used a treatment train consisting of a bag filter to remove sediment followed by granular activated carbon (GAC) to treat the contaminated construction dewatering. In addition, the Permittee has used air stripping in other EPA-issued permits on the DFC (e.g., CO-0035033). The literature suggests that GAC and air stripping can provide high removal rates for a wide variety of pollutants.

EPA recognizes that management options will vary from site-to-site depending on the level and type of contamination encountered. Some excavations may be relatively dry, and the volume of water encountered may be manageable without discharging. Some excavations in the areas where there are "known potential impacts" may have effluent concentrations at or below the effluent limitations in this Permit. Where these are the case, the Permit allows for flexibility provided that the effluent limitations and monitoring requirements in the Permit are met.

While this Permit is written for treatment using GAC, EPA realizes the situation may arise where an alternative treatment system may be better equipped to handle a particular pollutant. Examples might include hydrogen peroxide addition, ultraviolet radiation, etc. EPA's Treatability Database notes a wide variety of portable on-site treatment systems with varying projections of removal efficiencies. The Permit provides flexibility by allowing the use of alternative treatment systems. However, per section 8.1 of the Permit, the Permittee must give notice as soon as possible of any planned physical alterations or additions to the permitted facility meeting the criteria listed in the Permit. This specifically includes when an alteration (or alternative treatment system) could significantly change the nature or increase the quantity of pollutant discharged including pollutants not subject to effluent

limitations in the Permit. Since a change to the treatment system (e.g., adding hydrogen peroxide treatment or adding any other treatment chemical) could potentially change the pollutants in the effluent, any changes in the treatment system will require notification to EPA. EPA may impose additional monitoring requirements or effluent limitations to ensure that the chemicals used in the treatment system are not present in the effluent in quantities that could have the reasonable potential to cause or contribute to an exceedance of water quality standards.

3.4 Chemicals Used

The Permittee currently uses GAC for their treatment system. EPA does not consider organic carbon to be a pollutant of concern.

As discussed in section 3.3, if the Permittee plans to use an alternative treatment system, they will have to provide notice to EPA as soon as possible. EPA may impose additional effluent limits and/or monitoring requirements to ensure that these pollutants used in the treatment process are not present in the effluent in quantities that have the reasonable potential to cause or contribute to an exceedance of water quality standards.

4 PERMIT HISTORY

According to EPA records, this renewal is the 2nd issuance of this NPDES permit. The original permit became effective on January 1, 2015 and was set to expire on December 31, 2019. However, the GSA submitted a permit renewal application in a timely manner, and so the previous permit was administratively continued.

4.1 Discharge Monitoring Report (DMR) Data

The dewatering operation is an intermittent discharger that only discharges when there is ongoing construction that requires dewatering activities. The Permittee reported discharges at Outfall 001 in 2016-2018 during the previous permit cycle (Table 1). The Permittee did not report any discharges at Outfalls 002 through 008 during the previous permit cycle. The Permittee reported two violations of the TSS limit (March 2016 and June 2018) and one violation of the oil and grease limit (March 2016) at Outfall 001. According to the Permittee, the initial discharge (March 2016) had some issues with dirty piping and was quickly shut down while the issues were fixed. The Permittee also reported all non-detects as ‘0’s, per guidance from EPA.

Table 1. Summary of the GSA dewatering operation's DMR Data (2015-2020) for Outfall 001 from EPA's Integrated Compliance Information System (ICIS) database (data accessed April 2020)

Parameter	Permit Limit(s)	Reported Average	Reported Range	Number of Data Points	Number of Violations
Flow, mgd	-	0.08	0.0 – 0.25	11	-
Total Suspended Solids (TSS), mg/L	45	27	0 – 72	11	2
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), µg/L	100	0.1	0 – 1	11	0
Benzene, µg/L	5.0	0.1	0 – 1	11	0
1,1-Dichloroethane, µg/L	700	0.55	0 – 4.62	11	0
1,1-Dichloroethene, µg/L	7.0	0.1	0 – 1	11	0
Trichloroethene (TCE), µg/L	5.0	0.1	0 – 1	11	0
1,1,1-trichloroethane (1,1,1-TCA), µg/L	200	0.1	0 – 1	11	0
Vinyl chloride, µg/L	2.0	0.01	0 – 0.11	11	0
pH, standard units	6.5-9.0 a/	7.6 b/	6.9 – 8.5	11	0
Oil & Grease, mg/L	10	7.6	0 – 83.4	11	1
Oil and Grease, visible observation of sheen	No visible sheen allowed	-	No visible sheen observed	11	0

a/ Limitation is a range, pH shall not to be less than 6.5 nor greater than 9.0 standard units at any time.
b/ Median reported pH.

4.2 Inspection History

This operation has not been inspected since the last permit was issued in January 2015.

5 WATER QUALITY CONSIDERATIONS

5.1 Outfall Locations

The exact location of dewatering activities will depend on where the construction site is located. This Permit authorizes the discharge of wastewater to eight (8) outfalls (Table 2 and Figure 2). These outfalls are all stormwater outfalls to McIntyre Gulch.

Table 2. Outfall Locations

Outfall	Latitude (° N)	Longitude (° W)
001	39.7172	105.1105
002	39.7170	105.1114
003	39.7157	105.1142
004	39.7156	105.1159
005	39.7155	105.1156
006	39.7150	105.1181
007	39.7146	105.1241
008	39.7146	105.1236

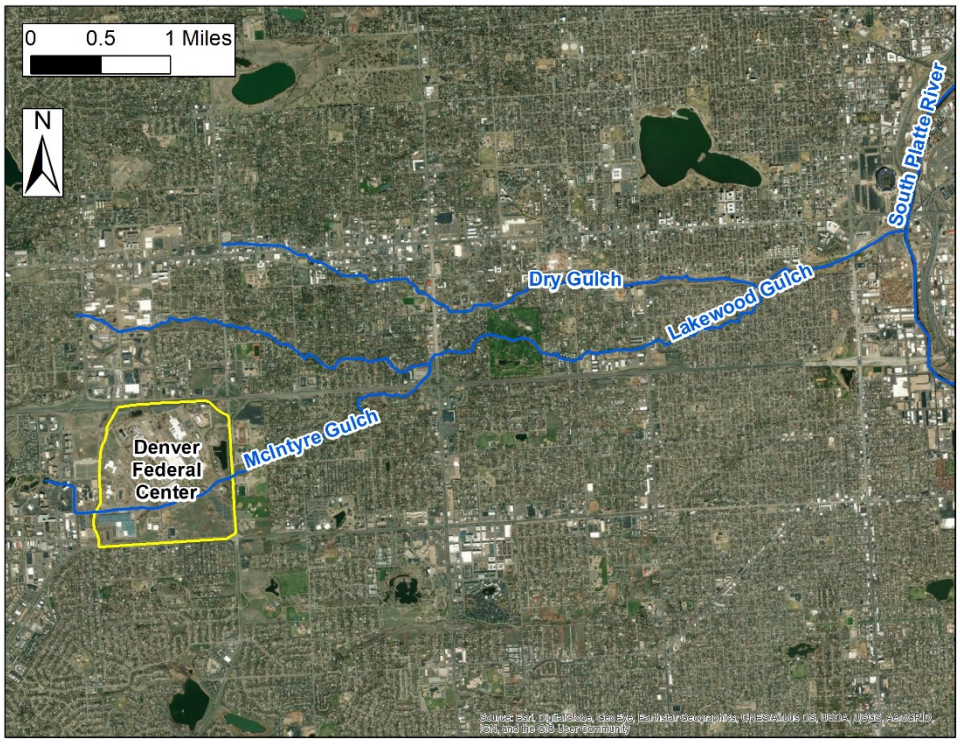
The authorization to discharge under this Permit is limited to these specific outfalls. However, the Permit allows for some flexibility by allowing outfalls to be moved without reopening the Permit provided all of the following are met:

1. The new outfall location is within 0.25 miles (1,320 feet) of the existing outfall location;
2. McIntyre Gulch remains the receiving water for the new outfall;
3. There is no change to affected landowners; and
4. Notification of the change in outfall location is provided to EPA **prior** to any discharges to the new outfall location.

5.2 Description of Receiving Water

Discharges from the DFC will enter GSA's storm sewer system and discharge through eight outfalls into McIntyre Gulch (Figure 2). McIntyre Gulch is located within USGS HUC 10190002 (Upper South Platte). It flows approximately two miles from the DFC before discharging into Lakewood Gulch. Lakewood Gulch flows approximately five miles from its confluence with McIntyre Gulch before entering the South Platte River just south of the Empower Field at Mile High Stadium near downtown Denver (Figure 3).

Figure 3. Stream Network downstream of McIntyre Gulch



McIntyre Gulch does not have any continuous USGS gages on it, but the USGS did collect approximately 50 to 100 flow measurements both upstream and downstream of the DFC on McIntyre Gulch between 1996 and 2000. The median flow in the vicinity of the DFC was approximately 1 cubic foot per second (cfs) during this time (although it ranged from 0.2 cfs to 73 cfs). According to the Permittee, McIntyre Gulch is a perennial stream with continuous surface flow in the channel. The Permittee also says it tends to flow at baseflow conditions much of the year and then quickly increase in flows during precipitation events. Based on this limited dataset, it is not possible to calculate a chronic or acute low flow at this location. However, for another permit written for the DFC (CO-0035033), the local water commissioner was contacted to obtain an estimate of the low flow for McIntyre Gulch. Per the state of Colorado, this is a common practice in the absence of sufficient flow data. Communication with the local water commissioner resulted in the adoption of 0.2 cfs as the chronic low flow condition for the McIntyre Gulch stream segment and will be used for subsequent analysis. The state of Colorado uses the 30E3 (also known as the 30B3) as the chronic low flow condition, which is the empirical biologically-based chronic 30-day low flow over a 3-year period of record.

6 PROPOSED PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

6.1.1 Federal TBELs

There are no applicable Federal Effluent Limitation Guidelines for this type of wastewater discharge (i.e., groundwater remediation and dewatering). Since there are no Federal Effluent Limitation

Guidelines, other federal guidance has been used to derive technology based effluent limits for organic pollutants that do not have an applicable water quality standard adopted by the state of Colorado. See section 6.4.2 for more information.

6.1.2 State TBELs

Colorado Regulation Number 61 – Colorado Discharge Permit System – defines technology-based effluent limitations as: all applicable state effluent limitations adopted in Colorado Regulation Number 62 – Regulations for Effluent Limitations, effluent limitations adopted for categorical industrial users adopted by EPA, applicable standards and criteria in 40 CFR Part 125, applicable toxic pollutant standards in 40 CFR Part 129, and best professional judgment.

Colorado Regulation Number 62 establishes the following numeric limits for when the parameter may, without treatment, be present in the discharge at a level approaching the relevant limit (Table 3). These can be found in section 62.5 of Regulation Number 62.

Due to the nature of the discharge, biochemical oxygen demand (BOD_5), carbonaceous biochemical oxygen demand ($CBOD_5$), and residual chlorine are not considered to be pollutants of concern (POCs). This is not a domestic wastewater treatment facility, and these pollutants would not be present in this groundwater at levels approaching the relevant limits. Chlorine is not used in the treatment process. Therefore, no BOD_5, $CBOD_5$ or residual chlorine effluent limits or monitoring will be required.

Colorado Regulation Number 61 also requires that all pollutants (with a few exceptions) shall have limitations expressed in terms of either concentration and mass or concentration and flow. Since there are no limitations in terms of mass in this Permit, a flow limit will be included.

Table 3. Specific Limitations for the Discharge of Pollutants per Colorado Regulation Number 62 (62.5[1])

PARAMETER	**PARAMETER LIMITATIONS**		
	30-Day Average	7-Day Average	Instantaneous Maximum
Biochemical Oxygen Demand (BOD_5)	30 mg/L	45 mg/L	N/A
Total Suspended Solids (TSS)	30 mg/L	45 mg/L	N/A
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	25 mg/L	40 mg/L	N/A
Residual Chlorine	N/A	N/A	0.5 mg/L
pH	N/A	N/A	6.0 - 9.0 standard units
Oil and Grease	N/A	N/A	10 mg/L

6.2 Water Quality Based Effluent Limitations (WQBELs)

The dewatering operation discharges into McIntyre Gulch, which is a tributary of Lakewood Gulch, which in turn is a tributary of the South Platte River. Since the discharge is anticipated to be intermittent and short-term in nature, only water quality standards for the immediate receiving water (McIntyre Gulch) were considered. This assumption will be reviewed during the next permit renewal. A general description of the receiving water can be found in section 5.2. The receiving water is within the state of Colorado and thus state of Colorado water quality standards (WQS) apply.

Colorado's water quality standards are established to protect both aquatic life and human health (based on consumption of organisms and/or water). When both criteria apply, EPA considers the more stringent of the two for final WQBELs. The state of Colorado also implements total maximum daily loads (TMDLs) to address waters that are impaired. Colorado's relevant water quality standards and TMDLs are further discussed in this section.

6.2.1 Colorado Regulation Number 31 – The Basic Standards and Methodologies for Surface Water

Colorado Regulation Number 31 provides basic standards, an antidegradation rule and implementation process, and defines beneficial uses. It is the basis for the water quality standards assigned to these stream segments in Colorado Regulation Number 38.

6.2.2 Colorado Regulation Number 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin

Colorado Regulation Number 38 provides basic, narrative, and numeric water quality criteria for the specific stream segments affected by the Permit. According to this regulation, McIntyre Gulch is within segment 16c of the South Platte River (COSPUS 16c). COSPUS 16c is described as "all tributaries to the South Platte River, including all wetlands, from the outlet of Chatfield Reservoir, to a point immediately below the confluence with Big Dry Creek, except for specific listings in the subbasins of the South Platte River, and in Segments 16a, 16d, 16e, 16f, 16g, 16h, 16i, 16j, and 16k." Classifications and designations are listed below for

- Classifications: Agriculture, Aquatic Life Warm 2, Recreation E
- Designation: Use Protected

Classifications and Designations are defined in Colorado Regulation Number 31 and these definitions are provided below:

Agriculture: These surface waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

Aquatic Life: These surface waters presently support aquatic life uses as described below, or such uses may reasonably be expected in the future due to the suitability of present conditions, or the waters are intended to become suitable for such uses as a goal:

- *Class 2 – Cold and Warm Water Aquatic Life: These are waters that are not capable of sustaining a wide variety of cold or warm water biota, including sensitive species, due to*

physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.

Recreation (Class) E: These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.

Use Protected designation: The purpose of these provisions is to identify waters whose quality is not better than the federal "fishable, swimmable" goal, and which therefore are appropriately not subject to the antidegradation review process.

6.2.3 Colorado Regulation Number 61 and 62 – Regulations for Effluent Limitations

These are covered in section 6.1 – Technology-based Effluent Limitations

6.2.4 Colorado Regulation Number 85 – Nutrients Management Control Regulation

The state of Colorado's *Nutrients Management Control Regulation* establishes technology based effluent limitations and monitoring requirements for total inorganic nitrogen and total phosphorus for certain non-domestic wastewater treatment works (i.e., industrial discharges). The effluent limitations for non-domestic wastewater treatment works apply to:

1. Non-domestic dischargers with a Standard Industrial Classification code in the Major Group 20 (SIC 20); and
2. Any other non-domestic discharger for which the Division has determined, based on credible information that the facility is expected, without treatment for nutrients, to discharge total inorganic nitrogen or total phosphorus concentrations to surface waters in excess of the effluent limitations in section 85.5(2)(a)(ii)(B).

However, there is an exception in 85(3)(b):

The numerical effluent limitations set forth in sections 85.5(1)(a)(iii), 85.5(1)(b), and 85.5(2) shall not apply under the following circumstances…Where discharges consist solely of ground water that is pumped for the purpose of dewatering a construction site or for building sumps so long as no phosphorus or nitrogen is added to the ground water being discharged.

Since the discharge consists solely of groundwater, and the treatment processes do not add any nitrogen or phosphorus, nitrogen and phosphorus effluent limitations and monitoring will not be required in this Permit.

6.2.5 Colorado Water Quality Policy 24 – Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops

EPA found it appropriate to evaluate this policy for the Permit. The purpose of this policy is to provide additional guidance to the development of effluent limits, under two narrative standards, for permitting discharges to surface waters that subsequently are diverted to crop irrigation. The scope of this guidance is limited to two measures of dissolved salts (electrical conductivity [EC] and sodium adsorption ratio [SAR]) that can be used to further protect the downstream suitability of state waters

for crop irrigation. This policy applies to any stream segments that are assigned an agricultural beneficial use.

However, in the case of McIntyre Gulch, there is no actual crop irrigation use of the stream. Aerial photography clearly shows that with the exception of two or three parks and a golf course, the stream and surrounding areas are completely urbanized (Figure 3). No irrigated crops are grown in the area using water from McIntyre Gulch, so per Table 3 of Water Quality Policy 24, this policy does not apply. Therefore, EC and SAR effluent limitations and monitoring will not be required in this Permit.

6.2.6 Stream Impairments and Total Maximum Daily Loads (TMDLs)

Currently, segment 16c (which includes McIntyre Gulch) is on the 303(d) list as impaired for *E. coli* and dissolved selenium. These listings are both in category 5, which is defined as "impaired without a TMDL completed." Thus, there are no TMDLs developed for McIntyre Gulch at this time. The listing priority for *E. coli* is "High", and the listing priority for dissolved selenium is "Low." *E. coli* is not considered a pollutant of concern at this facility. Selenium is considered a pollutant of concern and monitoring requirements have been added to the Permit (see section 6.4.7).

McIntyre Gulch discharges to Lakewood Gulch, which then discharges to the South Platte River. The state of Colorado does not have any 303(d) listings or TMDLs for Lakewood Gulch. The state of Colorado has implemented several TMDLs for the South Platte River downstream of this facility, including TMDLs for *E. coli*, cadmium, nitrate, and dissolved oxygen. This discharge is not assigned a wasteload allocation (WLA) in any of these TMDLs, and a review of background and monitoring well data at the DFC indicates that *E. coli*, nitrate, and dissolved oxygen are not pollutants of concern at this facility. Cadmium is considered a pollutant of concern and monitoring requirements have been added to the Permit (see section 6.4.7). The Permit contains a reopener provision that could be used if a WLA is developed via a TMDL for this watershed or a downstream watershed in the future.

6.3 RCRA Orders on Consent

As discussed in section 3.2, a 1996 Order on Consent addressed groundwater plumes migrating east off-site of the DFC, and a 1997 Order on Consent addressed general clean-up and mitigation of pollutants in the soils and groundwater. While neither Order on Consent directly addressed dewatering activities discharging to McIntyre Gulch, the 1996 and 1997 Orders on Consent require the contamination at the DFC not pose a threat to human health and the environment. Discharging contaminated groundwater to a surface stream in urban Denver could pose a threat, and therefore, this Permit addresses the Orders on Consent.

Both Orders on Consent identified the same 26 chemicals as known present (see section 3.2 for the complete list). These include VOCs and SVOCs. In addition, the 1997 Order on Consent includes lead and "other heavy metals" as known present. These compounds are considered pollutants of concern and will be addressed in the Permit.

The CDPHE has interpreted the avoidance of threat to human health and the environment to mean that Safe Drinking Water Act maximum contaminant levels (MCLs) must be met at the property boundary. Therefore, the water quality-based effluent limits in this Permit are implemented as end-of-pipe limits using the MCL. Table 4 outlines the MCLs for VOCs included with effluent limitations in this Permit. These MCLs are also listed in Colorado Regulation Number 31.

Table 4. MCLs for VOCs included in the Permit effluent limitations

Pollutant	MCL (µg/L)
Benzene	5
1,1-Dichloroethene	7
1,1,1-Trichloroethane (1,1,1-TCA)	200
Vinyl Chloride	2
Trichloroethene (TCE)	5

6.4 Justifications and Reasonable Potential Determinations for Final Effluent Limitations and Monitoring Requirements

6.4.1 Groundwater Data from the DFC

This Permit authorizes discharges from the same set of contaminant plumes that several other EPA-issued NPDES permits address (i.e., NPDES permits CO-0034860 and CO-0035033), *plus* discharges from additional contaminant plumes with other pollutants of concern. Therefore, this Permit considers a broader range of pollutants than other EPA-issued permits on the DFC. To determine how broad this consideration should be, additional data from the GSA was reviewed to better characterize the groundwater in the areas of "known potential impacts."

The GSA provided EPA with a representative dataset of the contaminated source water containing over 17,000 water quality sampling events for 146 different compounds. These sampling events took place at the DFC in the areas with "known potential impacts" over the last 20 years. This dataset provides a good base to characterize the influent to the dewatering system, and this provides an estimate of potential contaminants in the effluent.

A qualitative analysis of pollutants of concern was performed on these groundwater samples to determine which ones could, *without treatment*, represent a potential exceedance of surface water quality standards. Surface water quality standards were used for this groundwater, because the groundwater is being transferred to and discharged to surface water. It is also important to note that these are untreated groundwater samples and *not treated effluent samples*, so this is not a standard reasonable potential exercise where effluent limits would be assigned. The point of this exercise is simply to determine what pollutants of concern should be monitored in the effluent.

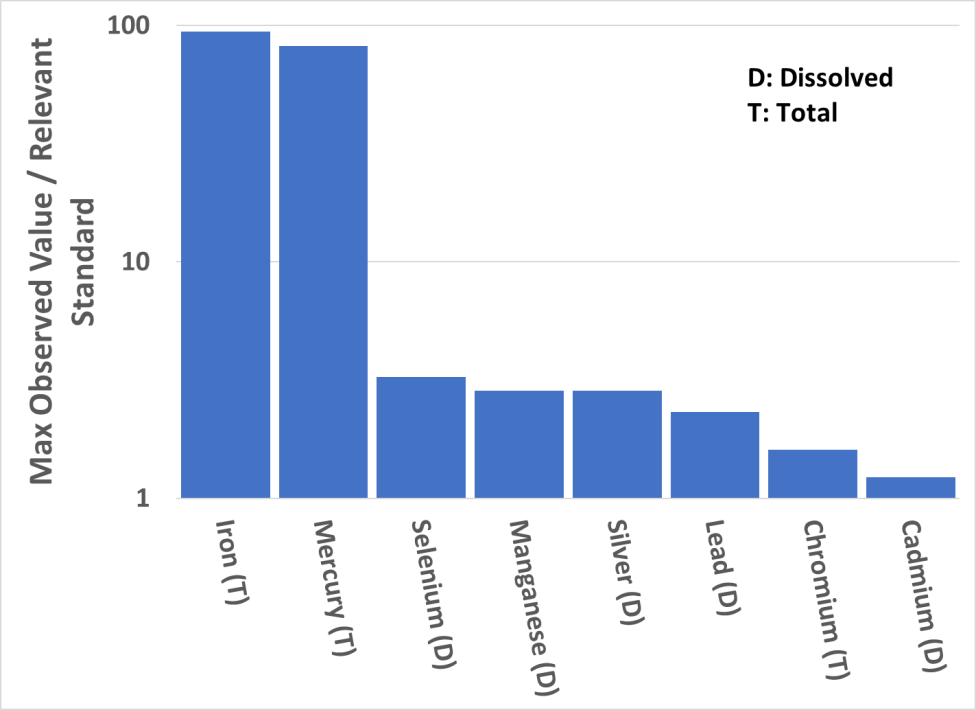
Colorado's water quality standards for most heavy metals are hardness dependent. To determine a hardness to use in the calculation of water quality standards, EPA's Water Quality Portal was used to access ambient data for McIntyre Gulch and Lakewood Gulch. While there was no hardness data for McIntyre Gulch, EPA found 56 hardness measurements from Lakewood Gulch. The 25th percentile of this dataset (180 mg/L) was used to determine hardness dependent metals water quality standards

for use in a reasonable potential analysis. This is a slightly conservative approach, as metals water quality standards increase with increasing hardness.

Of the 146 compounds analyzed in the untreated groundwater, eight were detected in quantities that exceed applicable water quality standards (Figure 4). All eight compounds are heavy metals (selenium is technically a metalloid but is commonly grouped with heavy metals due to its chemical and physical properties). Lead and "other heavy metals" are included in the 1997 Order on Consent as potentially present.

These eight compounds are considered pollutants of concern.

Figure 4. Pollutants of Concern at the DFC Based on Groundwater Monitoring



6.4.2 Volatile Organic Compounds (VOCs)

Eight VOCs were listed in the final 1996 Order on Consent as existing at elevated concentrations in groundwater and sediments. These include 1,1,1-trichloroethane, trichloroethene, 1,1-dichloroethene, tetrachloroethene, vinyl chloride, 1,4 dichlorobenzene, N-nitrosodi-n-propylamine, and 1,2,4-trichlorobenzene. The previous permit included effluent limits for seven VOCs (four from the above list plus three additional ones), and these will be retained in this Permit. The four compounds on the above list that were not addressed in the previous permit are further discussed later in this section.

Of the seven VOCs with previous effluent limits, five of these effluent limits are based on the MCLs in Table 4, which are listed in Colorado Regulation Number 31. No MCLs have been adopted for BTEX or 1,1-dichloroethane (1,1-DCA). The effluent limits for these two pollutants are described further below.

The effluent limit for BTEX is based on EPA's *Model NPDES Permit for Discharges Resulting from the Cleanup of Gasoline Released from Underground Storage Tanks* and *Fact Sheet, NPDES Permit Number: ID-G91-0000*. This document recommends a total BTEX limit of 100 µg/L based on an air stripping removal efficiency of 99.5%. Since neither EPA nor the state of Colorado have water quality standards for BTEX that would be more strict than 100 µg/L, this value is considered protective and will remain in the Permit to avoid anti-backsliding concerns (see section 6.7).

The effluent limit of 700 µg/L for 1,1-DCA is based on a statement from the previous permit, "The limitation for 1,1-dichloroethane is based on a state of Colorado Groundwater Equivalent Standard for human health risk." The documentation, calculations, and other bases for this value are not available in the administrative record, and the CDPHE was unable to verify what document this referred to. The Permittee provided an older spreadsheet, which had the following note associated with the value of 700 µg/L for 1,1-DCA "*Groundwater Standard Equivalent from 09/10/2001 update of "Residential Scenario Soil Remediation Objectives" document supplied by CDPHE. These values have no regulatory authority, are not peer-reviewed or promulgated, and the process used in their derivation may or may not be considered acceptable. If a compound is reported as detected for which there are no groundwater criteria specified in this table, CDPHE may calculate a groundwater equivalent value.*" Based in this note, it appears that this value was derived from soil remediation objectives and CDPHE at one time calculated a non-binding groundwater equivalent standard for 1,1-DCA. Since neither EPA nor the state of Colorado have water quality standards for 1,1-DCA that would be more stringent than 700 µg/L, this value is considered protective and will remain in the Permit to avoid anti-backsliding concerns (see section 6.7).

The four VOC compounds identified in the 1996 Order on Consent that were not included in the previous permit are 1,4-dichlorobenzene, N-nitrosodi-n-propylamine, tetrachloroethene (PCE), and 1,2,4-trichlorobenzene. The GSA database contains little or no monitoring data for most of these compounds. Two of them – PCE and 1,2,4-trichlorobenzene – have applicable water quality standards in McIntyre Gulch. To determine if reasonable potential exists to cause or contribute to an exceedance of Colorado water quality standards, monitoring for these two pollutants will be required in the Permit.

6.4.3 Semivolatile Organic Compounds (SVOCs)

SVOCs include polycyclic aromatic hydrocarbons (PAHs), phenols, and other organic compounds that tend to have a higher molecular weight and a higher boiling point temperature than VOCs. Eighteen SVOCs were listed in the final 1996 Order on Consent as existing at elevated concentrations in groundwater and sediments at the DFC. These are further described in the next three sections.

6.4.3.1 PAHs

Eleven PAHs were listed in the final 1996 Order on Consent as existing at elevated concentrations in groundwater and sediments at the DFC. These include acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(l,2,3-cd)pyrene, and phenanthrene. These pollutants were not included in the previous permit as effluent limits or monitoring requirements.

McIntyre Gulch has aquatic life based water quality standards for two of these compounds – acenaphthene and fluoranthene – plus standards for a third PAH that was not included in the 1996 Order on Consent (naphthalene). A review of the untreated groundwater data from GSA shows that there are nearly 100 monitoring samples for each of these three compounds. Maximum concentrations for all three are over three orders of magnitude below the applicable water quality standard. Based on this, reasonable potential does not exist to cause or contribute to an exceedance of Colorado water quality standards. Monitoring for these pollutants will not be required in the Permit.

6.4.3.2 Phenols

Six phenol compounds were listed in the final 1996 Order on Consent as existing at elevated concentrations in groundwater and sediments. These include phenol, 2-chlorophenol, 4-chloro-3-methylphenol, 2-nitrophenol, 4-nitrophenol, and pentachlorophenol. These pollutants were not included in the previous permit as effluent limits or monitoring requirements. McIntyre Gulch has aquatic life based water quality standards for four of these six compounds.

The GSA has not monitored groundwater or effluent at the DFC for phenol compounds. To determine if reasonable potential exists to cause or contribute to an exceedance of Colorado water quality standards or to violate the 1996 Order on Consent, monitoring for these six pollutants will be required in the Permit.

6.4.3.3 Other SVOCs

One additional SVOC was listed in the final 1996 Order on Consent as existing in elevated concentrations in groundwater and sediments: 2,4-dinitrotoluene. This pollutant was not included in the previous permit as an effluent limit or monitoring requirement, nor did the GSA database contain any monitoring data for this compound.

However, McIntyre Gulch does not have a water quality standard for 2,4-dinitrotoluene. Based on this, reasonable potential does not exist to cause or contribute to an exceedance of Colorado water quality standards. Monitoring for this pollutant will not be required in the Permit.

6.4.4 Heavy Metals

Lead and "other heavy metals" are included in the 1997 Order on Consent as potentially present. While the term "heavy metal" does not have a formal definition, most uses of the term include about 22 metals, with the metalloids arsenic and selenium usually included.

With that in mind, a review of the untreated groundwater monitoring data from GSA indicates that lead and several other heavy metals are present at concentrations that exceed water quality standards (Figure 4). When compared to a calculated water quality standard (see section 6.4.1), eight metals were found in the groundwater to be present in quantities that exceed water quality standards. These were cadmium, chromium, iron, lead, manganese, mercury, selenium, and silver. Three additional heavy metals (copper, nickel, and zinc) have not been monitored at the DFC, but do have applicable surface water quality standards for this stream segment, and are typically found in water containing other heavy metals. Thus, these three were included as pollutants of concern. To determine if

reasonable potential exists to cause or contribute to an exceedance of Colorado water quality standards, monitoring for these 11 heavy metals will be required in the Permit.

6.4.5 Per- and Polyfluoroalkyl Substances (PFAS)

Prior to 1975, the DFC had its own Fire Department which was housed in DFC Building 44. The DFC stopped having onsite fire services in 1975. Since the DFC Fire Department was eliminated, fire protection services have been provided by Lakewood/Bancroft, which became the current West Metro Fire Authority. Even though aqueous film-forming foam (AFFF) was developed in the mid-1960s, the DFC Fire Department never used AFFF. Prior to joining GSA, the Regional Fire Protection Engineer was a command officer with the Lakewood/Bancroft and West Metro Fire Authority. During his tenure from 1970 to 2002, he indicated that AFFF was never used at the DFC.

For the last two years, the Hazardous Waste Corrective Action Unit of the Hazardous Materials Division of CDPHE has required each of the regulated RCRA Corrective Action Facilities in Colorado that are considered to have a high potential to have used PFAS containing compounds at the property to conduct groundwater screening for PFAS constituents. The Hazardous Materials Division did not require GSA to conduct a PFAS groundwater screening at the DFC, because they believe there is a very low probability that chemicals that contain or breakdown to PFAS constituents were ever used at the DFC.

Based on this information, EPA is not requiring PFAS monitoring in this Permit at this time. However, the CDPHE has recently finalized a new water quality policy regarding PFAS (Water Quality Policy 20-1, July 2020). The CDPHE may provide additional input on their new policy during the 401 certification process.

6.4.6 Flow

The previous permit did not contain a flow limit. To comply with Colorado Regulation Number 61, all pollutants (with a few exceptions) shall have limitations expressed in terms of either concentration and mass or concentration and flow. Since there are no limitations in terms of mass in this Permit, a flow limit will be added.

This operation is an intermittent discharger, with discharge occurring when and where dewatering is required. For example, during the last permit cycle, the Permittee only discharged for 11 quarters within the 20 quarter permit cycle. Dewatering flows may also be seasonally based, with higher discharges during periods of the year when groundwater tables have risen.

The Permittee reported a max discharge value of 0.13 million gallons per day (mgd) in their permit application. This will be used for the Permit 30-day average effluent limitation. This will be implemented as a Permit flow limit applied as a 30-day average limit for the sum of all eight outfalls and not per outfall.

6.4.7 Oil and Grease

An oil and grease limit of 10 mg/L daily maximum was included in the previous permit per Colorado Regulation Number 62 (Table 3). This effluent limit will be carried over into the renewal.

6.4.8 pH

A pH range limit of 6.5-9.0 was included in the previous permit, and this will be carried over into the renewal. This is based on the water quality standard for stream segment COSPUS16c. This water quality standard is more protective than the TBEL from Colorado Regulation Number 62 (Table 3).

6.4.9 Total Suspended Solids (TSS)

The previous permit contained a daily maximum TSS limit of 45 mg/L. This is not protective of Colorado water quality standards, as Regulation Number 62 requires a 30-day average TSS value of 30 mg/L and a 7-day average TSS value of 45 mg/L (Table 3). To address this issue, the Permit will contain a 30-day average effluent limit of 30 mg/L and a 7-day average effluent limit of 45 mg/L. Since the sampling frequency for TSS is weekly, both a weekly and monthly limit will be used. This will comply with Colorado water quality standards and is more in line with other EPA-issued permits at the DFC (e.g., CO-0035033). Because removing the daily maximum limit of 45 mg/L could be considered less stringent in certain situations, changes to TSS limits are further addressed in section 6.7 (anti-backsliding).

6.4.10 Temperature

An effluent limit for temperature is not included in this Permit. This Permit discharges groundwater, which is typically cooler than ambient surface temperatures in the summer and warmer than ambient surface temperatures in the winter. There is no reasonable potential for this discharge to impact temperature water quality standards.

6.4.11 Whole Effluent Toxicity (WET) Monitoring

Many toxic pollutants have cumulative effects on aquatic organisms that cannot be detected by individual chemical testing. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. These tests measure the aggregate toxicity of the whole effluent, so this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Groundwater at the DFC is contaminated with multiple chemicals. Most of these chemicals are considered toxics, and many do not have MCLs or surface water quality standards for the protection of aquatic life or human health. Thus, there is no clear indicator that toxicity would not be present below a certain concentration. Due to bioaccumulation of chemicals and toxicity in aquatic organisms, the potential for aggregate effects, and persistence of the chemicals in the discharge, EPA has determined that reasonable potential exists to violate the state of Colorado “free from toxics” narrative water quality criterion found at Colorado Regulation 31.11.

Therefore, the requirement to perform acute WET testing is being added to the Permit. Acute WET testing shall be performed quarterly by the Permittee for two species: *Ceriodaphnia dubia* and *Pimephales promelas*. If WET testing confirms reasonable potential to cause or contribute to an exceedance of the narrative standards, the Permit may be reopened to include a WET limitation. Specific WET requirements are outlined in the Special Conditions section of the Permit (section 5).

Hardness requirements for WET testing in the Permit were determined by the receiving water quality data in Lakewood Gulch (there was no available hardness data in McIntyre Gulch). Based on 56 samples, the receiving water hardness ranges from approximately 180 to 300 mg/L, with a median value of 230 mg/L. Based on this, the dilution water used for the test shall be "hard" synthetic laboratory grade water, consistent with EPA WET manual laboratory specifications.

6.5 Final Effluent Limitations

Applicable technology based and water quality based effluent limits were compared, and the most stringent of the two was selected for the following effluent limits (Table 5).

Table 5. Effluent Limitations – Outfall 001 through 008

Characteristic	30-Day Average a/	7-Day Average a/	Daily Maximum a/	Limit Basis b/
Flow, mgd	0.13 c/	n/a	n/a	CO Reg No. 62
Total Suspended Solids, mg/L	30	45	n/a	CO Reg No. 62
Benzene, µg/L	n/a	n/a	5.0	MCL
BTEX, µg/L	n/a	n/a	100	PP d/
1,1-Dichloroethane (1,1-DCA), µg/L	n/a	n/a	700	PP d/
1,1-Dichloroethene (1,1-DCE), µg/L	n/a	n/a	7.0	MCL
1,1,1-Trichloroethane (1,1,1-TCA), µg/L	n/a	n/a	200	MCL
Trichloroethene (TCE), µg/L	n/a	n/a	5.0	MCL
Vinyl Chloride, µg/L	n/a	n/a	2.0	MCL
Oil and Grease – no sample shall exceed 10 mg/L				CO Reg No. 62
The pH of the discharge shall not be less than 6.5 and shall not be greater than 9.0 at any time.				CO Reg No. 38

a/ See section 1 of the Permit for definition of terms.
b/ MCL: Maximum Contaminant Level for drinking water, PP: Previous Permit
c/ This flow limit is applied as a 30-day average limit for the sum of all outfalls under the Permit, and not per outfall.
d/ The limitations for BTEX and 1,1-dichloroethane (1,1-DCA) are based on the previous permit. See section 6.4.2 for further explanation.

6.6 Antidegradation

Discharges from the GSA dewatering operation are existing, and no changes to effluent quality are proposed. No exceedances of numeric or narrative state water quality standards are allowed in the Permit. An antidegradation review is not necessary for McIntyre Gulch per Colorado's

Antidegradation Policy, because the receiving stream is a use protected water, and use protected waters are not subject to antidegradation review.

The CDPHE's policy is to consider any downstream waters that the effluent will reach in the antidegradation review. McIntyre Gulch flows approximately two miles from the DFC before discharging into Lakewood Gulch. Lakewood Gulch flows approximately five miles from its confluence with McIntyre Gulch before discharging into the South Platte River. Although this short-term and intermittent discharge is not expected to affect Lakewood Gulch, to be conservative an antidegradation analysis was completed for Lakewood Gulch because Lakewood Gulch is only a few miles downstream of the DFC and is not much larger than McIntyre Gulch. This antidegradation review followed the procedures outlined in *Antidegradation Significance Determination for New or Increased Water Quality Impacts*.

The Permit does not contain any permit limit increases or new water quality impacts. According to the *Antidegradation Review Process Overview* (Figure 1 in the above-referenced document), the *Screening Process – Is there a New or Increased WQ Impact?* (Figure 2 in the above-referenced document) is used to determine if there is a new or increased water quality impact. This flowchart requires comparing the current and proposed design flows and discharge concentrations/effluent limits.

The design flow of the facility is calculated to be 0.13 mgd. This has not changed from the previous permit, and thus this is the existing (implied) design flow as well as the new design flow. The new water quality-based effluent limit [$WQBEL_{new}$] and the current authorized discharge concentration [Existing Limit] are the same. Nothing has changed from the previous permit to this Permit (with the exception of additional effluent limitations and monitoring requirements). Therefore, the potential new discharge load [$Load_{new}$] and the current authorized discharge load [$Load_{old}$] are equal for all pollutants.

Following the flow chart in Figure 2 from the above-referenced document, since the [$Load_{new}$] = [$Load_{old}$], and the [$WQBEL_{new}$] = [Existing Limit] for all pollutants, an increased water quality impact will not occur and the antidegradation review is terminated for this stream segment at this time.

6.7 Anti-Backsliding

Federal regulations require at 40 CFR Part 122.44(l)(1) that "when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit were based have materially and substantially changed since the time the Permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR Part 122.62)."

This permit renewal complies with anti-backsliding regulatory requirements. With the exception of the TSS limits, all effluent limitations, standards, and conditions in the Permit are either equal to or more stringent than those in the previous permit (see section 2).

With regards to the TSS limit, the limits are being changed to be more in line with Colorado Regulation Number 62 and be more protective of water quality standards overall. However, the

removal of the daily maximum effluent limit does allow the possibility that in certain situations the new limits could be less stringent for short-term periods.

The previous statement of basis stated that the 45 mg/L was implemented as a daily maximum because the frequency of sampling was not sufficient to provide for averaging of multiple samples for 7-day and 30-day limits. However, a weekly sampling frequency does provide enough data to evaluate both weekly and monthly limits. Due to this technical mistake in the previous permit, an exception to the backsliding regulations is allowed per 40 CFR 122.44(l)(2)(i)(B)(2). Overall, the new TSS limits will be more protective of water quality standards by requiring a lower average monthly TSS limit.

7 MONITORING REQUIREMENTS

The following parameters shall be monitored during discharge from the dewatering operation (Table 6). If no discharge occurs during a monitoring period, "no discharge" shall be indicated on the DMR. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, as required in 40 CFR Part 122.41(j).

Effluent monitoring samples shall be taken at each outfall with a discharge at the listed frequency. The effluent sampling location shall be after all treatment processes but prior to discharge to the receiving water.

Monitoring requirements have changed significantly from the previous permit to include additional VOCs, phenols, metals, and WET testing (Table 6). This increased monitoring will allow EPA to determine if there is reasonable potential for violations of Colorado water quality standards to occur. Note that effluent limits for the additional monitoring parameters are not included in the Permit (see section 6.5).

Table 6. Monitoring Requirements – Outfall 001 through 008

Effluent Characteristic	**Pollutant Type**	**Frequency**	**Sample Type a/**
Total Flow, million gallons per day (mgd)	-	Daily b/	Instantaneous
Oil and Grease, visual	conventional	Weekly c/	Visual
Oil and Grease, mg/L	conventional	Immediately if a visible sheen or floating oil is detected or observed in the discharge c/	Grab
pH, s.u.	conventional	Weekly d/	Grab
Total Suspended Solids, mg/L	conventional	Weekly e/, f/	Grab
Benzene, µg/L	VOC	Weekly f/, g/	Grab
BTEX, µg/L	VOC	Weekly f/, g/	Grab
1,1-Dichloroethane (1,1-DCA), µg/L	VOC	Weekly f/, g/	Grab
1,1-Dichloroethene (1,1-DCE), µg/L	VOC	Weekly f/, g/	Grab
Tetrachloroethene (PCE), µg/L	VOC	Weekly f/, g/	Grab
1,2,4-Trichlorobenzene, µg/L	VOC	Weekly f/, g/	Grab
1,1,1-Trichloroethane (1,1,1-TCA), µg/L	VOC	Weekly f/, g/	Grab
Trichloroethene (TCE), µg/L	VOC	Weekly f/, g/	Grab
Vinyl Chloride, µg/L	VOC	Weekly f/, g/	Grab
Phenol, µg/L	Phenol	Weekly f/, g/	Grab
2-chlorophenol, µg/L	Phenol	Weekly f/, g/	Grab

Effluent Characteristic	**Pollutant Type**	**Frequency**	**Sample Type a/**
4-chloro-3-methylphenol, µg/L	Phenol	Weekly f/, g/	Grab
2-nitrophenol, µg/L	Phenol	Weekly f/, g/	Grab
4-nitrophenol, µg/L	Phenol	Weekly f/, g/	Grab
Pentachlorophenol, µg/L	Phenol	Weekly f/, g/	Grab
Cadmium (Cd), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Chromium (Cr), total recoverable, µg/L	Metal	Weekly f/, g/	Grab
Copper (Cu), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Iron (Fe), total recoverable, µg/L	Metal	Weekly f/, g/	Grab
Lead (Pb), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Manganese (Mn), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Mercury (Hg), total, µg/L	Metal	Weekly f/, g/	Grab
Nickel (Ni), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Selenium (Se), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Silver (Ag), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Zinc (Zn), dissolved, µg/L	Metal	Weekly f/, g/	Grab
Whole Effluent Toxicity, acute LC_{50} h/	-	Once Per Construction Project	Grab

a/ See section 1 of the Permit for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate for the month and the daily maximum flow (maximum volume discharged during a 24-hour period) shall be reported (in million gallons per day).

c/ If a visible sheen or floating oil is detected or observed in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 C.F.R. Part 136.
d/ The maximum and minimum pH shall be reported each quarter.
e/ The highest weekly value and average monthly value shall be reported for each month in the quarterly reporting period.
f/ After ten weeks of monitoring, if the results continue to show no effluent limit exceedances (for those that have effluent limits), the Permittee may request in writing, in accordance with Section 6.5 of the Permit, a reduction in monitoring frequency to monthly. EPA may approve or deny the request based on the monitoring results and other information available (including surface water quality standards) without further public notice or modifying the Permit. This reduction in monitoring would apply to that construction project only – any new or concurrent construction projects would revert to/remain on the weekly monitoring frequency. Note that flow, pH, and the oil & grease visual observation are not included in this reduction – these will continue to be required at the frequency stated in this table.
g/ For VOCs, phenols, and metals, the average monthly value and maximum daily value shall be reported for each month in the quarterly reporting period.
h/ One acute WET test shall be performed at least once for each construction project discharge. It shall be performed on two species; *Ceriodaphnia dubia*, EPA 2000.0, as a 48-hr, static-renewal definitive test with renewals at each 24-hr interval, and *Pimephales promelas*, EPA 2002.0, as a 96-hour static-renewal definitive test with renewals at each 24-hr interval. Both test shall utilize the standard dilution series of 100%, 75%, 50%, 25%, 12.5% and a 0 control, with hard synthetic laboratory water for dilutions with test temperature set at 25° Celsius.

8 REPORTING REQUIREMENTS

On December 21, 2015, the NPDES Electronic Reporting Rule (40 CFR Part 127) went into effect. This rule includes two phases. Phase 1 included the requirement that by no later than December 21, 2016, entities that are required to submit DMRs must do so electronically unless a waiver from electronic reporting is granted to the entity. Phase 2 includes the requirement that by no later than December 21, 2020, or as otherwise specified in 40 CFR Part 127, other specified reporting must be done electronically.

With the effective date of the Permit, the Permittee must electronically report DMRs on a quarterly frequency using NetDMR. Electronic submissions by permittees must be submitted to EPA Region 8 no later than the 28th of the month following the completed reporting period (Table 7). The Permittee must sign and certify all electronic submissions in accordance with the signatory requirements of the Permit. NetDMR is accessed from the internet at https://netdmr.zendesk.com/home.

The reports that are to be submitted electronically after December 21, 2020, or as otherwise specified in 40 CFR Part 127, are to be submitted using the NPDES Electronic Reporting Tool (NeT). The instructions on how to use NeT are not yet available. In the future, the Permittee will receive instructions on how to use NeT. Until then, the Permittee shall continue to submit these reports in paper format by mailing them to the specified addresses.

Table 7. Due Dates for Quarterly DMR Submittals

Compliance Monitoring Period	Due Date
January – March	April 28
April – June	July 28
July – September	October 28
October – December	January 28

9 ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act (ESA) of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, "listed" species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical ("critical habitat"). See 16 U.S.C. § 1536(a)(2), 50 CFR Part 402. When a Federal agency's action "may affect" a protected species, that agency is required to consult with the FWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR Part 402.14(a)).

The U. S. Fish and Wildlife Information for Planning and Conservation (IPaC) website program was accessed on July 14, 2020 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species that may be present in the portion of Jefferson County, Colorado near the DFC (Table 8).

Table 8. Potentially Affected Species at this Location

Species	Scientific Name	Status
Canada lynx	*Lynx canadensis*	Threatened
Least tern	*Sterna antillarum*	Endangered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened
Piping plover	*Charadrius melodus*	Threatened
Whooping Crane	*Grus americana*	Endangered
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Ute ladies'-tresses	*Spiranthes diluvialis*	Threatened
Western Prairie Fringed Orchid	*Platanthera praeclara*	Threatened

Additionally, IPaC determined there are no critical habitats at this location.

9.1 Biological Evaluations and Conclusions

Biological evaluations of the potential effects of the proposed action on the eight listed species and their critical habitat are provided below. These biological evaluations are based on information obtained from the IPaC site and knowledge regarding the proposed action.

The proposed action is reissuance of this NPDES permit. This is a continuation of existing operating conditions; no significant changes to habitat or discharge volumes or quality are planned or expected due to the reissuance of this permit. Since this is a dewatering permit, there is no consumptive use, and no water depletions will result from this Permit. Permit effluent limitations are protective of receiving water quality.

Canada lynx, *lynx canadensis* – This species is currently listed as threatened. This location is outside the critical habitat for this species. Canada lynx inhabit alpine or boreal forests and are unlikely to be found in the urban setting of the DFC. Regardless, the Permit does not authorize changes to habitat that supports this species, nor are discharges from dewatering operations anticipated to affect this species. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Least tern, *Sterna antillarum* – This species is currently listed as endangered. No critical habitat has been designated for this species, and IPaC notes that this species only needs to be considered if water related activities/use in the South Platte River Basin may affect listed species in Nebraska. Continuation of this intermittent dewatering activity in the Denver metropolitan area will not affect populations in Nebraska. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Mexican spotted owl, *Strix occidentalis lucida* – This species is currently listed as threatened. This location is outside the critical habitat for this species. Mexican spotted owls typically inhabit mature, old growth mixed forests and rocky canyonlands with minimal human disturbance and are unlikely to be found in the urban setting of the DFC. Regardless, the Permit does not authorize changes to habitat that supports this species, nor are discharges from dewatering operations anticipated to affect it. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Piping plover, *Charadrius melodus* – This species is currently listed as threatened. This location is outside the critical habitat for this species, and IPaC notes that this species only needs to be considered if water related activities/use in the South Platte River Basin may affect listed species in Nebraska. Continuation of this intermittent dewatering activity in the Denver metropolitan area will not affect populations in Nebraska. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Whooping crane, *Grus americana* – This species is currently listed as endangered. This location is outside the critical habitat for this species, and IPaC notes that this species only needs to be considered if water related activities/use in the South Platte River Basin may affect listed species in Nebraska. Continuation of this intermittent dewatering activity in the Denver metropolitan area will not affect populations in Nebraska. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Pallid sturgeon, *Scaphirhynchus albus* – This species is currently listed as endangered. No critical habitat has been designated for this species, and IPaC notes that this species only needs to be considered if water related activities/use in the South Platte River Basin may affect listed species in Nebraska. Continuation of this intermittent dewatering activity in the Denver metropolitan area will not affect populations in Nebraska. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Ute ladies'-tresses orchid, *Spiranthes diluvialis* – This species is currently listed as threatened. No critical habitat has been designated for this species. The Ute ladies'-tresses orchid typically occurs in riparian, wetland and seepy areas associated with old landscape features within historical floodplains of major rivers. They are also found in wetland and seepy areas near freshwater lakes or springs. Ute ladies'-tresses orchids are unlikely to be found in the disturbed urban setting of the DFC. Regardless, the Permit does not authorize changes to habitat that supports this species, nor are discharges from dewatering operations anticipated to affect it. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Western prairie fringed orchid, *Platanthera praeclara* – This species is currently listed as threatened. No critical habitat has been designated for this species, and IPaC notes that this species only needs to be considered if water related activities/use in the South Platte River Basin may affect listed species in Nebraska. Continuation of this intermittent dewatering activity in the Denver metropolitan area will not affect populations in Nebraska. Based on this information, EPA has determined that the reissuance of the Permit will have **no effect** on this species.

Per an informal consultation with the FWS on July 16, 2020, and the *Endangered Species Consultation Handbook* and the *Memorandum of Agreement Between EPA, FWS, and NMFS Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act*, the "no effect" determinations above do not require further consultation with the FWS. During public notice of the Permit, FWS will be notified as an interested party.

10 NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The U.S. National Park Service National Register of Historic Places database was used to determine and evaluate resources of concern in or near the DFC.

The U.S. Government purchased what is the DFC property in the early 1940s, and developed it into the Denver Ordnance Plant. Currently, most of the buildings constructed on the DFC have been renovated, thus making them potentially ineligible for National Historic designation. Only two buildings have currently maintained enough structural and physical integrity to meet the criteria for consideration for National Register designation: the original Office of Civil Defense Emergency Operations Center adjacent to Building 50, and Building 710. Both of these buildings are underground. Because this Permit is associated with discharges into McIntyre Gulch, EPA's preliminary determination is that this permit renewal will not impact any historic properties.

During public notice of the Permit, Colorado's State Historic Preservation Office (SHPO) will be notified as an interested party to ensure that historic properties are not negatively affected by the conditions of the Permit.

11 MISCELLANEOUS

The effective date and expiration date of the Permit will be determined upon issuance for a period not to exceed 5 years.

Permit drafted by Erik Makus, U.S. EPA, (406) 457-5017, July 2020.

ADDENDUM:

AGENCY CONSULTATIONS

On Month Day Year, the FWS agreed with/disagreed with/did not comment on with EPA's preliminary conclusion that the Permit reissuance will have no effect on listed species.

On Month Day Year, the Colorado SHPO agreed with/disagreed with/did not comment on EPA's preliminary determination that the Permit reissuance will not impact any historic properties.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis were public noticed on the EPA WEBSITE on Month Day Year. The comment(s) received and the response(s) are provided below/No comments were received.

Comment:

The commenter noted that …

Response:

The following language was added to the final Permit/No changes were made to the final Permit…